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THE

Alienist and Neurologist

A QUARTERLY JOURNAL

OF

Scientific, Clinical and Forensic
Psychiatry and Neurology.

*Intended especially to receive the wants of the
General Practitioner of Medicine.*

"Quantam ego quidem video motus morborum fere omnes a motibus in systemate nervorum ita pendere,
ut morbi fere omnes quoJammodo Nervosi dici queant."—Cullen's *Nosology*: Book II., p. 181—Edinburgh Ed. 1780

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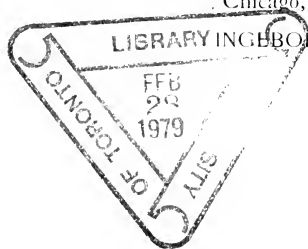
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NO. 3.

ORIGINAL CONTRIBUTIONS.

DIFFERENTIAL DIAGNOSIS OF
INSANITY.*

By C. B. BURR.

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THE absence of any definite pathological basis for mania, melancholia and similar states of perverted brain action, displaying themselves in irregular sensory, motor and intellectual manifestations, proves a serious stumbling block in the attempt to carefully differentiate these so-called functional insanities. Perhaps for practical purposes it is relatively unimportant that lines of demarkation between them should be closely drawn. Whether the irregular cerebral action be of the nature of depression or excitement, the bearing of the matter is that reduction in nervous force and unnatural flow of cell energy are present. Therapeutically, we have to contend with conditions of cerebral innutrition and exhaustion.

The absolutely pure types of mania and melancholia are not numerous, states of temporary depression and sluggishness and emotional distress being observed at times in mania and of brief ecstasy in melancholia. Indeed, so impracticable

*Read at the meeting of the Tri-State Medical Association, Angola, Ind., July, 1896.

is it to invariably classify functional mental states in these groups satisfactorily, that an intermediate position is now claimed for acute confusional insanity by recent writers, and this is accorded a place in the nomenclature of disease.

In view of the paucity of material on the subject of differentiation in insane conditions, and the inconsistent character of diseased mental manifestations it ought not to occasion surprise if mistakes in diagnosis (common as they are) were still more numerous. From a therapeutic point of view, to fail to differentiate between a mania and a melancholia with frenzy is relatively unimportant if proper safeguards are thrown about the patient. Both these conditions are curable under favorable circumstances, but while this is true, and the indications for medical treatment much the same in both conditions, their day to day moral management implies a correct acquaintance with the underlying emotional states. Again, while we may safely say that the prospects for recovery of a simple uncomplicated case of acute mania or acute melancholia are good, to offer this hope in the case of one suffering from the depression of recurrent mania (mistaking the condition for simple melancholia), or to predict recovery for one in the maniacal stage (occasionally attending parietic dementia), is to do injustice to the friends of the patient and to weaken the influence of the medical practitioner himself.

In the absence of a pathological basis for mental disease, unattainable in the present state of our knowledge, we are compelled to fall back upon symptomatological groupings. Aetiological classifications are in existence and are clinically of considerable interest and satisfaction, but the student will find much practical value in the separation of morbid mental states into those²² of

- 1st. States of mental depression
- 2nd. States of mental exaltation
- 3rd. States of mental alternation
- 4th. States of mental enfeeblement
- 5th. Brain disease with predominant mental manifestations.

States of mental depression comprise the melancholias and all so-called functional disturbances of mental action characterized by persistent lowering of emotional tone.

Among states of mental exaltation, the most interesting is that form of disease known as acute mania, and under this head are included all mental diseases displaying excitement as a prominent feature, exclusive of melancholia with frenzy, chronic mania, recurrent mania in the period of excitement, and cases of organic dementia (the most frequent and important of which is general paresis or general paralysis of the insane).

The intermediate group, which partakes of the nature of both mania and melancholia, is acute confusional insanity. This form of disease is characterized by extreme mental confusion, varying emotional states, hallucinations and delusions of a changing character, and changing mental impressions.

The type of states of mental alternation is recurrent mania, relapsing mania or *folie circulaire*, which shows periods of excitement alternating with periods of depression, and at times, periods of composure and complete lucidity.

Under states of mental enfeeblement are included, all conditions of mental deterioration, acute or chronic, curable or incurable, such as dementia (mental impairment acquired), imbecility (congenital mental deficiency), paranoia and the like.

In the last group, brain disease with predominant mental manifestations, are found; parietic dementia, dementia from hemiplegia, from epilepsy and from tumor or coarse brain disease.

Mania acute is an insanity of recent onset, the leading characteristics of which are elation, changing delusions and active excitement. Its development is usually sudden, although it is commonly preceded by depression, emotional disturbance, sleeplessness, loss of appetite and bodily derangements. The disease may be of all grades, from relatively slight restlessness, loquacity, increased and abnormal business enthusiasm, irritability, perversion of feeling and egotism, up through the severer forms attended by

complete incoherency, absence of self-control, untidiness of habits, and demonstrations of violence, to the severest type, that of acute exhaustive mania, in which the excitement is more of the nature of delirium, and in which low mutterings, picking at the bed clothing, the accumulation of sordes upon the teeth, rapidly increasing debility and death, appear.

In a typical case of acute mania, impressions travel quickly and are, as a rule, pleasurable, hallucinations and delusions of a changing character are present, the memory is temporarily impaired, there is failure in judgment, in reasoning and in ideation. The emotions are exalted and pleasurable. The will is impaired and inhibitory control is hindered or lost. There are inattentiveness, disorderly conduct, destructiveness, and lack of correct appreciation of events. The physical symptoms are; rapid circulation, dry tongue, hot skin, suffused and congested eyes, slightly elevated temperature, scanty urine, inactivity or looseness of the bowels and fitful sleep. Food is taken indifferently, owing to the inattentiveness of the patient, and is often badly assimilated in consequence of deranged secretions.

Acute mania may be mistaken for alcoholic delirium. This disease relatively frequent in general and hospital practice, is not unlike acute mania in many of its manifestations. The history of the case, the extreme physical perturbation in alcoholic delirium, the characteristic fixed hallucinations and delusions of a painful type, the gastric disturbances, the tendency toward prompt subsidence under appropriate treatment will prevent the error of confounding these two conditions. In passing, and at the expense of digression, permit me to mention a, to me, very interesting clinical fact: Alcoholic insanity (not acute alcoholism, but the degenerative condition due to prolonged alcoholic indulgence) seems to destroy the appetite for liquor. Given the development of an insanity due to drink, and the patient is thenceforward free from the gnawings of appetite. Indeed, a positive repulsion to liquor in every form is frequently noticed in degenerative mental states, due to the prolonged use of stimulants. I have not a few times met with the experience of having an egg nog or milk punch when needed to sustain life,

flatly refused by an insane patient who had been formerly addicted to excessive alcoholic indulgence.

Mania acute may be confounded with the delirium attending fevers, tubercular meningitis, simple meningitis and septic diseases. Doubtless, mistakes of this kind are infrequent, but I have seen a very pure case of tubercular meningitis removed to an asylum. The history of the case and the physical symptoms must be the physician's main reliance. Caution should be exercised here, lest great harm be done a patient by subjecting her to the fatigue and exposure of travel, and reproach brought upon the medical profession by the action of a member in advocating or permitting removal from home under such distressing circumstances. The mistaking fictitious for real strength in cases of mental excitement is an ever present danger to the medical practitioner in treating these patients. I well remember a number of years ago, that two patients were brought to the Eastern Michigan Asylum, from different parts of the state within twenty-four hours of each other. Both died from pneumonia within thirty-six hours of their arrival at the institution. My recollection does not serve me sufficiently well to permit any statement as to the assigned cause or duration of mental disease in these patients. I am strongly inclined to the belief, however, that the delirium was in one of the cases at least, a febrile condition. In neither case was the attending physician justified in permitting removal from home. Intense fever, burning skin, convulsive movement, muscular twitching, spasmodic action, opisthotonos, headache, paralytic symptoms, present in association with mental excitement are to be viewed with deep alarm.

In hystero-mania, we have brief and evanescent excitement arising in one of hysterical mental organization, in consequence of habitually unchecked impulses. This form of mental disease frequently shows itself at the developmental period, pubescence. There is impairment of the will, or at all events, inhibitory control is not exercised. Patients of this class are very imitative, and thrive on sympathy. They are emotional, possibly feign convulsive seizures, affect opisthotonos, do disorderly acts, are mischievous. It is

important that this condition be early recognized, that a wholesome moral *regime* may be adopted. Such patients do exceedingly well in institutions—this largely because of the recognition of the mental state on the part of those having their care, and the judicious ignoring of the sensational demonstrations which had made the individual the object of so much neighborhood interest. Hospital treatment may, in some instances, be avoided, however, if the patient is under healthful discipline at home, cared for by a trained attendant, withdrawn from the disturbing and emotion-increasing society of female relatives, and stimulated to exert his latent powers of self-control.

Chronic mania occasionally shows exacerbations of mental excitement. It is but necessary to point out this fact to place the diagnostician upon his guard that he do not consider the condition acute mania, and prognosticate recovery. The history of all cases should, if possible, be added to by interviews with unprejudiced observers. It is astonishing how frequent inaccurate observation is and how much is concealed by relatives in their accounts of cases. They aim to make it appear that the mental trouble is of recent onset, and are contented if they can mislead the medical practitioner and deceive themselves. In chronic mania, we find greater fixity of delusions than in acute mania, and mental impairment. It is a secondary condition following upon uncured acute forms of disease, especially melancholia with frenzy and acute mania.

One suffering from recurrent mania undergoes periods of excitement and periods of depression, these with or without intervals of composure and complete lucidity. The first attack frequently occurs at the pubescent age, or in women, a little later, at the age of twenty-one or thereabouts. It is a developmental disease, remotely attributable to some innate constitutional defect, and it is not surprising that its first symptoms should present themselves at an age during which occurs the greatest physiological crisis which the system undergoes. In the stage of excitement, the demeanor of the patient may be similar to that of one suffering from acute mania, but excitement is rarely so intense. Well

marked delusions and hallucinations are frequently absent, and there may be so perfect coherency as to deceive the inexperienced examiner. There is an extravagance in expression and a high coloring of innocent or immaterial things. Patients of this class are fond of misconstruing, and with the slightest basis, make embarrassing accusations against others with a view of justifying loss of temper and impulsive acts. They are frequently scheming and malicious, and have a fund of sarcasm and invective, which may be of service in court in mystifying juries and convincing these bodies of our peers that there is no necessity for custodial care, and that one who can "talk like that" and make so good a case, cannot be insane. Extreme moral perversion is often displayed, and I am satisfied that many, if not most of the cases of so-called moral insanity, would properly fall under this group. At times, excitement reaches an extreme degree, but this is not the rule, and a careful inquiry into cases will develop the fact that periods of depression and brooding have alternated with excitement. During such periods, these patients are remorseful for acts done in excitement. They are apt to shun the world, to brood and despair. Suicidal thoughts occasionally appear, but are rarely carried into execution, and the characteristic delusions of melancholia, of impending want, of spiritual degeneracy, of the unpardonable sin, are absent.

In melancholia with frenzy, we encounter a form of disease having certain characteristics like those of acute mania. In both mania and melancholia with frenzy, there are excitement, sleeplessness and disorderly conduct. These symptoms arise from a vastly different groundwork, however, and the key to diagnosis is found in the reason for their development. In mania, exalted emotions, fleeting percepts and changing hallucinations and delusions are responsible for their existence. In melancholia with frenzy, depressed emotions, fixed delusions of persecution and fear of injury disturb the patient's rest, and destroy all mental comfort. In both conditions, sensation is lively, attention is fixed with difficulty, and perception is false, but while in acute mania, impressions are fleeting and largely objective

and pleasurable, in melancholia with frenzy, they are of a fixed character, are both subjective and objective and painful. One suffering from acute mania finds it difficult to fix his attention, because of the rapidity with which percepts originating in impressions from without, come into consciousness; one suffering from melancholia with frenzy, because of concentration of attention upon that which is within. In mania, hallucinations are frequent and changing, and usually pleasurable; illusions are rare. In melancholia with frenzy, on the contrary, hallucinations are of a fixed character, and vary little in their expression; and illusions, particularly visceral illusions, which lead to picking of the face and hands to removed fancied vermin, are often observed. Ideation, reasoning and judgment are in both cases impaired, but while in mania, there are incoherency and fleeting delusions of a pleasurable character, in melancholia with frenzy, there is, as a rule, partial coherence, and delusions are of a fixed and distressing nature. One suffering from melancholia with frenzy may be destructive and disorderly, and make assaults, but the reason for the conduct lies in delusions of persecution and the disposition to protect himself from injury, and not as in mania in changing mental impressions and lack of inhibitory control. In mania, food is refused from inattentiveness, in melancholia with frenzy, because of the fear of poison.

It will be observed that the differentiation of these conditions rests upon accurate knowledge of the basal emotional states. The matter of diagnosis is of the utmost importance, because of the tendency of patients in melancholia with frenzy to self mutilation and suicide. They require care at all times, and while fearful of harm from others, will seek for any means of self-destruction, to escape the horrors of existence under the menace they constantly feel from without.

Periods of mental excitement appear in the progress of paranoia, a most interesting form of insanity, and one to which much attention has been paid in recent years. Excitement here occurring, is an incident in the progress of a chronic mental disease, and has its basis in painful delusions. The

paranoiac is from childhood, peculiar and eccentric. He is ill balanced and introspective, and develops unsymmetrically. A vague suspiciousness marks the earlier period of the disease. This may be very pronounced, but delusions of unworthiness or of religious unfitness are absent. He cannot tell why he is conspired against until later on in the disease. The melancholiac, on the contrary, accepts his unhappiness as a punishment for sin, and feels deserving of all and more than all he receives. From the persecutory stage, through the period of transition in which some unimportant event, as an hallucination or the encounter of a significant passage in reading awakens him to the truth, to the state of well developed and abiding delusions, the paranoiac slowly passes. These delusions pertain strictly to the individual and his relation to society. They are logical and have direct reference to the persecutory period. He sees now, why he has been persecuted and calumny heaped upon him. All this was in the plan of the conspirators, who sought to destroy him, to defraud him of his inheritance, to prevent the knowledge on his part that he is the Savior of the world, or an earthly prince. He has triumphed over them. His inventions are to revolutionize travel, or heal all disease. His merits and position and genius are finally to be recognized.

In passing, it may be well to refer to the diagnostic points between this disease and the earlier stages of parietic dementia, a disease also showing extravagant delusions. The delusions of the paranoiac are logical, have been slowly developed, and are the outgrowth of a diseased personality. The "cranks" of the world pertain to this class. The parietic's grandiose delusions are illogical and changeable. He displays, even in the earlier periods of the disease, great restlessness and impracticable business schemes. He drops words from sentences and letters from words, in writing. Symptoms of inco-ordination of muscular movement slowly increase. He resents being placed under treatment, and demands his release from confinement. The paranoiac accepts confinement as part of the great scheme in his life. He is fated to be a martyr, even as was Christ,

or he is brought into his present situation by the special design of a Providence that foresaw a vast field of work for him to accomplish among the mentally sick.

In the progress of parietic dementia (general paresis) paroxysms of intense maniacal excitement occasionally occur. Such excitement is always furious and unreasoning. It is accompanied by intense heat of the surface, congestion of the head, injection of the conjunctivae, pupillary contraction or inequality and grandiose delusions. In the fully developed stage of the disease, the prominence of the motor symptoms will establish the diagnosis. Early in the malady, however, its recognition may be more difficult. Reference to the etiology (its dependence upon intemperate habits, syphilis, excesses and exhausting vices) may be of service to the examiner. Erratic conduct, neglect of business or extravagant speculations, improvidence and impracticable business ventures, the absence of an emotional period (the stage of depression preceding excitement) also furnish important diagnostic signs. It should be remembered, however, that in occasional cases, there is a well marked period of depression preceding the development of the disease, and that extravagant depression, visceral illusions, the belief that an extremity is of wood or ice, that the stomach is gone, that sexual organs are lacking, all these different symptoms depending upon disturbances of sensation, occasionally take the place of delusions of wealth and power, and lead to the confounding of the condition with melancholia.

It is a frequent and unfortunate blunder to mistake the epileptiform seizures of parietic dementia for those of true epilepsy. As a rule, the epileptiform attacks of parietic dementia are severe and of longer duration than those of idiopathic or traumatic epilepsy; they are more frequently attended by pareses and always by increased inco-ordination and mental obtunding. Now and again, however, the epileptiform or congestive attacks in the early stage of parietic dementia are of a syncopal nature. Such seizures occurring in a patient hitherto unaffected in a similar way, but perhaps coupled with conspicuous loss of memory and signs of mental failure extending over a period of weeks or

months should excite suspicion that the trouble with which the practitioner has to deal is a dementia of organic origin. There can be but little danger of confusing paretic and senile dementia, the former being a disease of adult life. I knew of a well marked case in a gentleman past seventy years of age, but this is the only one which I, at present, recall in a large experience with this interesting, alarmingly frequent, and lamentably fatal malady.

In the differentiation of paretic dementia from other forms, some importance may be laid upon the sex of the patient, the disease being relatively rare among women. The disparity in numbers between patients of the two sexes, however, is of late far less noticeable than in former years.

Alcoholic pseudo paresis is frequently mistaken for true paretic dementia. I have in mind at present, two cases in which the resemblance to paretic dementia was so strong as to lead to the diagnosis of the latter condition. In one which came under my observation within the past year, there were delusions of the most extravagant type, the pin-hole pupil, indistinctness in articulation, visceral delusions, and marked ataxia in gait and speech. Regis says that inequality of the pupils is scarcely ever lacking in alcoholic pseudo general paresis, and that permanent hemiplegia and aphasia are more frequent and more persistent than in true paresis. The pupillary aperture is often misshapen, the pupil is dull and cloudy, and visual acuteness is lost in the alcoholic type. In the remissions of general paresis, pupillary inequality is one of the first symptoms to disappear, while the embarrassment of speech remains in a greater or less degree. The reverse is true of alcoholic paresis.

Stearns says that, in the alcoholic paretic, delusions of grandeur are persistent, and rarely change, while in true paresis, these ideas change from day to day without order or consistency. He also says that the difficulty in pronunciation of certain words and sentences is greater, and the fibrillary tremor more limited in general paresis than in the other condition. In both, epileptiform seizures and local anaesthesias occur, but in alcoholic paresis, hallucinations of sight and sensory disorders are more marked than in

pareisis. In alcoholic pareisis, the patient frequently suffers from gastric catarrh and loss of appetite, while a ravenous appetite is almost an invariable accompaniment of true parietic dementia.

Bevan Lewis says that motor impotence, not inco-ordination or ataxy, is the distinctive feature of alcoholism of the motor sphere of the cerebrum. How does this motor enfeeblement betray itself? The earliest indication is usually a notable degree of fine muscular tremor, implicating in the first place, the fingers and hand, and gradually spreading to the arm; in the next place, involving the tongue, lips and articulatory muscles generally, and lastly, extending to the foot and leg. The tremor is always more marked in the morning, and may be dissipated by a glass of spirits; if at first not obvious, it may often be brought out by prolonged extension of the arm; any slight voluntary exertion tending to establish it.

With these opinions, I am practically in concurrence. The difficulties, however, in differentiating true general paresis (possibly of alcoholic origin) from alcoholic pseudo general paresis is at times very great.

It is difficult, also, to distinguish clinically, cases of syphilitic cortical degeneration from true general paresis. Spitzka says numerous attempts have been made to establish some criterion on the strength of which to be able to distinguish syphilitic from typical parietic dementia, but these do not always hold good. This coincides with my own experience. In a general way, however, it may be said that extravagant delusions are less apt to manifest themselves; that epileptiform seizures are frequently among the very early manifestations; that the duration of the disease is longer; that confusional states are more apt to occur; and that the memory sustains early and marked impairment in the syphilitic cases. In this connection, it may be of interest to speak of two cases of syphilitic dementia which have come under my observation, in which departure from the normal was manifested almost exclusively in the intellectual sphere, and chiefly in impairment of memory of recent events. In both these cases, there were mental

obtunding, dullness, sluggishness and inaptitude, but the leading characteristic of the disease was almost complete inability to register and retain recent impressions. Delusions and ataxia were absent.

Melancholia may be confounded with dementia after mania or dementia after melancholia (conditions of impairment consequent upon prolonged disorder of the mental operations, incident to the acute attack). The patient is apathetic, dull and abstracted. He finds it difficult to fix his attention and his mental grasp is inefficient. There is absence of delusions, and the patient under favorable conditions will recover. Too much stimulated, however, the enfeebled brain called upon for too great an outlay, confusion may result and mental impairment follow. It is in this stage that great harm is often done by removals from hospitals, and premature resumption of home and business life on the part of the patient. One convalescing from an acute mental disorder should be safe-guarded that he do not overstrain his mind at first, but by degrees come into its full exercise.

The danger of confounding melancholia with the depression of recurrent mania is not great if it is borne in mind that true delusions are not necessarily present in the latter condition, and if the history of the case is carefully followed.

The disease known as melancholia with stupor may be mistaken for dementia. The differential points between these conditions are summed up by Savage as follows:

| <i>Melancholia with Stupor</i> | <i>Dementia.</i> |
|--------------------------------|------------------|
| Development often rapid | Slow |
| Nutrition fails | Often good |
| Complexion yellow | Normal |
| Excretions deficient | Normal |
| Sleep bad | Good |
| Opposition to all movements | Passive |
| Appetite—refusal of food | Voracious |
| Suicidal | Not suicidal |
| Memory present | Absent |

A form of insanity called katatonia has been described by Spitzka and other American authors, following the lead

of Kahlbaum of Görlitz, who first described it. I, myself, have not been able to distinguish this disease. Similar symptoms to those described pertain to melancholia with stupor, and may be seen in the depressed period of recurrent mania. Regis, writing of the condition, says:

“The majority of foreign authors recognize and describe under the name of *attonität* and *Katatonía* (Kahlbaum), conditions which are fundamentally, as Seglas and Chaslin have recently demonstrated, nothing else than melancholia with stupor under its different aspects, and in which predominate either the phenomena of hebetude, or spasmodic and cataleptiform symptoms.”

With sincere appreciation of the growing interest in matters pertaining to psychiatry, displayed in recent years by medical bodies of this character, I close this imperfect review of an important subject.

OBSERVATIONS ON THE HISTOLOGICAL DEVELOPMENT OF THE CEREBELLAR CORTEX IN RELATION TO THE FACULTY OF LOCOMOTION.*

By DR. AURELIO LUI.

AS has already been mentioned in the introductory remarks published in this journal[†] my first observations in this matter were pursued in the physiological laboratory at Padua, directed by Prof. Stefani.

But at that time, using only the common methods of microscopical investigation and the usual staining reagents, I was able to determine only some facts of general character which could not be exactly interpreted.

In the animals then studied I was able to establish this remarkable coincidence, viz., that the complete development of the cerebellum was reached at the time when they respectively were able to assume an upright position and to walk, and that the different developments at the time of birth and at various successive periods, advanced *pari passu* with the more or less early dates at which such faculties manifested themselves.

Thus for example, the series of external granules in the infant at birth are much more numerous than in the sheep, and disappear much more slowly. In the chicken, which walks as soon as hatched, they are reduced to two or three rows of granules, which stain only slightly, while in the dove we find them still different.

*Translated by Dr. Susanna P. Boyle, Professor of Normal and Pathological Histology, Ontario Medical College for Women, Physician to Girls' Home, Toronto, from *Revista Sperimentale di Frenatria* Vol. XXII, Fasc. I.

[†]*Riv. Sper. di Fren.* Vol. XX fasc. II 218 1894 Translated in *Alienist and Neurologist.*

The modifications by means of which the cerebellum reaches its definitive form may be said to be, a gradual disappearance of the external granular layer, a gradual increase of the molecular substance, in a modification of the cells of Purkinje by means of which these, from being pyramidal, become globular owing to increase of protoplasmic substance, and the nuclei undergo a change of position, tending either to become centralized, or to be carried to the superior half of the cell, a change analogous to that observed in the pancreatic cells of Heidenhain during a state of activity.

But is this to be considered as of general application? And admitting this, what is the exact value to be assigned to the structural modifications which have been noted in the cerebellar cortex? Does the external stratum of granules disappear by a process of slow atrophy, or do changes of different natures take place within this layer? Does the increase in the molecular substance take place at the expense of these latter elements? Was it the cells or the fibres or both which gradually modified and developed, or were there only mutual relations between these two elements or none at all?

Since a fine and detailed examination of the minute anatomy of tissues is to-day a potent auxiliary, in the interpretation of physiological phenomena, it is necessary to fill all the above requirements, and thus to confirm by circumstantial anatomical facts the remarkable coincidence just noted.

Hence the need of new and more delicate investigations.

The researches were extended in mammifera to rabbits, rats and cats, the studies being pursued from the period of birth until that of walking; in birds besides repeating all the observations on the chicken which walks immediately after birth, I extended my researches in the same way to the sparrow and starling, which do not acquire the faculty until later.

In this new series of observations, besides the usual methods of microscopical *technique*, I used largely Golgi's

rapid black stain (viz., fixation of the specimens in a mixture composed of 8 parts of 2.5% solution of bichromate of potash and 2 of 1% solution of osmic acid, and successive impregnation with nitrate of silver), as that which is most successful for the nerve tissues of very young and especially of newly-born animals, if one is careful to avoid too long immersion in the mixture. I obtained the best reductions with the silver salt after an immersion of not more than sixteen or eighteen hours.

By this method which permits the perception of an important number of structural peculiarities, otherwise impossible to discover in studying the progressive development of the cerebellar cortex, it was possible to determine, first, whether the histological development bore any relation to the establishment of the walking faculty, and secondly, what particular changes took place in the individual elements of the cortex, and where this chiefly was effected; what the new elements which might have appeared, what the relations which might be eventually established between the individual elements, and what was the ultimate destination of the external granular layer, which was so manifest at some stages and which at complete development is reduced to a thin sub-pial strip.

In this way the studies served two ends at once. First, to find in the new researches ample confirmation of the preceding ones as well as better to define minutiae, and second, to contribute something to the study of the histogenesis and structure of the cerebellar cortex.

Staining by saffranin, acid-fuchsin, etc., after fixation in Flemming's osmio-chrom-acetic mixture, in the new animals, only confirmed my first observations. According to the different periods at which the faculty of locomotion develops, we find the cells of Purkinje progressively modifying their form as previously described, and the molecular substance, represented at birth by a more or less delicate streak, gradually increasing, while on the other hand the external granular layer is becoming gradually reduced in thickness. I was specially delighted to re-confirm this in birds as the preceding researches had here been defective.

But now we come to more minute details.

External granular stratum. Vignals'* theory that the external granules were to be considered as migratory cells destined to disappear gradually is certainly not based on a careful histological examination. If there were no others, the fact alone that this stratum is found in various stages of development at birth, and is variously modified in the ultimate development of the cerebellum, the different disposition as we shall see, of superficial and deep parts, and the evolutionary phases which are observed in the deeper portion, would be sufficient to condemn it.

Ramon y Cajal,† on the contrary, by the nitrate of silver method distinguishes some superficial elements which stain but slightly, and which are not clearly differentiated, comporting themselves thus like ordinary epithelial elements (superficial epithelioid cells), provided with a small and thick process directed in different ways. The deeper strata then of the superficial granular layer would be composed of fusiform bipolar elements horizontally elongated and provided with long expansions, apparently nervous in character, directed parallel to the long axis of the cerebellar lamellae, cells which pass through various phases, and emigrating contemporaneously to the molecular substance would reach the deep layers of the cerebellar lamellae, and there assume the characters of true granules. Lugaro‡ gives an almost similar description, though he regards the superficial epithelioid elements as the point of departure of the successive evolutions, admitting that they may be transformed into horizontal bipolar elements.

Retzius§ makes no effort to conceal the great difficulty he has experienced in staining by nitrate of silver, the elements of this embryonic layer; he found only small cells

*Vignal Recherches sur le developement des elements des couches corticales du cervean et cervelet. *Arch de Physiol.* 1888.

†Ramon y Cajal. A propos des certains elements bywliaires du cervelet etc. (*Int. Monatsh.*, 1890.)—Id Les nouvelles idies sur la structure du syst. nerv. chez l'homme et chez les vertebres. 1894.

‡Lugaro. Ueber die Hystogenese der Korner Kleinhirnrinde. (*Anat Anzeig.* 1894).

§Retzius. Biologische Untersuchungen. Bd. iii. Stockholm 1892.

provided with polygonal dentations, with short and thick processes, and often flattened as if by mutual compression.

By the employment of the chromate of silver coloration, we found in the chicken only a thin line corresponding to the small number of granules still remaining. There were also observed the radial fibres of the neuroglia cells arranged on a level or a little below the bodies of the cells of Purkinje, the terminal cones of which at the free surface of the cerebellum form the so-called *membrana anista* of Bergmann, some prolongations of the neuroglia cells of the molecular layer and some rounded elements analogous to those described by Retzius and Ramon y Cajal in the external stratum of nuclei.

In the cerebella of the other above mentioned new-born animals, in which the faculty of locomotion does not develop as soon as in the chick, and the embryonic layer in question therefore remains, this offers some remarkable features for consideration.

Already in the employment of the commoner methods of investigation, in sections made perpendicularly to the course of the cerebellar convolutions, it was observed that this stratum could be divided into two fairly well-marked zones.

The superior is composed of a series of nuclei generally rounded, pressed closely together, and regularly arranged.

Amongst these, and almost altogether in the lower part, are to be seen numerous karyokinetic figures which show very clearly when saffranin and gentian-violet are used according to Bizzozero's method: This fact was observed by Bellonci and Stefani* in the cerebella of doves at various stages of embryonic development.

Such karyokinetic forms are observed in various phases of their evolution.

In the inferior zone the nuclear elements are more separated from each other, in some parts are sparse, and have various forms and arrangements, often elongated and placed in a perpendicular direction, or parallel to the free

*Bellonci e Stefani. Contribuzione all'istogenesi della corteccia cerebellare. (*Memorie dell'Accademia di Ferrara*. 1886.)

surface of the cerebellum. They are somewhat larger than the preceding and stain better.

The distinction in the external granular layer of two parallel zones almost equal in thickness, made by using only the common methods is no new thing, having been already noted among others by Obersteiner; but the different morphological appearances deserve to be taken into consideration because, adding these data to others furnished by the method of black stain of Golgi, it is possible to obtain a better idea of the stratum in question.

In this stratum by Golgi's method we find clearly brought out some rounded elements of different diameters, provided generally with a short and thin process turned either upwards or downwards, and, especially in the more external part, directed toward each other. Of these, some represent the epithelioid cells of Cajal and Retzius, but the others must be of a different nature, representing only the large varicosities of the processes of the neuroglia cells, situated lower down, penetrating into the external granular zone and which, on account of the direction of the section, present themselves isolated or furnished with short peduncles. It is very difficult to distinguish between such varicosities and the epithelioid elements. But that such an interpretation may be true is demonstrated by the fact that in large varicosities, analogous to the preceding, there may be found sometimes along their length traces of similar processes and also even in the cell-body.

When it is not possible to demonstrate their origin from neuroglial elements (cells with radial expansions) we must regard these cells as segments of nerve fibres provided with those large swellings which form an embryonic characteristic, but their less sinuous course and great varicosity clearly demonstrate their nature.

Besides these we noticed in the same stratum, differently arranged in regard to the cerebellar convolutions, some cellular elements chiefly elongated in form and having several processes, two of which were constantly observed taking origin from opposite extremities of the cell; and still other elements which have a much greater development,

and a more distinctly cellular appearance than the preceding, and possess a more marked though somewhat scarce ramification of their processes. These latter are found at the limits of the molecular substance, having a regular cell-body and processes furnished with small spinosities. These processes deserve special mention owing to their arrangement which reminds one of the basket cells of Ramon and Kölliker. Along the short course of one of these we find dotted small isolated branches, generally deprived of their terminal expansions, and turned downward toward the cells of Purkinje, without however entering into any definite relation to these. Such elements correspond to the more superficial cells of the molecular substance, described by Ramon y Cajal, which still preserve their embryonic character, their descending prolongations not going to form terminal processes round the cells of Purkinje.

It does not seem to me that we err then, in considering that these represent only a more advanced stage of evolution of the elements first described as situated a little lower in the same stratum.

We cannot say whether there extend into these stratum nerve-fibres and processes of nerve cells from the underlying strata.

The results obtained by methods of nuclear staining and these new ones derived from the black reaction, complete and explain each other.

Besides the two zones there distinguished in the evolutionary forms of which we have spoken in the different appearances of the deeper zone, we have the superficial epithelioid elements, the large varicosities of neuroglia cell processes, especially in the more superficial part of the cortex, on the one hand, and on the other, the elements in process of evolution, which assume very distinct morphological aspects as we descend in the zone in question (boundary zone).

If observations with nuclear stains have led to the induction that the external granular stratum must be considered altogether as a simple germinative layer of the internal zone of the same layer, the better substantiated

experiments with chromate of silver enable us, on the other hand, to maintain that such a stratum is to be considered as only the deep part of the external zone; if thus we seem to leave in doubt the significance and destination of the inner zone of this layer, we can only maintain that it represents merely a stage of progress of those evolutionary changes which have taken place in the superimposed layer, by means of which such new elements are carried into molecular substance.

I certainly do not wish to give to my observations a too exclusive interpretation. Cajal's* investigations demand consideration, and he regards the horizontal, fusiform, bipolar elements found in the deep part of the superficial layer as being only a primitive form of the internal granules. They give origin by a process of unipolarization to the so-called vertical bipolar elements with T-shaped nerve processes and join in a process of migration toward the deeper parts. Besides this we have Lugaro's† theory, differing from Cajal's in that he considers the epithelioid elements as the primary form. With all this, however, it appears to me we must take into consideration the fact that some bipolar horizontal cells are found in the superficial part of the cortex together with other elements of quite different origin, but morphologically similar to them; and that therefore they may represent, at least in part, an initial stage of development of those cells found more deeply situated, toward the boundary zone.

In a more advanced stage of development the external granular layer is found to be markedly diminished, so that by the time the animal can maintain the upright position and walk it is reduced to a mere sub-pial strip.

Molecular Substance. The molecular substance in the newly-hatched chicken is found to be completely developed. The cells of Purkinje have a globular form, are provided with widely expansile protoplasmic processes and reach the inner limits of the small external granular layer. They are not as they have generally been described in the newly-

*Ramon y Cajal *Les nouvelles idées*, etc.

†Lugaro, *loco citato*.

born animals, incompletely developed (Gehuchten, Kölliker and others) but have reached their normal development. The cell-body is not flattened, nor are the protoplasmic processes serrated and provided with those large spines which are found in the embryonic cerebellum, but are very expansile and exhibit only a delicate dentation which is not rarely found in the adult organ. The rest of the molecular substance, resembling the cells, exhibits also the adult type. Very remarkable also are the basket-cells with their fine terminal tassels round the large motor cells.

If now we turn to the other birds, the sparrow and starling, which stand and walk in above fifteen days, we find a different appearance.

Besides the peculiarities noted in the external granular layer, we find the following appearances in the molecular substance; this is represented at birth by a narrow strip where it is rare to find the nerve cells peculiar to this stratum, unless we again enumerate here the elements previously described in the deep part of the external granular layer, which gradually come to form part of the layer in question. There is quite evident here a delicate fibrillar layer formed by prolongations from the cells of the internal layer, from the cylinders of the cells of Purkinje and those of the neuroglial elements. The bodies of the cells of Purkinje are rough and above each is a tuft of short and thick protoplasmic processes, covered with large spines, which never surpass the inferior limits of the superficial granular zone.

The same appearances were found in the new-born cats, rats and rabbits.

In this regard we found very interesting also, from a general point of view, the connections of the nerve elements, a much debated question of to-day, the study of the nerve fibres of the molecular substance in the cerebellum of a new-born cat.

According to the best authorities and to Ramon's most recent researches the plexus composed of nerve fibrils terminating by free extremities in the molecular substance above the cells of Purkinje, forms in the new-born the so-

called pericellular nests round the bodies of these cells, and hence must be considered only as a stage of development of these. In other words the pericellular nests developing and pushing upward give origin to the plexus. In this way the nerve basket-network round the cells of Purkinje would be formed from the descending prolongations of the small cells of the molecular layer and not from the so-called pericellular nests.

I have observed in the new-born cat the contemporaneous existence of the plexus and the pericellular nests.

These last are formed from the complex intertwining of various terminal nerve fibres which are massed round the cells of Purkinje giving rise to a most intricate network. This result is very evident since the terminal processes of the small cells of the molecular substance have at this time not yet descended to form the baskets round the above-named cells.

The contemporaneous existence of the plexus and the pericellular nests would lead us then to admit, without positively denying that the latter may become transformed into the former, that they yet may exist independently of each other.

It is perhaps the complexity of structure which takes place in the process of development which renders the examination of these pericellular terminations a difficult one, while in the early periods the differentiation is more easy.

The importance of this fact will be seen when we consider the following, viz., that in this way there would arrive at the surfaces of Purkinje's cells not only nerve currents from the basket-network so often mentioned, but also and with equal intensity from the pericellular terminations coming directly from the medullary fibres.

But, returning to study the development of the cerebellum from a physiological point of view, we find that in these animals we can watch the progressive modification and completion of the structure of the molecular substance this varying in period of time as varies the epoch at which locomotor activity manifests itself.

These modifications consist in the rich development of

the protoplasmic processes of the large motor cells, which gradually extend themselves, multiplying and reaching to the periphery of the organ.

Internal granular stratum. In the cerebellum of the new-born chick there are especially manifest both the different ganglionic elements and the complicated fibrillary plexus which are observed in the adult organ. The large cells of Golgi especially, do not show differences of any sort; they are for the most part polyhedral, or vertically elongated, possess an extensively ramifying nerve process, rich protoplasmic arborization and do not appear larger than a corresponding adult cell as has been observed generally in the cerebellum of new-born animals (Ramon y Cajal). The small cells of this stratum have a terminal varicose arborization and not a simple thickening; besides there arise above their T-shaped nerve processes which branch horizontally and form largely the fibrillar stratum seen in the molecular substance; they also have their definitive form and disposition.

The nerve fibres which end in this stratum (*fibras musgosas*) are provided with terminal tufts by means of which according to Ramon and Kölliker, they would be brought into relation with the granules, but according to Lugaro are more probably thus brought into connection with the large cells of this same layer. All these fibres together with those which come from the medullary fasciculi, possess only in a limited degree that varicosity or those nodes which generally are very evident in the cerebellum of new-born animals; and in my idea the complete absence of such embryonic characteristics in a newly-born animal, is very remarkable when it is considered that they are found in other animals for some time after birth.

If, on the other hand, we observe the cerebella of the sparrow and starling at the time of birth we find these embryonic characteristics existing and these gradually disappear. We note as especially embryonic characteristics the varicosity of the nerve fibres, the incomplete formation of the terminal tufts of the *fibras musgosas*, and those of the short protoplasmic branches of the granules. We should say

that this is the part of the cortex which is most developed.

Also in comparing preparations of cerebella treated with nuclear stains, and in various stages of development, I have observed that the internal granular layer undergoes much less important changes in its thickness than are undergone by the molecular substance and external granular layer. I however would not abide strictly by the opinion that the number of the superficial granules diminishes exactly in proportion as the deep ones increase, and also in this connection, it seems to me that we must guard against assigning a too exclusive signification to the horizontal bipolar elements mentioned above.

In the mammifera this stratum also presents the same characteristics of immaturity.

Gradually as the walking period approaches, all these various strata become modified and attain their complete development at the time when that epoch is reached.

We may thus formulate our deductions from these observations that in many other mammals (rat, rabbit and cat) as well as in the human infant and dog, the cerebellar cortex possesses at birth many embryonic characters which are gradually lost in such a way that the organ reaches its definite form when the upright attitude is assumed and walking begins; in birds, which walk immediately after birth, the cortex is already in possession of its ultimate form, while in others such development is attained at a period coincident with that at which such attitude manifests itself.

From these conclusions there issues a corollary, which is not, it appears to me, destitute of importance in the study of cellular, and especially of comparative morphology. That is to say, that in order to best appreciate the differences which are known to exist between the cerebella of different animals, and which were largely illustrated by Falcone* we must never forget that the evolutions of the constituent elements are accomplished more or less rapidly, and that therefore, independently of the various organizations, there may exist accidental differences arising from the varying

*Falcone. *La corteccia del cervelletto*. Naples 1893.

periods (though all early) at which the animals were under observation.

In summing up we would observe that the modes of development of the individual elements are very complex:

1. The whole of the external granular stratum cannot be regarded as an embryonic stage of the molecular substance; we must exclude those elements which are found in the superficial zone.

It is the deeper zone that we are able to demonstrate the elements which must be considered as phases of evolution of those found in the molecular substance of the adult. It is probable that the great increase in the molecular substance is attained by the above-mentioned superficial layer, which has no functional destination, undergoing a process of slow atrophy.

2. The elements which develop with the greatest regularity as the animal gradually nears the period of walking are the cells of Purkinje, and those which develop in the deep part of the external granular zone and ultimately go to form part of the molecular substance; the cells of Purkinje then have the significance of motor cells and the latter either owing to their processes establish intimate relation with these or, sometimes, according to some authors, present a system of association between the different gangliar elements. To these we must add the plexus which follows *pari passu* the rich development of the protoplasmic branches of the large motor cells, a plexus which, without denying that it may be regarded as having been evolved from the intercellular nests, has also been seen existing independently of them.

3. The internal granular stratum, whether or not the animal at birth has been gifted with the faculty of standing and walking, shows a state of advanced development.

4. The relations which it is possible to see become most clearly established as the animal gradually reaches the period of walking, are those which take place between the processes of the cells of Purkinje and ramifying plexus, on the one hand, and the descending processes of the basket cells and the bodies of the cells of Purkinje, on the other.

The minute examination of the separate layers of the cerebellar cortex has led us to discover progressive modifications of an interesting kind.

New elements are formed, existing elements are modified and perfected, new relations are established while the locomotor activity is gradually showing itself and becoming more complete.

From the point of view of the functionality of the organ, this coincidence is surely not void of interest.

SCRIVENER'S PALSY NOT SOLELY PEN FATIGUE.

By C. H. HUGHES, M. D.

Honorary Fellow of the Chicago Academy of Medicine, and of the British Medico-Psychological Society, Etc., Etc., and Dean of the Faculty and Professor of Neurology, etc., of Barnes Medical College, St. Louis.

FROM an intimate familiarity with a large number of cases of writer's cramp or, better, writer's palsy, and other forms of the so-called occupation neuroses, I have long been of the opinion that the occupation is not the sole cause, but simply the determining, and to a limited extent only, the predisposing cause of the special expression of those neuroses which we call by the several names of Scrivener's palsy, musician's paralysis, chorister's cramp, engraver's palsy, etc., etc., etc.

The usual sedantary, excitable, irregular and excessive nerve-strain life of the individual, blended often with associated brain and nerve exhausting dissipations, together with inherent neuropathic predisposition, being the essential conditions of the development of the neural instability and exhaustion neuratrophia, through which it is possible to have an occupation neurosis by excessive or even moderate use of a special group of muscles in the represented daily routine of a certain vocation.

The proof that local over strain is not the sole factor, is found in the fact that many cases of occupation neuroses are not the result of excessive over-work; unless we use the term as applied to the particular individual as excessive, which may be, and often is, exceedingly light at the time of the break down, such as would show unfavorable on the

average worker in the same field, and sometimes the local palsy appears after the individual from general debility has quit work for a time and again resumed his occupation for awhile only to discover his inability to use with former dexterity the instrument of his occupation.

The following record is a case somewhat in point:

The gentleman did not know he had this affliction to such an extent till making the effort illustrated below in my office. He is not and has never been a professional book-keeper or accountant. His vocation has been to sell goods in an exclusive cash store in a small interior city. He has been all his life at this occupation. He is married, is temperate and moderately regular in his habits. His tendon reflexes and physical functions generally are quite normal except that he has nervous dyspepsia and does not sleep as much as he ought. He has no intention tremor or no involuntary tremor of any kind. No eye defects; no lightning pains; no pupillary derangement; nothing suggestive of either posterior spinal or *en plaque* sclerosis. When he writes he supports his wrist and makes one letter at a time. He is naturally somewhat ambidextrous, though preferring his right hand, and both hands give the same expression to his hand writing. This is how he writes:

Many Men of Many Minds
 Many Men of Many Minds
 J. H. H.

Many Men of Many Minds
 J. H. H.

This gentleman has some sources of private worry; has been anxious to make more money than he has acquired; has kept steadily to an in-door occupation and become so

neurasthenic that the muscles in writing do not respond well even to a moderate demand, but display those irregular explosions of nerve force at the regular behest of the will which we are accustomed to speak of, when so displayed through the fingers used in writing, as Scrivener's palsy or writer's cramp.

In a large neurological experience I have encountered so many such cases where the local strain was not commensurate with the palsy, especially among choristers and pianists, and these facts, I think, justify this record.

The above is this patient's best writing.

*ARE AMERICANS DEGENERATES?

A Critique on Nordau's Recent Change of View.

By JAS. G. KIERNAN, M. D., Chicago.

Fellow of the Chicago Academy of Medicine; Foreign Associate Member French Medico-Psychological Association; Professor of Forensic Psychiatry, Kent College of Law; Professor of Mental Diseases, Milwaukee Medical College.

ANALYZING Walt Whitman, Nordau[†] remarked, some years ago, that, "Whitman is a sycophant of the corrupt American vote-buying, official-bribing, power-abusing, dollar-democracy and a cringer to the most arrogant Yankee conceit." According to a recent interview by an American newspaper syndicate, Nordau[‡] does not now believe Americans to be degenerates. He asks: "Why should Americans degenerate? They have a new country, new opportunities, a boundless future, a restless and resistless activity; their eyes are fixed upward, their impulses are toward better and higher things, their ambition is healthier. How can Americans be degenerates?" He still stands by all he wrote in "Degeneration," but did not "mean to apply it to America." From cover to cover he has not said a word about America. He has not had the happiness to visit America and does not wish to evolve things out of his inner consciousness but from what he has learned from Americans and from what he has seen, Nordau does not think that degenerate is a word to

*Read before the Chicago Academy of Medicine.

† Degeneration, American Edition, p. 231.

‡ *Chicago Tribune*, Aug. 23, 1896. Press Publishing Co.

apply to them. "Degeneration has reference to Europe as distinct from America." The sweeping generalization of Nordau's criticism on Walt Whitman must therefore be understood in a Pickwickian sense only. Otherwise the assertion that "Degeneration from cover to cover does not contain a word about America" becomes palpably mendacious. Nordau has evidently been studying American literature, because of the great sale his vapid pot-boilers* had in the United States from the boom resultant on "Degeneration."

Anent Howells (Nordau's most severe yet most scientifically illogical critic), Nordau remarks, in a most tolerant spirit:

If I should do myself justice, considering the manner in which Howells has treated me, I should say something very severe about him. But I will not do that, I will rather speak what good I can of him. Unfortunately for Mr. Howells, when he began to write, Zola was a dominating power in the world of fiction and Howells followed his lead too closely and tied himself down to the theories of the naturalistic school. Mr. Howells would have done better if he had not followed that formula. Let him forget the theories he has adopted and give vent to his impulses as an artist and Howells is good. It is an excellent point in him that he notices great things and good things. He is of a serious mind and his readers can always follow him with the certainty that he will lead them upward. It is a bad point that he believes in a formula.

America has not produced anything better than Bret Harte. He is a Columbus. He discovered a great world of fiction. But Bret Harte has had the great advantage of telling new things, while telling them as well as such things have ever been told. He invented his own formula. He said to himself: I have the gift of telling a good story. Now how shall I best apply that gift? Shall I apply it to old things and familiar things? No, I shall seek something new. I shall apply my gift to telling the story of men placed amid absolutely new surroundings and subjected to entirely new influences and experiences. And so Bret Harte discovered the California of fiction. He was the first discoverer. The other story-tellers of to-day have simply followed him. The fact can be established by facts and

* *The Comedy of Sentiment and the Right to Love.*

dates. Bret Harte has set the fashion for the world of fiction. Every English novelist who has been borne to great success in recent years has consciously or unconsciously been an imitator and follower of Bret Harte.

There has lately been a great stir in America over Rudyard Kipling. But he has simply applied Bret Harteism to the British colonies in India. He has followed the lead of your Columbus.

It was Bret Harte who opened up the new world. It was he who showed the way to discover new countries for fiction. That is his formula and all the others are consciously or unconsciously followers and imitators. America exercises a very great influence upon modern fiction "through Bret Harte's formula." Look how they all fall in line. Take Zangwill's "Children of the Ghetto," which is a fine story, what is it but Bret Harteism applied to a strange people, to a new land of gold diggers in fiction. Take Hall Caine with his Manxman, take Hardy with his Essex people, take Haggard, take Ian Maclaren, take Stevenson, all followers of the American leader. Remember it was your countryman who originated the formula, and discovered new worlds of fiction. I do not know how far the fact is recognized in America, but if Americans do not recognize this and not credit Bret Harte with it, then they are not just to him.

It was given to America to furnish the new formula. Realism, naturalism, all these things are exploded but Bret Harteism rules. It is a kind of chemistry applied to the soul. Put such men, as we know, out of their familiar surroundings and social conditions, put them under new conditions, mix them up with fresh influences, test them with previously untried experiences for fiction which is now the ruling formula and see the result.

This has not been done before. Fenimore Cooper discovered his new world but it was not this world of Bret Harte. Cooper's was the world of the red man, the Indian, and he made of it what he liked. The reader had no test to apply to it but had to accept Cooper's red man as Cooper presented him. To paraphrase the popular expression, important if true, I may say of this kind of fiction, that it is interesting if true. In such a case as Cooper's, if, in the course of a few years, somebody discovers that the red man is not such a person as the novelist has depicted him, then the reader becomes ashamed of having been misled and says to himself: This is all an imaginary creation, this is no human character at all that I have been reading about. But Bret Harte's formula is to place men

and women whom we know and can measure amid strange and unfamiliar surroundings and influences and then we can say of their actions as he depicts them, I know this to be true, I know that this man or this woman would have done just this thing in such circumstances. And Bret Harte stands that test.

In Gabriel Conroy he tried another lode and was not successful. But I prefer not to speak of that, not to think of that. I measure him by his best work which is the just way to do. A rope is only as strong as its weakest point. But a poet, an artist is as strong as his strongest point. We shall see the same thing repeated with regard to all the English colonies as they are opened up. In each of them the formula will be applied and a new world will be discovered for fiction in the manner which Bret Harte has pointed out. This applies to continental European writers as well in certain cases and to a modified extent.

Nordau has suddenly discovered that there is more to the United States than "Yankee conceit and dollar democracy," but he has not delved deeply into American literature. The tendency, to which he refers, is in Brockden Browne* (the first American novelist) in Washington Irving†, in William Austin‡, in W. G. Simms§, in Hawthorne||, in Harriet Beecher Stowe¶ and others.

This principle, although Nordau fails to recognize it, is essentially that of Zola whose Rougon-Macquart series is an exemplification thereof; the scions of a degenerate family in that series are deliberately placed in different environments, Zola** explicitly avows this principle when he points out that:

The object of the experimental method in physiology and in medicine is to study phenomena in order to become their master. Claude Bernard in each page of his introduction comes back to this idea. He declares: All natural philosophy is summed up in this. To know the law which govern phenomena. The experimental problem reduces itself to this: To foresee and direct phenomena. Farther

* Arthur Mervin.

† Knickerbocker, Sketch Book.

‡ Netterstrom.

§ Mellichampe.

|| Scarlet Letter, BlitheJale Romance, Marble Faun, Ethan Brand.

¶ Old Town Folks, Pink and White Tyranny.

**The Experimental Novel.

on he gives an example: "It will not satisfy the experimental doctor, though it may the merely empirical one, to know that quinine cures fever; the essential thing is to know what fever is and to understand the mechanism by which quinine cures. All this is of the greatest importance to the experimental doctor for as soon as he knows it positively, the fact that quinine cures fever will no longer be an isolated and empirical fact. This fact will be connected then with the conditions which bind it to other phenomena and we shall be thus led to the knowledge of the laws of the organism and to the possibility of regulating their manifestations. A striking example can be quoted in the case of scabies. To day the cause of this disease is known and determined experimentally, the whole subject has become scientific and empiricism has disappeared. A cure is surely and without exception effected when you place yourself in the conditions known by experiment to produce this end. This then is the end, this is the purpose in physiology and in experimental medicine, to make one-self master of life in order to be able to direct it."

Let us suppose that science advances and that the conquest of the unknown is finally completed, the scientific age, which Claude Bernard saw in his dreams, will then be realized. When that time comes, the doctor will be the master of maladies, he will cure without fail, his influences upon the human body will conduce to the welfare and strength of the species. We shall enter upon a century in which man, grown more powerful, will make use of nature and will utilize its laws to produce upon the earth the greatest possible amount of justice and freedom. There is no nobler, higher or grander end. Here is our role as intelligent beings, to penetrate to the wherefore of things, to become superior to these things and to reduce them to a condition of subservient machinery. This dream of the physiologist and the experimental doctor is also that of the novelist who employs the experimental method in his study of man as a simple individual and as a social animal. Their object is ours, we also desire to master certain phenomena of an intellectual and personal order to be able to direct them. We are, in a word, experimental moralists, showing by experiment, in what way a passion acts in a certain social condition. The day in which we gain control of the mechanism of this passion, we can treat it and reduce it or at least make it as inoffensive as possible. And in this consists the practical utility and higher morality of our naturalistic works which experiment on man and which dissect piece by piece this human machinery in order to

set it going through the influence of the environment. When things have advanced further, when we are in possession of the different laws, it will only be necessary to work upon the individual and the surroundings, if we wish to find the best social condition. In this way we shall construct a practical sociology and our work will be a help to political and economical sciences. I do not know, I repeat, of a more noble work nor of a grander application. To be the master of good and evil, to regulate life, to regulate society, to solve in time all the problems of socialism, above all to give justice a solid foundation by solving through experiment, the question of criminality. Is not this being the most useful and the most moral workers in the human workshop?

Let us compare for an instant the work of the idealistic novelists to ours, and here this word idealistic refers to writers who cast aside observation and experiment and base their works on the supernatural and the irrational who admit in a word the power of mysterious forces outside of the determinism of the phenomena. Claude Bernard shall reply to this for me: "What distinguishes experimental reasoning from scholastic is the fecundity of the one and the sterility of the other. It is precisely the scholastic who believes he has absolute certitude who attains to no result. This is easily understood since, by his belief in an absolute principle, he puts himself outside of nature in which everything is relative. It is, on the contrary, the experimenter who is always in doubt, who does not think he possesses absolute certainty about any thing, who succeeds in mastering the phenomena which surround him and is increasing his power over nature." By and by I shall return to this question of the ideal which is in truth but the question of indeterminism. Claude Bernard says truly: "The intellectual conquest of man consists in diminishing and driving back indeterminism and so gradually by the aid of the experimental method gaining ground for determinism." We experimental novelists have the same task, our work is to go from the known to the unknown, to make ourselves masters of nature; while the idealistic novelist deliberately remains in the unknown through all sorts of religious and philosophical prejudices, under the astounding pretense that the unknown is nobler and more beautiful than the known. If our work be often cruel, if our terrible picture needed justification, I should find indeed, with Claude Bernard this argument conclusive: "You will never reach really fruitful and luminous generalizations on the phenomena of life until you have experimented yourself and stirred up in the hos-

pital, the amphitheater and the laboratory the fetid or palpitating sources of life. If it were necessary for me to give a comparison which would explain my sentiments on the science of life, I should say that it is a superb salon flooded with light which you can only reach by passing through a long nauseating kitchen."

This principle of Zola is Nordau's "kind of chemistry applied to the soul," Nordau's eulogy of Bret Harte is hence most emphatic praise of the method Zola borrowed from the older English Novelists and Thackeray pined after. "La Terre," for example, seems a replica of "Arthur Mervin" albeit one depicts the French countrymen of to-day and the other the Pennsylvania rural of the last century.

A psychologist of the evolutionary school (which Nordau claims to be) could not but recognize this principle and its source were he acquainted with literature other than as that preeminent sciolist the sensation-monger. Nordau's seemingly peculiar omission of Hawthorne has a ready explanation. Lombroso (despite Hawthorne's Italian and French renown) was not aware of his existence. Even Macaulay shared this defect. In his diary Oct. 4, 1852, the latter remarked:

"I finished 'Uncle Tom's Cabin,' a powerful and disagreeable book, too dark and Spagnoletto-like for my taste when considered as a work of art. But on the whole it is the most valuable addition that America has made to English literature".

This great critic thus wrote a year and a half after the "House of the Seven Gables" and more than two years and a half after the "Scarlet Letter" which are as superior to "Uncle Tom's Cabin" as that is to "The Dairyman's Daughter". As a production of art the Scarlet Letter without superior in English. It is equaled only by two of Shakespeare's plays and as many of Scott's Novels. As Macaulay read everything and had a special interest in and fondness for novels, it does not seem improbable but that he read both the works of Hawthorne named. Macaulay however had a weakness for women authors and this, together with the anti-slavery motif of "Uncle Tom's Cabin" (to which he was peculiarly sympathetic), undoubtedly swayed him

in favor of that work. Hawthorne moreover did not become acquainted with Macaulay though he resided in England some years. He saw him at breakfast given by Mr. Milnes (now Lord Houghton) in the summer of 1856 whereof Hawthorne remarks:*

All through breakfast I had been more and more impressed by the aspect of one of the guests sitting near to Milnes. He was a man of large presence, a portly personage, gray haired but scarcely as yet aged and his face had a remarkable intelligence not vivid nor sparkling but conjoined with great quietude and it it gleamed or brightened at one time more than another, it was like the sheen over a broad surface of sea. There was a somewhat careless self possession, large and broad enough to be called dignity and the more I looked at him, the more I knew that he was a distinguished person and wondered who he was. He might have been a Minister of State, only there is not one of them who has any right to such a face and presence. At last I do not know how the conviction came, but I became aware that it was Macaulay and began to see some slight resemblance to his portraits. But I have never seen any that is not wretchedly unworthy of the original. As soon as I knew him, I began to listen to his conversation but he did not talk a great deal, contrary to his usual custom, for, I am told, he is apt to engross all the talk to himself. Probably he may have been restrained by the presence of Tickner and Palfrey who were among his auditors and interlocutors and as the conversation seemed to turn much on American subjects he could not well have assumed to talk them down. I am glad to have seen him, a face fit for a scholar, a man of the world, a cultivated intelligence.

Nordau's enthusiasm over Bret Harte has a very simple explanation; Harte was early taken up by a British literary clique (en rapport with the continental European set to which Nordau belongs) as a counterfoil to coeval English literatures. This English literary clique dominated by the spirit of Sydney Smith's sneer (Who reads an American Book?) long refused place to Hawthorne recognized to-day as the greatest master of English even by British Americanophobiacs. Hawthorne owed more to the New York literati than to the Boston literary clique whence these philistines drew their notion of American literature. One

*English Note Book.

fact however demonstrates the scrappy nature of the knowledge of American literature possessed by Lombroso and Nordau, the increasing interest of the French in Hawthorne during the last three decades. In 1860 Emile Montigue* in a critical yet appreciative article viewed Hawthorne as a "pessimistic novelist". Nearly three decades later, Paul Masson† more truly spoke of Hawthorne as an illustrious American humorist", the term humor being employed in its old proper sense of mirth shaded by pathos. Fielding, Richardson, Smollett, Stearne, Sir Walter Scott, Thackeray Carleton, Lever, Lover and Hawthorne as well as other English-speaking novelists displayed the experimental tendency ascribed to Bret Harte alone by Nordau. This tendency is a characteristic of that celto-teutonic race called the Anglo-Saxon, recognized even by Nordau‡ and Lombroso§ through their Taine|| bias. A race characteristic, its expression naturally resulted in British America,¶ the United States, India and Australia. As Carlyle** remarks: "It is the grim humor of our own Ben Jonson,†† rare old Ben, runs in the blood of us, for one catches tones of it under still another shape out of the American backwoods."

Nordau remarks in this interview that "Heredity is a vain word. Descent and origin mean nothing. You are absolutely what environment makes you. You belong to the nation and the people of which you share the emotions."

This is a decided contradiction of the doctrine enunciated in the chapter on diagnosis in "Degeneration" where stress is laid on heredity alone. He follows the example of Lombroso who has lately shown, in this particular, a tendency to the evolutionary rather than his previous cataclasmic view of genius. Acting on this principle, Nordau proceeds to

*Revue des Deux Mondes, 1860.

†Revue Bleue Nov. 16, 1889.

‡Degeneration p. 75.

§Man of Genius.

||English Literature.

¶In Nova Scotia Judge Halaliburton shows this tendency.

**Heroes and Hero Worship P 31.

††Every Man In His Humor.

judge Americans from the standpoint of their environment. He first accepts Byron's view that:

"Tall were they beyond the dwarfing city's pale abortions". . . .
 "Americans in the first generation are perhaps squat and spare in body; in the next generation the children tower above their parents; in the third generation the grandchildren have grown to giants. Every generation seems to add inches".

This is very important if true. Giantism, Nordau to the contrary notwithstanding, is often an expression of degeneracy. Giants in stature are rarely giants in intellect. Nordau's belief that the "Americans will eventually become a nation of the Sons of Anak—giants in stature and in intellect as well", must be regarded, in the light of the researches on acromegaly and allied states either as satire or blarney. Nordau states that "since until about 100 years ago there has been practically no mixture of blood in the United States. It was all old English stock or at least Teutonic. But within the last century there have come streams of modern German and French Slavonic and Scandinavian blood."

Were the first assertion true it must be admitted that Americans are degenerates since they have departed widely from the typical Teutonic type. The assertion is however purely an expression of that grandiloquent teutonic cant that tests race by tongue, a test which, as Keane* forcibly illustrates by the following table, is tremendously fallacious.

| PEOPLES | ETHNICAL GROUP | LINGUISTIC FAMILY. |
|------------------|---------------------------|--------------------|
| English | Kelto-Teutonic | Teutonic. |
| Scotch | Kelto-Teutonic | Teutonic. |
| Irish (west) | Siluro-Kelto-Teutonic | Keltic. |
| Welsh | " | " |
| French | Ibero-Kelto-Teutonic | Italic. |
| Spanish | " | " |
| Germans | Slavo-Kelto-Teutonic | Teutonic |
| Bohemians | Kelto-Teuto-Slavonic | Slavonic. |
| Russian (many) | Finno-Slavonic | " |
| Bulgarians | Ugro-Slavonic | " |
| Hungarians | Ugro-Teuto-Slavonic | Finnic |
| Prussians (east) | Letto-Teuto-Slavonic | Teutonic |
| Rumanians | Italo-Slavo-Illyric | Italic. |
| Italians | Liguro-Teuto-Kelto-Italic | Italic. |

*Ethnology.

Not merely are Aryan races in Europe mixed together but the blood of all has a Turanian dash. As De Foe recognized two centuries ago, these bloods were tremendously mingled in the British Isles. The North of Ireland (whence came an enormous emigration to the United States for two centuries ago and more) was a mixture of protestants from every race in Europe; Scotch covenanters, English puritans, French Huguenots, Palatinate Germans, Magyars, Spaniards, Italians and "Scandinavians". The Scotch-Irish are raceless a chaos, despite their teutonic tongue as the Scandinavians who founded the Icelandic republic and its literature.

As Darwin* states, "there is apparently much truth in the belief that the wonderful progress of the United States as well as the character of the people are the results of natural selection for the more energetic, restless and courageous men from all parts of Europe have emigrated during the last ten or twelve generations to that great country and have there succeeded best."

Or as Nordau puts it: "With boundless room for expansion, with new ideals, with the restless activity and push bred amid such conditions, there cannot be degeneration. The race must become better. Americans grow taller and stronger with each succeeding generation and where is the limit to be fixed. It is all a matter of food and surroundings."

Other and greater reasons exist which Nordau should, as a logician, consider. As I pointed out to the Chicago Academy of Medicine a year ago,† the United States attracted, not merely the class upon whom Darwin so glowingly dilates, but that from their colonization the defective classes poured into the United States. Even the Puritan settlements brought sturdy beggars, criminals and other defectives from the crowd of offenders sent as servants to "his majesty's plantations". Large number of criminals were found not guilty if they left the State for New England. The stir of the west attracted hysterics, paranoiacs and other defectives as light-house lanterns do birds.

*Descent of Man.

†*Alienist and Neurologist*, October, 1895.

The fact that these defectives have been assimilated and ameliorated proves that Americans are not degenerating. Nordau correctly assumes that American progress is all a matter of food and surroundings. Hitherto, as Macaulay pointed out in his criticism on Mill:†

The United States have been a country where the necessaries of life are cheap and the wages of labor high, where a man who has no capital but his legs and arms may expect to become rich by industry and frugality. It is not very decidedly even for the immediate advantage of the poor to plunder the rich; and the punishment of doing so, would very speedily follow the offence. But in countries in which the great majority live from hand to mouth and in which vast masses of wealth have been accumulated by a comparatively small number, the case is widely different. Immediate want is at particular seasons a craving, imperious, irresistible. In our own time it has steeled men to face the gallows and urged them on the point of the bayonet. And if these men had at their command that gallows and those bayonets which now scarcely restrain them, what is to be expected? Nor is the state of things one which can exist only under a bad government. If there be the least truth in the doctrines of the school to which Mr. Mill belongs the increase of population will necessarily produce it everywhere. The increase of population is accelerated by good and cheap government. Therefore the better the government, the greater is the inequality of condition, and the greater the inequality of conditions, the stronger the motives which impel the populace to spoilation. As for America we appeal to the twentieth century.

It is scarcely necessary to discuss the effect which general spoilation of the rich would produce. It may indeed happen that where a legal and political system full of abuses is inseparably bound up with the institution of property, a nation may gain by a single convulsion in which both perish together. The price is fearful. But, if when the shock is over, a new order of things should arise under which property may enjoy security, the industry of individuals will soon repair the devastation."

It is a fertile source of error however to assume that in an English-speaking nation, political vehemence means revolution. The conditions described by Macaulay now exist rather than the optimistic conditions of Nordau. Yet

†Essays and Reviews Vol. I p 412.

they are much the same as sixty years ago when the country was threatened by the financial dominance of the United States Bank, whose boom of western real estate produced the panic of 1837, widespread distress and ultimate repudiation of state debt by a few states. The public morale is now so much higher that no such repudiation is possible. Property is not now regarded as theft even by the most seemingly revolutionary of the two great parties which wishes only to restore property rights destroyed, it claims, by legislation through which the people have created those Frankensteins, the corporations which are now devouring their creator. Such views indicate that peaceful change is most probable and that even should revolution occur, it must in the United States (as in other English speaking countries) assume, as in 1776 and 1861, a preservative type rather than the destructive one feared by Macaulay.

Nordau has found that literature exists among the "dollar democracy" later he will discover its science. His latest review lends much vraiseemblance to the claim of Howells that:

"At first Nordau seems to be simply a bad-tempered, ill-mannered man, in the presence of intellectual conditions which he dislikes, with no other way of venting his hate but to bully and abuse everybody about. The note of insincerity however is so insistent that you end by feeling that even his bluster is put on and that he is only a clever quack advertising himself."

SOCIOLOGY AND THE REALISTIC NOVEL.

By INGEBORG TAUSTROM, M.A., M.D., Chicago.

THE spirit of the time changes and literature with it. How many years since the idealistic phases of life found their expression in literature. The real life was forgotten, and realism was considered vulgar. The subjects considered in the literature of to-day are problems not met with in literature of the past. And this has been understood by many authors.

The demand for truth and realism has created authors to supply it. This effort is a true child of our time. It stands in a close and organic relation to many other characteristics of this century. In almost every branch of art, science and literature—in women's dress even—we find the common trend to be a striving to resemble nature. The main strivings in the larger communities always determine movement in the smaller ones. A new direction has long been shown in the literature of the larger European nations, especially in France; active there before it was perfectly understood in the northern countries of Europe. Between this New School and the preceding one, there does not exist such a great difference as between the new-romantic and the so-called older school in the beginning of this century. The last authors belonging to the new-romantic school in France were realists. Even in Scandinavia, realism is more the result of influence from other countries, for example, France, than fundamentally a new school. As we know, most of the realistic authors in Europe of our day are

Pessimists. While Pessimism, by that name, is comparatively modern,—Pessimism itself is as old as the human consciousness. The German Pluemacher, in his work on "Pessimism in the Past and Future", devotes the first part of the book to a consideration of the historical development of Pessimism. He has a chapter on "Pessimism in Ancient Times," a chapter on "Pessimism in Christianity;" a chapter on "Pessimism in Science;" a chapter on "World-pain and the Poetry of Pessimism"; a chapter on "Philosophical Pessimism." What can be more pessimistic than the tone of Ecclesiastes in our own Bible? Take, for instance, the first three verses of Chapter Four;

"So I returned, and considered all the oppressions that are done under the sun; and behold the tears of such as were oppressed, and they had no comforter; and on the side of their oppressors there was power; but they had no comforter.

"Wherefore I praised the dead which are already dead more than the living which are yet alive.

"Yea, better is he than both they, which hath not yet been, who hath not seen the evil work that is done under the sun."

The difference between modern Pessimism and former Pessimism, is simply that the latter was the unsystematized instinctive cry of the human consciousness affirming that Pain in excess of Pleasure is the common lot of man; while modern Pessimism has its systematic exponents amongst the builders of systems of thought.

Schopenhauer, with his piquant style and trenchant wit, has given permanent voice and systematic form to that pessimistic feeling which, before him, had manifested itself only in detached cries or in a general undertone of sadness. Edouard von Hartmann, now the most prominent of living German metaphysicians, claims that his own system is a synthesis of the pessimistic Schopenhauer and the optimistic Hegel. Hartmann is best known as a pessimist. While he is willing to concede that this may be the best possible of worlds, yet he stoutly affirms that no world at all would be better than the best. The universal Gøthe, while usually

classed with optimists, yet often shows himself deeply tinctured with pessimistic feeling. The difference between Göthe and the genuine "World-pain" poets lies in the fact that his sadness, as judged by his life, is a hopeful pain, while theirs is a despairing pain. Göthe, like all great poets, owes his own essential greatness to the wealth of shade of color, the deep inward penetration with which he paints unhappiness and the shadow sides of life. These alone afford the material to those poems which afford the most sublime and intensive enjoyment to the reader.

Established now in philosophy, Pessimism in one or other of its forms, has found disciples in many of the writers of our day. The Danish author Jacobsen is the most pessimistic writer in a time when almost everything appears dark. He is the only writer in all Scandinavia who is a representative of the analytical method. One misses in his works the individuality that is characteristic of many of the other writers of these countries. Jacobsen's books are undoubtedly the most pessimistic works published.

In one of them he tells the story of a young man. It is the story of undeveloped genius. The hero of this work is the fruit of two different natures. Heredity thus gives him two dispositions even antagonistic. In his childhood, his mother's influence was the greater, but later his father's spirit gets the upperhand. His aim was entirely too high. He tried to be one of those who make their own heaven and their own hell. He was wont to say that his soul soared high; it was the merit of his mother. Most of the time he but vegetated; only at moments lived. He was not true to himself. He invoked the aid of heaven without believing in heaven. He did not believe in anything, and finally lost all faith in himself. The writer strives to find what is needful to live a true life.

In another work, the same writer describes how a finely educated woman in high position gradually sinks into misery and vice. She has not the strength to resist temptation from without and within. Life has given her culture but not character. She feels responsibility neither for her own actions nor for her position and honor of her family. She

is introduced to us as a lady at Court; and we leave her as a poor gardener's mistress in a miserable cabin.

The problems treated of in modern literature are, as a rule, questions of the day. For instance, the relations between the sexes; competition between men and women; if marriage without love, or marriage after love has ceased, is a true marriage; under what circumstances divorce is to be allowed; the relation between capital and labor; co-education, and its moral influence on home and society; how society can be reformed; how the gulf existing between upper and lower classes in Europe can be filled; Hypnotism as a remedy; equal standards in chastity for men and women; diseases; heredity.

The question of the economic, spiritual and moral independence of women has never been more eagerly discussed than it is now. It forms the pictures of several of Ibsen's dramas treated in the most original and masterly way by this prominent Norwegian author. A critic and an idealist in one, he hates deceit, meanness and untruth, and denounces it vigorously. While discussing modern social problems, he must be counted among the realists. His idealism is felt in several of his dramas. "Nora" is by many considered as an attack on matrimony, though it rests on a high conception of marriage. His successive delineations of women show his increasing faith in her. Still it has been said of the characters of Ibsen that they are not personalities, but rather embodiments of moral and social problems never solved. But he does not say the final word; he leaves it to the future. A future when men do not bow their necks to worldly considerations. His influence is felt throughout Scandinavian literature.

Diseases have, as we know, a great influence on human life. No one can escape them. Compositions which reflect life must also treat of them. The reading of our young people in the beginning of this century was largely a reflection of the new-romantic school, in which the broken heart plays a great part. But we have very few instances of people dying from a broken heart. This possibly may happen to older people, but never to young deserted brides

and lovers. Göthe, in his time, was highly praised for his courage in breaking with tradition, when one of his heroines dies from consumption. *Maryat* and *Dickens* in their novels have treated of self combustion, or spontaneous combustion breaking out in the live body. The American humorists have also been interested in the question. Bret Harte personally studied the influence of alcohol on the human female in the gold-mines; while we have Zola, the leader of the naturalistic school in Europe, who has written a book for the very purpose of showing the effects of *intoxication*, taking his subject through the different stages of *delirium tremens* until death ensues.

The last scene of this work gives the impression that the author who has conscientiously noted every phase of the first stages of inebriation, shrinks from the consequences of the last ones—and cannot follow them up. Other European writers have also described the terrible effects of alcohol on the body.

In Denmark, the graphic sketches of H. Bang are studies from nature. He does not exaggerate, and science, as a rule, can endorse his illustrations. Even diseases of the nerves have played their part in realistic literature. Daudet, another leader of the natural school in France, in "L'evangeliste," and Björnsterne Bjørnsen in his drama "over Ene" show the influence of nervous exaltation. Daudet makes his heroine try to work out the salvation of her victim through belladonna and other poisons. But science does not recognize this way of producing physical nervousness.

In regard to Zola, it might be in order to say something about the *school* to which he belongs and about his *method*. The most eminent realistic authors of our times are naturalists; and they require that the novel as well as the drama be built on a foundation in complete harmony with the scientific character of our times. The originator of this movement, as we all know, is Balzac, the first French writer who, in his works, shows the influence of the good woman on society. Young girls without experience and fallen women had hitherto been heroines in French litera-

ture. Balzac was followed by Flaubert, known by his "Mme Bovary", an attack on young girls' education in convents and on marriages as they exist in France. In "La Vie", a renowned work, by E. Goncourt, he shows the consequences of young girls' ignorance of what life and matrimony require of them. Daudet in his "Sappho", dedicated to "My sons, when they are twenty years old," describes in an earnest and true way how a young man living in mingled love and lust, in close liaison with a woman of resplendent physical beauty, and of such checkered life and character as might be expected from one having been the mistress of criminals and of poets and artists, loses in the end, character and self-control to the degree, that, though finally meeting, loving and winning the love of a pure true girl, he feels in his innermost soul a permanent craving for vicious love; feels that the tie of marriage with a pure woman will not bind him; and shrinking from a dual life, with virtue and vice for co-ordinate poles, breaks with the girl he was to wed, and returns to his orgies with Sappho. He finds too late that vicious love meant for him the forging of a chain to bind forever. It is a truism that Science has, in our days, acquired a broad and solid foundation. It should be equally a truism that literature must, if it shall influence life, keep abreast of life,—abreast of its vital currents, with systematic knowledge of their trend. The first thing the scientist has to do, is to study nature and find out facts through experiments; see if his hypothesis can be proved a law. In making experiments with dead matter, the scholar can but study outward circumstances; but in experimenting with living matter, both the surroundings and hidden circumstances must be studied. And the hidden ones are much more difficult to deal with. But the laws that govern the motion of plants and animals are the very same that rule the realm of *physiology*. Hence the scientist having to apply all these laws to the different branches of psychology, finds these experiments to be the most complicated of all; for here the scholar is dealing not only with characters and passions, but with personal and social facts. Notwithstanding such

diversity of phenomena, he has to use the very same method to find the law which rule them. If Science has many difficulties to overcome in both fields, the physical and the chemical, how much greater obstacles shall she not find in psychical fields?

Zola's opinion is that a moral philosopher has not only to observe; he has even to make psychical experiments. It becomes very important then to distinguish the characteristics of man; and this has to be done by a very earnest examination of the laws of Heredity. If the moralist accepts the individual as given by nature, he still has to study, not only the surrounding circumstances, but also social facts that are intimately related to facts which are inherited. This procedure has been taken by Zola directly from medicine, which gradually has developed into an exact science through the efforts of the great physiologists, Claude Bernard at the head of them. Of him can be said that he has invented a new science; namely, *physiological pathology*. Pathology, deals not with the cause alone, but, rather with the prevention of diseases. The application made by Claude Bernard of pathology and medicine is made by Zola in dealing with spiritual phenomena. Even in the moral world, it is important not only to cure the evil but to check its growing influences. A moment ago it was said that the characteristics of man can be distinguished by the moralist only by a very earnest examination of the law of Heredity. Darwin's doctrine of the laws of Heredity are as well known in this country as in Europe. It is even known, I suppose, how he has been misunderstood by many writers who have made *Heredity* their principal subject. Science begins with investigation of laws. All that precedes has but one object, to prepare the way for this investigation. Unless we hoped that out of the mass of facts drawn from animal and human psychology, from pathology and history, some fixed and certain rule of practical application would be derived, these studies could hardly be regarded as other than barren pedantry. It is the privilege of the experimental method (so often charged with creeping on the ground; with being tied down to facts and restricted within narrow boundaries without a

horizon) to reveal to us what is universal; to exhibit to us laws in facts, and to demonstrate for us the seeming paradox that in the world, for the scientific mind, there are no facts but laws.

What has Science to say about *Heredity*?

Heredity is a biological law resulting from another law which transfers from generation to generation the attributes of physical and mental life. This law governs everything that is living, plants as well as animals, animals as well as man. There is not part of the human body subject to the laws of Heredity, and another part exempt from them. It has been said that man is a child of inheritance. The result of antecedent causes; that what he is, depends upon what his ancestors were. It has even been said that man is the creation of circumstances; that he is shaped by external surroundings. There is a truth in both these statements: and, when taken together, they give us what is known as the doctrine of Heredity and environment so much emphasized by the Herbert Spencer school of thought. It is true that children inherit physical and mental powers and tendencies from their parents. But man is more than a passion; receptivity, more than a clay to be shaped. Man is a conscious being. He has a large measure of self-determining power; and from this view, the doctrine of Heredity, instead of leading to the hopeless despair of fatalism, reveals the possibilities of a progress that would otherwise seem impossible.

Man is no longer bound by weaknesses entailed upon him by Heredity along faulty lines; he has the power to correct them. The doctrine of Heredity, instead of operating as a hindrance and discouragement to man, supplies the best, and as it would seem, the only conditions for the sure and permanent progress of the social order. By taking advantage of these laws, it is possible for individuals and society to advance by counteracting the evil and strengthening the good; and in this way, to set in motion continuous and cumulative processes of social reform. Were there not some such wise provision as this in the constitution of things, the work of each generation would die out with it, and there

could be no possibility of human development. What is the history of the world, the history of progress, but this? Has it not been a weary ascent through the ages; an ascent made possible only by the laws of nature and the laws of our own being, and all included in the laws of evolution? By the persistency of things as such, by their powers of reproduction and transmission thus carrying the seed of one generation over to the next—these, aided by the Darwinian law of the preservation of useful variations, are the instruments of the world's material improvement; whereby barbarism has been subdued and brought under cultivation, cities have been built, oceans navigated, and continents explored. It has been by taking hold of unchanging principles in music and art that we have beauty and song. It has been by seizing upon the eternal principles that a better civilization has been made possible, and, by the laws of persistency and inheritance, these great ideas have created their present and more fitting environments. Not by chance or accident has the social order advanced, but by reason, by method and obedience to existing laws. Man is thus a creation of culture, of capacities to be unfolded; and society is an organization related to an environment.

We may now see the double, reciprocal and dependent form of education by which the progress of the world is possible. It must be asserted and considered by the higher and corresponding forms of intuition. And thus are we brought face to face with the problem of the practical education of mankind.

What is education?

Education is not only instruction that comes from books and studies of art, science and literature; education is knowledge, experience of life, influence of a good and happy home. In short, it results from studying life and living life. For living life, man must learn to control himself. He cannot rise without guidance and control of the carnal will; his appetites and his passion will drag him down. He must rise by the power of reason and conscience. And this is true not only of the individual but of society. The lesson is that the only great work of this world is to

make noble men and women,—noble in body and noble in mind and heart. And this, too, not only by the help of Heredity, even in spite of Heredity; so that the world may grow from weakness and disease into health and strength; from poverty to plenty, from lowness to nobleness.

Literature has played a very great part in human development. The question of Heredity has been treated by many of the modern writers in Europe. No authors have put forth this question in a way so painfully strong as Zola and Ibsen.

Zola shows in a series of novels how the vices of avarice, drunkenness and lust increase and diminish, partly on account of the mingling of the higher with the lower and partly by the power of circumstance and education; as for instance, in his novel of "L'Assommoir." In his novel of "Nana," the fallen woman, he treats the subject in another way than does Dumas, who simply sympathizes with her. Zola, on the contrary, charges society with her unfortunate condition. In another novel, "Germinal," published a few years ago, he describes the hardships of the miners in France and Belgium. He shows how their children are born with dispositions to certain diseases, consumption, for instance. Its effects have already been felt. "La Terre" almost cost him his reputation as author and moralist by reason of its cynicism and lack of righteous indignation. All France showed displeasure, and even his followers objected to its tone. Happily Zola saved his name as author by the novel of "La Reve" recently translated into English. All phases of life described by Zola he has personally investigated. His person has always been pure and he has never taken notice of the attacks on his character, though the moral worth of his writings has been doubted. It seems to me that Zola has not been rightly understood in this country. Some time ago a female college had to close for the reason that the principal mentioned Zola's writings in lectures on literature. And in Canada, was quite recently made an *auto da' fé* of his books.

Ibsen has even treated of the question of Heredity in several of his dramas, but without indicating any remedy

for it. Bjornstjerne Bjornsen solves the question, to my mind, at least, in a satisfactory way. In his novel "Det Flager" he shows how serious defects are transmitted from generation to generation. Nothing is done to counteract them, and they increase, and become more and more pronounced. As a result of marriage between ill-mated parents, a child is born whose father was a dissolute and passionate fellow, continuing his irregular life even after marriage. During a quarrel with his wife, he beats her and ends by committing suicide. The widow was angry with her friends, because none had the heart and sense of responsibility to tell her before marriage of her husband's previous life, although they all knew about it. The mother tries to subdue the passions, which are manifested in her son. Still the boy has not only inherited the bad tendencies from his father, but also the good qualities of his mother. Early conscious of what he will have to contend with, coupled with the benefits of a good education, he is saved. The aim of the author is to show that "*Heredity although a condition, is not a destiny.*"

The death of Jacobsen's hero brings back to me the great Russian author Tolstoi and death as described by him. His hero also dies as he has lived. But he, as well as the author, believes in atonement and eternal life. In Anna Karanena the same writer shows as great a faith in woman's character when she is working for an aim and develops through a happy marriage. But A. K., who squandered her life in social pleasures and did not take up the duties of and ill-mated marriage, meets death, we might expect, as an outcome of such a life. Tolstoi, as Socrates and Rousseau before him, teaches that the royal road to health and happiness is in a life of simple habits, strict morality and outdoor activity.

Even Turgenieff, another great Russian author, shows his faith in woman. In one of his most valuable works, "Elena," T. foreshadows the condition of the Russian woman of the future. The heroine is strong-minded, patriotic, and her love is deep. For women of such strength and capacity for self sacrifice, Russia provides no fitting

mate. As Elena did, others may have to do, leave their native land, and among foreigners seek the happiness denied them. Elena leaves Russia, the happy wife of a noble-minded Bulgarian banished from his country. The two Russian writers recently named, portray very different types of women. Both feel deeply the darkness and gloom under which Russia is laboring. And both in Tolstoli's and Turgenieff's writings the hope of the future salvation for Russia, is centered in woman, not as she is, but as she is to be. There is no foundation for the thought that Tolstoi is a pessimist, for as we have before said, he is far from believing in annihilation, believing strongly and preaching the doctrine of development and immortality.

It must be acknowledged that in modern literature are many excellent works ennobling and strengthening the young. We must also recognize the love of truth and the efforts of the realists to *educate*. Most of them are of socialistic tendencies, seeking to win the sympathies and to awaken the feeling of responsibility on the part of the more fortunate for those less advantageously situated. They are struggling for the higher morality of which they feel our time to be in such sore need. Nothing can be said against the subjects chosen. The very atmosphere is full of them. But the principles at the foundation of many of the ideas brought out, to my mind, lead to false ideas of life, making it a burden, a punishment ending in suicide. Many of the realistic writers say that after death there is no existence except in succeeding generations. The body resolves itself into its component parts. A belief in the soul is either an idealistic fancy or a pious fanaticism. In short, their pictures of life are painted in too sombre colors. The cause of this may be that many of them have seen too little of the happy side of life. And the thought has come that realism is synonymous with pessimism. It may also be due to a deep sympathy with the weaknesses and wants of the present day and a strong feeling of opposition to everything delaying or thwarting a better future. He, who from such motives as this, is pessimist, is more worthy of our love and respect than he, who is pessimist because he himself

knows no suffering. Life presents no suffering alone, although, alas! there is enough of it. And we must not always reproach the realists for the eagerness with which they seize upon this fruitful thing. But if they give us too many gloomy pictures without a mingling of brighter ones, they are giving us a wrong phase of life.

This influence is unhealthy; for literature influences life as much as life does literature. A writer is not a realist merely because he takes his subjects from life, if he shows but the darkest and weakest sides and allows his characters weakly and passively to vegetate, blaming existing laws of nature and limitations of the will, and preaching the doctrine of annihilations of the whole. If this were the doctrine of realism, it would have no more value than the hyper-idealistic or pietistic teachings. The one extreme is as harmful as the other, paralyzing the power to act and lowering the moral tone. Against this mesalliance of realism every true friend of it must protest. Against realism itself, we may say that it is too willing in detecting evil, and not always ready to recognize what is pure and noble. Its atmosphere is often too tainted for healthy life and art to flourish therein. Its teaching may be regarded as a medicine so strongly charged with poison as to be used only with the greatest precaution, lest the disease prove more painful than before, or even fatal. It has been said that the realists lack fancy, are too logical, and that their analysis has killed their feeling. To this we cannot agree. If it were true, the writers of the present day were fit only for newspaper work and historical writing. It has even been said, and perhaps truly, that the works of the realistic school of modern literature are not the best reading for young people, particularly for young girls. Be that as it may, the first thing to be considered in determining the value of a literary production, is its artistic and moral value as a whole. Later we may determine whether, in detail, it be profitable reading for immature minds; for it is a fact that in many works the details are such, that, detached from the whole, they may produce effects never designed by the author, as, for instance, in several of Zola's

writings. As to Daudet's "Sappho," it may be a drug of the poisonous character above described,—seeming rather to rouse than to subdue the passions. Such reading can only be safely indulged in by those so strong in mind and character that their morals cannot be affected by such influences. To those who have fears in regard to familiarizing the young with the subjects treated of in modern literature, we would suggest that they show the same care in their choice of subjects for conversation in the home circle and social gatherings. "Anna Karanena" is more wholesome than gossip about divorces and ill-mated marriages. The reading of "Det Flager" is less harmful than half uttered and partially understood suggestions regarding physiological facts. The time is past when innocence sought protection from ignorance. Literature, as well as the spirit of the time, now seeks to give young womanhood the weapons she needs for her protection by teaching her what marriage and life *require* of her. That the realists of the present day are not all that they should be is proved by the fact that we have a realism which is neither true nor sound; not true because it misses the idealism that really exists in life and because it erects wrong phases of life (existing but fragmentarily) into typical phases of life; not healthy because it depresses rather than elevates us. Notwithstanding its errors let us believe that realism will carry the literary banner of the future, although the inscription thereon is not yet what it should be. With a truer inscription the goal will be sooner reached, for it predicts moral, literary and artistic progress.

THE SURFACE THERMOMETRY OF THE HEAD IN DISEASES OF THE BRAIN.*

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WHAT is the present value of surface thermometry as a diagnostic aid in diseases of the brain? Such is the question which I shall attempt to answer, on the basis of well known scientific facts, recorded experimental data, and some personal observations.

The very first step must be an inquiry into the thermogenic conditions of the normal brain and its encasement, together with the physico-chemical laws and conditions by which they are modified. The classical researches of Lombard, covering some 6,000 observations made with the most accurate thermo-electrical apparatus and scientific care showed an extreme range of from 94.8 F to 97.8 F or a variation of 2.7 F. This probably represents about the ordinary limits under normal conditions. Such extreme ranges as those found by Schiff must be set down to remarkable idiosyncrasies or occult morbid processes. This range, it will be observed, is no greater than that found in axillary and rectal temperatures, although observers differ greatly in regard to the latter. Thus Finlayson found a range in the general temperature of 3.6 F., while Paul Bert places

* Read before the Delaware District Medical Society, at Dunkirk, Ind., July, 1896.

the normal excursion 1.8 F. It would thus appear that the surface temperature of the head, with proper precautions, varies quite as little in health as that of the mouth or rectum.

The temperature of the air, as shown by Lombard has much to do with the surface temperature of the head. Of course it is frigeration that is mostly to be guarded against; and Lombard found that with the average temperature of the air ranging from 44.6 F. (7.01C) to 65. F. (18.34C), the surface temperature of the head varied from 93.5F. (34.19C) to 96.4 F (35.79C) a range considerably lower than found in warmer atmospheres. It is therefore, I think, advisable that the temperature of the room in which surface temperatures are clinically studied should be 80.F., or more; and should be free from drafts; and, it seems to me, the entire head should be enveloped in a somewhat impervious covering to prevent frigeration of areas of the scalp contiguous to the point of observation, which, owing to their free vascular connection would certainly influence the latter. The disc of the thermometer must be well protected from the air by a non-conducting pliable material, through holes in which the stem should project. Ample time should be given for perfect equalization of the temperature of the thermometer and scalp. The pressure of the thermometer upon the scalp should be quite firm, with a view of producing anemia of the latter, so that the thermometer will be influenced as little as possible by the blood in the scalp.

At the moment of reading, the pressure of the thermometer, if it is not self-registering, should be relaxed until the column of mercury ceases to fall. My own observations have been made with non-self-registering thermometers and while I have had no experience with the self-registering surface instrument I am of the opinion that the former kind is to be preferred, because of the fact that pressure would force the column of mercury up, and the self-registering index would remain up while the unbroken column would recede to the proper level. While this source of error is said to have been reduced to a minimum in Gray's modification of Seguin's thermometer, yet that it still exists

is indicated by the precautions constantly urged by observers that the pressure of the thermometer upon the scalp should be equal—a practical question of very difficult solution. The hair ought to be closely shaved or at least closely clipped. The electro-thermal apparatus is of course more delicate for scientific investigation, but I agree with Amidon that it is too delicate for ordinary clinical purposes. As clinicians we are not practically concerned with a variation of one thousandth of a degree, however interesting it may be in psycho-physiologic research.

Having given due attention to the technique, which is troublesome and laborious, but which the results are in large measure vitiated, what we really ascertain is the temperature of the skin at some selected spot, and its value hinges entirely upon the accuracy with which it indicates the relative (but not necessarily the absolute) temperature of the underlying portion of the brain. We have to deal with very complicated conditions. The brain under normal conditions notwithstanding its large mass and highly organized structure, does not appear to have a very high temperature. Davy long ago declared that thermometers registered lower when plunged deeply into the brain tissue through the foramen magnum of decapitated animals than when introduced into the rectum. His observations however preceded the era of scientific exactness and are therefore open to criticism; but Schiff plunged electro-thermic needles into the brain tissue through holes drilled into the skull of curarized and alcoholized living animals and obtained temperatures lower than those of the surface, which I have already quoted from Lombard, and which it will be remembered are much the average of axillary and rectal temperatures.

These are facts and should be kept in mind in estimating the value of absolute cerebral temperatures. But whatever may be the exact absolute temperature of living normal brain tissue there is a considerable amount of heat constantly generated, the surplusage of which in order to keep the brain at the normal temperature, must be removed in some manner. A definite proportion of it, impossible of exact determination, is carried away by the venous blood.

The remainder can only escape by conduction towards the surface. But it meets in its pathway, first in the pia-mater, then in the dura-mater and diploe, and finally in the remarkably vascular scalp, myriad networks, or almost walls, of circulating blood, which will absorb and carry away another modicum of this heat. In thermometric observation Schiff has attempted to get rid in a measure of the intervening scalp blood by squeezing it out by pressure between the skull and thermometer. The active vascular network of the diploe and meninges cannot, of course, be thus influenced. The limits of time forbid the further pursuit of these physical problems, except to remark that, after making due allowance for all these conditions, a certain indefinite quantity of heat passes directly to the surface, and distinctly influences the temperature of the overlying skin. The influence of warm water thrown within the brain membranes in raising the temperature of the skin in the cadaver has been experimentally demonstrated by Maragliano; the circulating blood of the living tissue can only diminish but cannot prevent its occurrence. It has been calculated upon purely physical grounds that if the surface of the brain is raised one degree, one half of that heat is lost in the blood between brain and skin and one-sixth in tissue resistance, thus producing a rise of one-third of one degree on the surface of the head.

We find therefore that what we have really registered with our surface thermometer on the scalp, is the absolute temperature of the skin, which is the resultant of all the chemico-vital processes occurring between it and the brain, and within the latter, minus the heat lost in transit; but that it is palpably modified by the heat of the brain, which modification is readily estimated by the surface thermometer.

It is probably very nearly superfluous to remark that local morbid processes in the cranial wall must be excluded as causes of surface temperature modifications before the latter can be assigned a definite value in the diagnosis of intra-cranial disease.

The functional processes of the brain must have a considerable influence upon the amount of heat generated, and

consequently upon the surface temperature of the head. This has been proven experimentally especially with reference to intellectual processes. Intense mental effort, sustained for an hour or more only produces, according to Lombard, a rise of from 1-15 to 1-20° F.,—too small to be of practically clinical interest although of high scientific value. Gray however found a much greater rise—as much as 2.6 F. Amidon obtained remarkable elevations of two degrees over the brain centres of certain groups of muscles by having these muscles thrown violently into action for some minutes; the experiment being undertaken to test the hypothesis that the functional activity of the centre would raise its temperature. His results were not sustained however by Paul Bert nor by Francois Franc; while Lombard found the average temperature lower rather than higher, though more frequently un-influenced. We therefore conclude at present that, while for other and various reasons a quiescent state should precede and accompany the clinical study, yet we need not fear the disturbing influences of the normal functional process of the brain in any event unless excessive and prolonged.

We have still to inquire in how far a local process, producing a rise of temperature on the surface of the brain at some particular point, will be indicated by a local rise in the temperature of the overlying scalp. Here again Lombard's extensive and careful investigations seem to reliably indicate the normal variation between the two sides, and different regions of the same side. I can not enter into details, but must say briefly that the normal surface temperature of the two sides of the head is seldom equal; that one side is as liable to have the higher temperature as the other, contrary to Broca and Gray who found the left side of the head slightly warmer in right handed persons; and that the ordinary differences observed ranged from 1-40 to $\frac{1}{2}$ F. with rare extremes of 0 to 1.18 F. Practically the same variations, though of course somewhat less on the average, were found between different regions of the same side. In brief the thesis seems experimentally established that the normal differences of temperature which constantly occur

between well defined, but not too small areas of the brain surface, are relatively indicated on the surface of the head.

What then may we expect to find in the way of temperature modifications as the result of morbid processes within the cranium. The laws of pathology are the same, subject to local conditions, here as elsewhere. In acute metritis for instance, Hunkiarbeyendian, in his Paris thesis, records the temperature of the interior of the uterus as 103.1 F., while the axillary temperature stood at 101.3 F. Clinical observations of a striking character in reference to the brain are not lacking. Thus Dr. Mary Putnam Jacobi records a case of tubercular meningitis with temperature of 101.8 F., over frontal, and 104-105 F, over occipital region where tubercular processes, especially in the pia, were active. In one case of meningeal hemorrhage, verified by autopsy, I found temperature over frontal regions 103-4° F, with axillary temperature of about 100 F. In several cases of brain tumor which are still under my care and upon which I have made several hundred surface temperature observations, the most capricious fluctuations have been observed, although the temperature of the head has been almost constantly abnormally elevated. One of these cases gave such apparently contradictory results that it seems worth a reference. It is that of a case of brain tumor for the study of which I am indebted to Drs. Hatfield of Bluffton, and Wheelock of Ft. Wayne. The diagnosis was made of a neoplasm in the left pons region, probably tubercular in character; the diagnosis being based briefly, and in part, upon double choked disc, and involvement of fifth, seventh and eighth nerves. To my surprise the thermometer showed a temperature on the R side 1½ F. or even more above the L. The preponderance of the high temperature since that time, while it has shifted many times has probably been in favor of the right. The only significant thing has been that it is almost constantly elevated, while the temperature under the tongue is usually normal. In such a case with only one or a few temperature observations, the focal symptoms must of course decide the diagnosis. It shows however as Seguin pointed out a quarter of a century ago, and as every competent clini-

cian recognizes to-day, that a single thermometric observation should rarely, if ever, be relied upon as an important factor in diagnosis. I have not the time to speculate upon the anomalies of this case. They are probably to be explained by the very deeply seated location of tumor; by the possibly or even probably multiple character of the growth, thus influencing the temperature locally at different points and through the general circulatory derangement or disturbance of the cerebral heat centers. In another case under the care of Dr. C. B. Steman in which upon other grounds I made the diagnosis of a tumor in the right Sylvian fissure, the diagnosis was confirmed by finding the surface temperature constantly from one to one and one-half degrees higher than upon any other point upon the head. In this case, still living, operation was advised, but declined. Dr. Mills found in a case of brain tumor an elevation of 3° degrees. Such a variation is strictly within the physiological limits. However it is probably true in local as it certainly is in general thermometry, that a level temperature near the higher limits of the normal excursion is morbid. In the light of this fact numerous observations should be made, and a relatively slight elevation if found persistent, should be given considerable weight, inasmuch as it means much more at the surface of the brain than at the surface of the scalp.

Lowered temperatures are scarcely less important than elevated ones. Thus Broca found a fall of 4 degrees (C?) over the area of a brain embolism. Indeed important aid might in some cases be derived from surface thermometry in the differential diagnosis between embolic and inflammatory softening. In a case of inflammatory softening recently referred to me by Dr. Merriman of South Whitley, Ind., the temperature over the softened area was from 4. to 6. F. above the normal. Although therapeutics is not within the scope of this paper I cannot refrain from remarking that in this case the persistent application of the ice bag not only lowered the temperature, which might be plausibly said to be simply due to frigeration of the scalp, but would keep it down for from 12 to 20 hours, after which again it would

slowly rise to about the same point as before; not reaching it, however, until after the lapse of 24 to 48 hours. Such an observation clearly indicates the value of surface thermometry as a guide to therapeutic procedure in certain forms of brain disease, as well as the lasting effect of ice applications on the temperature of the brain itself.

In the light of these facts, and others equally important, but omitted for the sake of brevity, what is the fair, conservative diagnostic value of surface thermometry in brain disease? Bearing in mind the oscillatory waves of both morbid and normal human temperature, first established by the genius and tireless labors of Wunderlich, and later specially elaborated with reference to the head by Broca, Schiff, Lombard and others, we are prepared to exercise caution in accepting these observations in support of diagnosis. There is also much to be worked out in reference to the thermal influences of the sympathetic, and of cerebral heat centres. Schiff, for instance, asserts that these temperature fluctuations of the head cease upon section of the sympathetic, irritative and paralytic lesions of which may therefore be fairly assumed to exercise a perturbing influence upon cerebral temperatures. Notwithstanding these obscurations, however, and notwithstanding the disturbing influences of environment upon cephalic, as upon other peripheral temperatures the fact appears perfectly patent to me that we can no more afford to neglect surface thermometry in the study of brain disease, than we can axillary, oral, and rectal temperatures in the study of general disease. It is as true in one case as in the other that we will often get negative and occasionally paradoxical results; that the temperature observations must be compared with focal and other symptoms and given now a high and now a subordinate value; and that, in the one case much more than in the other, a somewhat laborious technique, and scrupulous regard to environment, are essential³ to the attainment of trustworthy results.

The surface temperature will not any more than will a focal symptom, determine the pathological nature of a cerebral lesion. It will, however, give us information upon

two points, viz: the vascularity of the tissue, and the intensity of tissue metabolism. These are both increased in inflammatory processes, the latter being the more important factor, as first shown by the observations of Simon and verified by Weber, that the focus of inflammation is hotter than the blood emanating from it. The surface thermometer will not tell us then whether or not there is a tumor, an abscess, or a hemorrhage, for with these conditions the temperature may remain within the normal range; but if the phenomena of inflammation are associated with the tumor, the abscess, or the hemorrhage, as occurs to a greater or less degree in practically every case, and just in the proportion to the extent that this occurs, we will have increased vascularity and intensified metabolism, with the necessary rise of temperature of the surface of the brain which will be relatively indicated on the surface of the head with the certainty of physical law, but in varying degree, and subject to modifying influences.

I can not enter into the detailed discussion of the surface thermometry of the head in particular diseases. A few general statements must suffice. In meningitis, of the acute or subacute type, so far as recorded observations indicate, the surface temperature of the head is invariably elevated out of proportion to the general temperature and to the greatest degree over those areas in which the inflammatory process is most intense.

In cases of brain tumor the surface temperature is elevated in proportion to its proximity to the surface, and the rapidity of growth, and consequent irritative phenomena. The temperature is often within physiological range, as is the general temperature in many cases of pulmonary tuberculosis, in which case it is necessary to study the temperature curve for a considerable time when even a slight but practically constant elevation of the line can be assigned a definite value. What has been said of tumors is true in a general way of abscesses and hemorrhages. In embolism the temperature as already stated has been found lower over the embolic area. In regard to insanity the evidence is somewhat conflicting, though observers are generally

agreed that there is an elevation in acute mania, as shown by Maragliano, Seppilli and others. But I cannot proceed further along this line, and will conclude by remarking, that if this essay has succeeded in more pointedly directing the attention of my colleagues to an important aid in a difficult field of diagnosis, it has achieved the purpose of the writer.

SYPHILIS AS AN AETIOLOGICAL FACTOR IN THE PRODUCTION OF LOCOMOTOR ATAXIA.

DR. C. TRAVIE DRENNEN, Hot Springs, Ark.

SYPHILIS as an ætiological factor in the production of locomotor ataxia has been both widely and interestingly discussed in the years that have so recently gone, and one cannot but take cognizance of the general trend of scientific thought to hold accountable syphilis in a very large and growing per cent. for the production of this disease. We may truthfully assert that the great majority of writers upon this subject at the present day are practically with one accord in their belief. There is, however, a certain respectable minority who do not concur in such opinion. Therefore, might it not be well at the present time to consider some of the reasons upon which some of the majority base their opinions and also ascertain if we possibly can why the minority can not be brought to view the subject in the light the majority see it. Those who believe in syphilis as a cause or an underlying condition in the production of this disease have and make as a basis for such belief some of the following conditions and statements:

First, that a great and large per cent. of all tabetic subjects present a history of syphilis most probably ranging from forty to sixty per cent.

Second, the occurrence of symptoms of tabes analogous to syphilis—such as ocular palsies, pupillary reflexes and lightning pain.

Third, the beneficial effects of mercury and the iodides in relieving many of the symptoms of tabetic disease.

Fourth, that syphilis in its advance stages produces chronic proliferation of connective tissue with sclerosis in various organs and that it further provokes specific arterio-sclerosis and that these two factors acting together would cause degeneration when attacking the posterior root at its weakest point.

In consideration of the first statement it must be admitted that a direct or indirect history of syphilis will be found in a large proportion of tabetic subjects, but this fact proves one thing, if any thing at all, that we as a race are fast becoming a nation of syphilitics. When it is remembered that a great majority of tabetic subjects are men from thirty to forty years of age, strong, powerful and otherwise healthy and denying themselves nothing that their sexual appetites demand and to that added alcohol and tobacco to fire their already perverted passions and knowing that such men must necessarily be more exposed to syphilis, may we not reasonably account in this way for the large per cent. of syphilitic histories occurring in tabetic subjects and at the same time hold accountable king alcohol, tobacco and sexual excess largely for the damages done to the nerve centers? In discussing the second statement, it is again true that many symptoms known to be syphilitic also occur in locomotor ataxia; and we confess that we can hardly understand why it should not be so, when it is known that there is not a single organ or constituent part thereof, that is exempt from the ravages of syphilis. And as to the third statement, that many of the symptoms of locomotor ataxia are relieved or even ameliorated in any sense whatever by antisiphilitic treatment we desire to question, and would suggest that out of one hundred capable observers belonging to the rank of the majority, there would not be ten per cent. who would agree or concur in that assertion, in fact we doubt if there would be five. And now as to the fourth statement that advanced syphilis does produce chronic proliferation of connective tissue with sclerosis of various organs and further provoking specific arterio-sclerosis we most assuredly admit, but would invite investigation and suggest that there are other causes which would account

for this same condition, viz: arterio-sclerosis. Now coming to the proposition as a whole.

Be it remembered that of all diseases with which we are familiar there is not one that is more amenable to treatment upon the whole than syphilis, and such being the clinical facts which present themselves, is it not, to say the least of it, to be marveled at, that a disease being produced or measurably produced by syphilis, has not in the cycle of years ever as yet been arrested in its progress for more than a day, figuratively speaking? It will be admitted that syphilis of the spinal cord and brain are not only amenable to treatment but in certain instances are actually cured so far as we are able to ascertain. To the contrary the tendency of tabetic disease is progressive to-day, and ever has been so far as we have been informed. It may be truthfully said that when degeneration has once been thoroughly set about that it may continue regardless of what the original cause or causes may be or may have been; but when we remember again that many cases of tabetic disease have fallen early under observation of most capable practitioners and skilled diagnosticians who have subjected these self same patients to most vigorous antisyphilitic treatment practically without result, we say (far as yet we have never seen a well authenticated cure) truly this is the riddle of the Sphinx. It is believed that few women, comparatively speaking, enjoy the sexual act to that extent which is characteristic of man, and from hints given above as to alcohol, tobacco and sexual excess, may we not measurably reconcile the difference in the proportion of male and female subjects attacked with tabetic disease?

It is said that in Japan where syphilis is known to be wide spread that tabetic disease is rarely to be seen; more, in our own country, our native southland, amongst the negroes where syphilis is so frequently encountered, we do not recall the fact in our experience of twelve years in the practice of our profession in that country of ever having seen a single case of tabetic disease in the negro. We are sure that it does occur, but those who give such assurance, re-assure us that the condition is rare. Dr. James

Jelks tells us that in the nineteen years of his professional life spent at the Hot Springs of Arkansas, he has never as yet seen one single case of tabetic disease occurring in the race above referred to. Now, if syphilis be the great factor in the production of tabes dorsalis, why in the races which we have referred to above where syphilis is known to be so common do we so seldom meet tabetic disease? These with other questions which would naturally arise from the preceding paragraphs are worthy of note and entitled to consideration. It has not been our desire to formulate a theory in the discussion of this subject, but rather to question some of the ideas that are so strongly held by those who believe in syphilis as the great underlying condition in the production of this disease. But at the present time we cannot resist the temptation to suggest that in our opinion we have one other cause which enters as a possible factor in producing locomotor ataxia, viz: the long continued and uninterrupted administration of large or even measurably large doses of iodide of potash which is so commonly given at the present day in the treatment of syphilis. When we recall the fact that the pathological changes found in every case of locomotor ataxia are those of arterio-sclerosis in the posterior spinal artery and its lesser branches, and understanding that any agent which is devitalizing, irritative and destructive in its nature and which is constantly circulating in the blood and destroying the red blood corpuscles, must necessarily produce irritation in the delicate walls of the blood vessels just the same as the poison from syphilis or gout, whatever that or their poison may be, and in consequence thereof we might naturally expect just such pathological changes as are found in locomotor ataxia. Again knowing that anemia means lessened resistance of all the vital functions of the body as well as a weakening of the walls of the blood vessels in consequence thereof, there would be dilatation and passive congestion, or more blood supply, a step necessary to be taken in the production of new connective tissue and the consequent thickening thereupon of the blood-vessel walls themselves would be the result. These two

factors in addition to the paralyzing influence upon the nerve centers of large doses of iodide of potash would, and does, in our opinion, produce just such changes as are found in locomotor ataxia. This would again go to show in connection with the above statement why the negro so rarely has tabetic disease, since it is well known that you cannot force him to take the drug after the active symptoms have disappeared. This will also hold good with women since many of them contract syphilis in such a way that they do not know what ails them and go through the whole course of the disease, taking medicine only when active symptoms manifest themselves.

In conclusion, we would say that iodide of potash has not one upon her list of friends who would guard and protect her every interest more than we, and the plea we enter in her behalf is the plea for longevity and happiness to mankind. Will we never, as scientific men, learn that a remedy which is so capable for good must when perverted be equally potent for evil?

THE PSYCHO-NEURAL FACTOR IN MEDICAL PRACTICE.*

By C. H. HUGHES, M. D., St. Louis.

THOUGH for more than two decades I have practiced only Neurology and Psychiatry, I have not ceased, as had been my habit for more than a decade preceding, to consider the whole field of clinical medicine in my special practice.

Howsoever a human being may be regarded in the estimation of the philosopher, the theologian or the poet, to the physician, man is a machine whose movements he considers as a whole and in all its wondrous parts whenever called upon to repair it. While the true specialist works at the repair of a part, he looks upon the whole and considers the relationship of the part to the whole and the whole to every part, as Descartes looked upon the soul as residing in the whole and the whole in every part of the organism. The sphere and function of a specialty is to manipulate and treat a part, an organ or allied group of organs or a physiological system of the animal economy, but it is the duty of the specialist to understand and consider the whole anatomical, physiological and chemico-biological machine when it is anywhere disordered because of this intimate relationship. He must with skilled physiologic and pathologic vision consider the whole mechanism while working on a part, and treat the entire patient so far as the patient's needs may require, while specially operating on an organ or group of organs, locality or system of the economy, so intimately blended and thoroughly inter-

* Read before the Miss. Val. Med. Ass. at St. Paul, Sept. 18th, 1896.

related is man in all his parts. Some parts, it is true, influence the whole less than others and in an insignificant degree, and the whole influencing some parts less than others and often insignificantly, nevertheless, in every local trouble no matter however small, the whole patient should receive consideration. The extraction of a tooth or the cutting of a gum may cause the haemophiliac to bleed to death by reason of the loosened hold the vaso constrictor vessels of his sympathetic nervous system may have upon the contractile power of his arterioles or by the additional reason of the diffluent quality of his blood, the result of defective metabolic function, itself greatly influenced by neural control. So too, the evacuation of an abscess or the lancing of a whitlow may cause the patient to faint dead away through psycho-neural impression, just as the sudden emptying of an extensive abdominal ascites by the sudden removal of accustomed pressure on adjacent organs may prostrate and collapse the patient. The good surgeon considers the man all over before he cuts him in a part, his susceptibilities, predispositions, powers of resistance, recuperative powers and natural courage in determining as to operation or prognosis, and much of the fate of a patient after an operation depends upon judicious after care and the inherent powers of the nervous system to assist in the repair and rebuilding of tissue, to resist and restore the effects of shock and to receive and conduct general recuperation. Whatever may be the matter with the patient his nervous system is always with, and either for or against, him and the surgeon in the battle of life after the surgeon shall have done his most skillful part in removing the local *casus belli* or the irritating sequence or the harrassing enemy to the peace or comfort or harmony of life, of the organism.

THE PSYCHO-NEURAL FACTOR IN THE PRACTICE OF SURGERY.

The fatal vivisections that have signaled the onward march of surgery, an art so beneficial to mankind in skillful, practiced hands, guided by conservative clinical

judgement, would have been far less in the past and would be less to-day with a broader knowledge and wiser consideration of the *vis medicatrix* of vital nerve centers, the recuperating or depressing play of the emotions of hope or dread, the influence of visceral ganglionic centers and the potency of vaso-motor nerve-fibers.

The neural counterfeits of uterine disease, as Goodell has termed those functional neuropathic conditions which call attention to the heart and which lead the narrowly experienced clinician but skillful cutter, to operate when only neural medication should have been employed, has cast a stigma upon some of the capital operations of Gynecology from which it is just now, after many years of fatal error, recovering.

Senn has lately struck a merited blow at some of these gyneco-surgical fatalities of judgement, and the scope of indications for oophorectomy will be hereafter more limited, in the best surgical minds, while normal ovariectomy has had its day and gone the way of cliterodectomy.

Painful ovaries are not necessarily to be cut out, but cured by neurological treatment and hysterectomy will be performed only for real organic and local pathological cause.

As a thorough knowledge of general and special pathology is essential to the soundest surgical judgement as to the propriety and necessity of an operative procedure, so is a knowledge of the nervous condition of the patient and the relation of his nervous system to the local disease found essential to proper diagnosis and prognosis. The time is coming and now is, when the surgeon should have wide neurological and psychiatric knowledge in order to avoid fatal mistakes and to most successfully practice his art. The manner in which the necessity of a grave operation is announced may to certain psychologically unstable constitutions predetermine a fatal issue or it may give to a doubtful issue a possibly favorable result. There are some constitutions so neuropathic and psychopathically predisposed that the shock of such an announcement would precipitate a crisis of mental alienation and it were better that the proposed operation should be abandoned than insisted upon under such

circumstances or that the patient should be gradually approached and prepared by cautious speech and suitable precursory reconstructive and tranquilizing neurological treatment. Some patients before being operated on should be made almost entirely over, in the tone of their nervous systems and some should be left alone, tranquilized and made comfortable and allowed to die in happy euthanasia. What, for instance, is the use of exsecting a far advanced cancerous uterus, after the cachexia has long persisted and the nerve centers have become irreparably neuratrophic and the neurasthenic has become profoundly incurable from the prolonged pain and insomnia, etc? The rational process would be to stop the pain and insomnia, correct as much as possible and make the patient's last days comfortable by neurological and antiseptic treatment and the best surgical suggestion, without the knife. In fatal surgical results the reputation of operative surgery suffers often because overlooked neuropathic conditions were at fault.

In my judgement the previously applied skill of a neurological clinician would postpone many operations indefinitely which are now fatally performed, and properly prepare other cases for the surgeon's knife and a successful surgical issue which are now doomed when the operation is decided upon, because conditions of proper endurance and resistance of the operation are not in the nerve centers of the patient.

The causes and effects of psychical shock in different patients are not always considered as they should be by either physician or surgeon. The possible evil effect of words and acts at the bedside or before an operation that tend to paralyze or even produce a paresis of hope, are not always duly considered. The surgeon who bluntly announces to his patient, after revealing the necessity for the knife and having all things ready—"Now I am going to operate. The proceeding may kill you but you would be better off dead than alive as you are; let us hope for the best," must have a strong-nerved, brave subject, to not be somewhat depressed by such an announcement, and such depression before the further depression of vital centers from chloroform or ether

even in the strongest nerved is not good clinical practice. It doeth not "good like a medicine." Such a procedure may have the virtue of candor to commend it, like the candid announcement by the physician that his "patient is likely to die; if he is saved it will be by the skin of his teeth." Recovery is not the rule when such premature prognoses are announced, sometimes because the patient could not have recovered by reason of an incurable malady and sometimes because of the vitally depressing effect of the speech that destroys hope and removes its buoyant influence from those vital nerve centers that influence the metabolisms of the organism and the assimilative processes of organic life and reformations of tissues. In our intercourse with patients, medical or surgical, the untoward and often fatal influence of depressing mental suggestion on the patient should always be avoided. Hope that "springs eternal in the human breast," if we do not interfere with it, is itself a buoyant medicine, and faith in the physician or surgeon is therapeutic power that should never be rudely shattered by us. Candor is to be commended but it can be too bluntly displayed and often is for the welfare of our patients. Besides the physician's or surgeon's judgement may be at fault—it often is. There may be more vital resistance and power of repair in the patient than the medical or surgical attendant thinks or knows. Vital power is not always a definitely measurable quantity, depending as it does upon ancestral factors in the upbuilding of the constitution—the cerebro-spinal axis and the sympathetic system of the patient—of which we are never fully cognizant. The patient should always have the benefit of this doubt in our prognostications before him or to him.

The little surgeon who pompously displays his tray of instruments before his trembling patient and to his woeful wondering mind descants upon the operation he is about to perform, and the chances of recovery, or displays a nonchalant unfeeling mien, acts unprofessionally and unwisely and does not increase his patients chances of getting well quickly.

And the great surgeon who takes his patient into the operating room and places him while conscious on the table,

himself with instruments in hand, while white aproned attendants gather around the victim, approaching with sponge and bottle and instruments and appliances of the impending operative procedure is not so wise a surgeon, and does not so fully consider the effect of depressing psychical influences as he who chloroforms the intended subject of an operation in another room or in the same room without these depressingly suggestive influences.

Had I continued the active practice of surgery (of which I once had, as you know, ample clinical experience) I should never vaunt the implements of my art before my patient, at least before he should recover from the operation, nor anaesthetize him in the presence of any depressing influences. When practicable I would for purely elevating psychical effect begin the administering of the anaesthetic in the most cheerful room I could prepare, I would drape its walls with suggestions of hope and inspirations of courage. I would have nothing about me at that time suggestive of blood. I would cheer him so far as I might without falsity, mention similar cases, if I could, that had gone through his approaching ordeal successfully and let him take his operating couch and anaesthetic as "one who lies down to pleasant dreams." I would proceed thus because I am a psychologist and have added something more than operative skill to previously acquired surgical knowledge. I would be as tender with him about inflicting the mental pain of dreaded apprehension as,—“one who would not needlessly set foot upon a worm.”

I would do this, not only because it would be the dictate of tender feeling, but because a sound psychology and a true psychiatry enjoin it.

P. S.—To be continued. This being all of the paper that was read. The next subject is "Hospital and Sick Room Psychiatry."

SELECTIONS.

NEUROTHERAPY.

STATIC ELECTRICITY IN SCIATICA.—Dr. S. H. Monell (*Brooklyn Med. Jour.*) has had results from the following procedure in sciatica. He places his patient fully dressed, sitting or standing, on the insulating platform of a Holtz machine, and applies the current in sparks over the painful points to the sacrum and generally along the affected nerve. In from five to ten minutes relief from pains results, lasting but a short time. Each subsequent treatment secures larger immunity from pain. He cites cases in which no other treatment was employed; but says that gout, rheumatism, syphilis etc., must be appropriately treated, if coexistent with the sciatica. One case of five months duration recovered after nine treatments in thirteen days, another after eleven treatments in sixteen days. One case after four years of suffering recovered at the end of forty-six days. None of these cases were put to bed or required to rest in any way and in none were splints used.

NITRO-GLYCERIN, according to Th. Schott (*Amer. Medico-Surg. Bul.*), develops its best action in the pure forms of angiospastic kind of angina pectoris. Next to these come the cases in which the heart-spasm is associated with lesions of the aorta. The remedy is much less reliable in stenocardia consequent upon myocarditis and in a fatty and weakened heart. In angina pectoris due to aortic aneurism its action is insignificant and in the purely motor neuroses it usually fails to accomplish lasting good. In no case can success be predicted with certainty as its action is always individual, but it has the great advantage that it can be quickly ascertained whether indicated or not. In cases in

which the toxic effects, as nausea, vertigo, fainting spells etc., are produced by even small doses of the remedy, it should be discontinued. But if the toxic effects be not produced with small doses and the latter remain without action, the dose may be cautiously increased. The form in which the remedy is administered is not a matter of importance, In Schott's experience the liquid form is the best. He has seen tablets fail where subsequently the liquid proved successful, besides the liquid allows of more varied gradation in the dose.

He recommends the following formula as most advantageous.

| | |
|---------------------------|----------------------|
| Solut. Nitroglycerin (1%) | 0.2 gme (3 min) |
| Tinct. Capsicum | 2.5 gme (40 min) |
| Alcohol | 12.5 gme (3½ fl.dr.) |
| Peppermint Water | 12.5 gme (3¼ fl.dr.) |

Dose 2 to 10 drops according to circumstances. In some cases of angina pectoris, nitroglycerin acts with astonishing rapidity. The spasmodic condition of the heart after begins to abate less than a minute after use of the remedy which usually develops its full activity within two or three minutes. One drop of this mixture may cause spasmodic conditions to disappear. In some cases however it helps until the patient gets accustomed to it, when the dose must be increased. Nitroglycerin may often be given in larger doses than it is usual to administer it, without serious consequences. Whereas 0.0005 or 0.001 gme (1-120 or 1-60 grn) is the maximum dose in which this remedy is usually given. Schott has seen patients take without inconvenience up to 10 drops several times daily of a mixture containing two and three times the nitroglycerin in the above formula. Heart disease underlying the trouble should of course be treated with other remedies since nitroglycerin is essentially symptomatic in action.

HICCOUGH persisting for three days in a non-hysterical girl was cured by spontaneous tongue traction. The affection appeared to depend upon disease of the stomach. It was noted that while the tongue was being examined

the hiccough ceased. The girl was then advised to protrude her tongue in a regular rhythmical manner. The cure was explained as due to reflex action upon the bulbar respiratory centre.—*K. C. Med. Rec.*

THYROID EXTRACT.—In Dr. S. Solis Cohen's clinic recently the tendency of *thyroid extract* to aggravate the symptoms of *exophthalmic goiter* in certain cases, was strikingly illustrated. A patient who had been improving under the use of *thymus extract*, but had come to a standstill, was tentatively placed upon the thyroid preparation. She returned in about two weeks with the goiter much enlarged, firmer in consistence and all the nervous symptoms exaggerated. Dr. Cohen remarked that his experience went to show that in exceptional cases thyroid preparations might benefit goitrous patients, both those with simple goiter and those with Graves's disease; but that as a rule the effect was *nil* or not good. He could give no definite rule for discrimination, although the effect of temperature upon the patient might be found to be of use; it being his present impression that those who were unduly susceptible to cold would do well, and those who were unduly susceptible to heat would do badly under treatment with thyroid preparations.—*Phil. Polyclinic.*

BROMIDIA AND PAPINE.—DR. I. H. GILES, of West Nashville, Tenn., speaks thus rapturously of Battle & Co's well known specialties: There is no opiate that serves the purpose as does Papine. Bromidia speaks for itself. Iodina is an alterative, unsurpassed in its merits. I prescribe these remedies, and specify Battle & Co., because they are so well prepared that I think no drug store or prescriptionist capable of combining their ingredients so nicely, so accurately, and all considered so reliably as they are coming from their laboratory.

MALARIAL HEMICRANIA.—That enterprising firm, The Antikamnia Company, is now combining antikamnia and quinia in tablet form, two and a half grains each, for malarial hemicrania, claiming happy results for the combination.

CONCERNING THE GOLD SOLUTION OF THE PARMELE COMPANY.—Many prominent medical practitioners report on the use of these gold solutions as follows:

First. That the best results are obtained by pushing these remedies to the point of toleration, and that *this may be done without fear of stomachic disturbance.*

Second. That the maximum dose varies widely in individual cases, some patients taking thirty drops three times daily before showing physiological affects, others being unable to reach even the average maximum dose (15 drops).

Third. That it is best to administer the solution in at least a wineglass of water, and to begin with a small dose (say 6 or 7 drops) and gradually increase.

Finally. That though the nature of these remedies and the class of cases in which they are indicated exclude the expectation of immediate results, their persistent use seldom fails to justify their administration, and the increase in number of red blood corpuscles to show the tonic effect upon the assimilative apparatus.

A HIGH REPUTATION SUSTAINED.—*The Medical Times and Hospital Gazette*, London, May 30th, 1896, speaks so favorably of its experience with the American analgesic, antipyretic and anodyne, a preparation the medical profession has become accustomed to regard as one of the certainties of medicine, that we reprint below its words of approval, knowing them to be in accord with the consensus of opinion as expressed by the medical men in this country. "Antikamnia—under the above name, a free translation of which is 'opposed to pain'—now being introduced to the profession in the United Kingdom is an analgesic, antipyretic, and anodyne drug, which has already gained a high reputation in the United States. It is a coal-tar derivative, and belongs to the series which form the various amido compounds. It differs therapeutically, however, from most coal-tar products in producing a stimulating, instead of a depressing action on the nerve centers, especially those acting on the heart and circulatory system; hence it may be administered, even in large doses, without fear of producing collapse and

cyanosis, as occasionally occurs after the administration of antipyrin and other similar analgesic compounds. It has been very largely used in influenza, hay-fever and asthma, with good results; but its most markedly beneficial effects are experienced when administered in neuralgia, rheumatism, sciatica, headache and pain due to disorders of menstruation. As an antipyretic, it is recommended to be given in doses of from five to ten grains ever ten minutes, until the temperature has been reduced, or until forty or fifty grains have been taken, after which the remedy should be given at intervals of greater length. To relieve pain it is recommended to begin with a five grain dose; three minutes later the same dose to be repeated, and, if the pain continues, a third dose to be given a few minutes after the second. In our practice we have not found it necessary to give the remedy at such short intervals. In the treatment of neuralgia and headaches we have had satisfactory results from giving five-grain doses at intervals of ten to twenty minutes, until three or four doses have been taken. We may add that the drug is sold in tablets (three and five grain sizes) as well as in the powdered form. The former may be swallowed whole, or crushed and dissolved in glycerine and water, or in an alcoholic menstruum. The powder is conveniently given in cachets, or dissolved in a little wine or aromatic tincture, combined with glycerine or syrup. The drug is deserving of trial, and those among our readers who have not yet tested it should write for a sample."

THE THERAPY OF TABES.—From a recent contribution on this subject by Prof. Wilhelm Erb, of Heidelberg, we quote the following summary:

Usually you will require a therapeutic agent, for instance, some approved nervine; quinine, potassium iodide, the bromides, or particularly one of the many new analgesics—among which I rank acetanilid (0.30—0.50 to a dose) first, although phenacetin, antipyrin, exalgine, salipyrin, sodium salicylate, lactophenin, etc., are also valuable. It is often advisable to employ several of these new drugs together

(for instance, acetanilid with phenacetin, salipyrin with lactophenin, or similar combinations), and to add small quantities of narcotics (codeine, atropine or morphine). Large and quickly repeated doses of all these remedies may be recommended.—*American Therapist*.

HYSTERICAL APHONIA.—Boulay (*Univ. Med. Jour.*) recommends introducing a sound into the larynx far enough to cause a slight spasm or cough and, removing the sound, have patient call out the letters of the alphabet slowly and calmly until a sound can be produced, then to count up to ten, then to articulate simple words and finally to converse. The sound may be introduced a second or third time, if necessary, in order to procure the desired effect. If this means fails, the aphonia is of a rebellious character and recourse must be had to external or internal electrization of the larynx by the galvanic or faradic current for four or five minutes, having the patient perform vocal exercise while the current is passed. Massage of the anterior portions of the neck, methodical traction of the tongue, rhinopharyngeal palpation or autolaryngoscopy are psychical measures that may succeed, as well as ovary compression. If these measures fail, hypnotic suggestion may be tried. General treatment with strychnine, valerian, the bromides, hydrotherapy or isolation must be associated with the local means employed, while lesions of the nose, pharynx or larynx must also be looked after.

NEURO-PATHOLOGY.

SPINAL CORD AFTER AMPUTATION.—Dr. Grigoriew (*Univ. Med. Mag.* Sept. 1896) investigated two cases of amputation of the arm, two of amputation of the thigh and one of amputation of the leg. The period elapsing between the operation and death varied from twenty years to one year. The results of his investigation with those of the greater number of authorities, he sums up as follows; in all cases excepting that which one year elapsed before death,

deviations from the normal appearance of the cord were noticed; in all cases, they were analogous, affected the corresponding portion of the cord and consisted in simple atrophy of certain portions of gray and white substance differing by degree of development. Simple atrophy of the nervous elements of the cord was greater as the period elapsing between amputation and death was greater, less as it was less. In the case in which the period was only one year, atrophy was completely wanting. With reference to the relative time before the separate paths and portions of the cord became degenerated, Dr. Grigoriew's results agree with those of other authors and those obtained by experiment on animals, viz.: that the atrophic phenomena appear earlier and are more marked in the sensory than in the motor areas of the cord.

EPILEPSY.—Dr. A. N. Langdon, in a paper read before the American Neurological Association, concludes that epilepsy, the choreas and probably most of the convulsive disorders are the dynamical expression of inhibitory insufficiency not indications of over-production of nerve energy nor "explosions" due to a molecular instability *per se*. That the cause of the inhibitory insufficiency is to be sought for in the end brushes of the collateral processes of various cortical neurons, the situation varying with the "type" of the disease whether sensory, psychic, or motor. That the defect consists most probably in structural incompleteness (small capacity, defective insulation, imperfect contact) or numerical deficiency, or both, in the collateral process of the neurons referred to. Defective collaterals may favor occurrence of convulsions in two ways, by impairing connection with other neurons (inhibitory storage, etc), and by increased resistance to overflow currents, causing temporary overcharging of motor axis cylinders. This is a new conception of the anatomico-dynamic basis of convulsive phenomena. On this basis, cases of epilepsy are classed under three groups, each of which represents important differences as regards prognosis and treatment: Primary or developmental type comprising the idiopathic cases under twenty years of

age. In these, the younger the subject and the better the heredity and environment, the better the prognosis under intelligent treatment; ultimate results depending on the possibility of promoting further and equable development of collateral communications with inhibitory mechanisms. The "accidental" forms are due to trauma, syphilis, lead toxins, etc. The prognosis here vary with the longer or shorter duration and the possibility of removal of the cause, being always favorable as long as permanent structural change in collateral and inhibitory mechanisms have not occurred. The degenerative pathological type, the rare cases of adult life and old age (not accidental), belong in this category. Here palliation only is to be expected as in degenerative changes elsewhere. In all forms the rational indications for treatment are: To decrease the incoming sensory excitation by diet, occupation, medicine and so lessen the intensity of motor responses which are not provided with suitable overflow and inhibitory mechanisms.

CAUSE OF CANCER.—Dr. O'Sullivan (*Australian Medical Journal*) says:

Whatever produces chronic ill-health depresses the nervous system, and is clinically found to constitute an influence strongly predisposing to cancerous developments generally.

Local agencies exert only a minor influence in their direct genesis.

While rapidly increasing in prevalence in civilized nations, they are almost absent among the savage.

Malignant disease is in very many instances primarily local and due to disordered functions, as proved by the fact known to all surgeons, that the disease when promptly removed may never recur.

Benign ulcerations may become malignant, when it may be assumed the phagocytic action of the leucocytes has become subjugated by the microorganism.

Disease of any kind, whether malignant or inflammatory, never occurs in an individual whose functions and nervous system are in perfect health, and who has, as a consequence,

perfect local and general resistance to all pathogenic microorganisms—in whom phagocytosis is healthy and perfectly accomplished. (And here I may be allowed to say that Mr. Jonathan Hutchinson insisted that cancer is simply a modification of what occurred in chronic inflammation).

When, from continued irritation, depressing influences, or advancing age, the physiological character and vitality of the animal cells become lowered, cancer finds all the conditions necessary for its growth.

In a word, cancerous disease is but one of the many proofs of overpressure on the nervous system, which the artificial and vicious conditions of modern civilization involve.—*American Lancet*.

THE BACILLUS OF PARESIS.—The *Journal of the American Medical Association* thus editorially discusses this subject: That parietic dementia, or, as it is more commonly designated, paresis, has in the vast majority of cases syphilis as its antecedent, is coming to be a generally accepted fact. The exact relation of the two disorders to each other are, however, still in question, and the syphilitic or parasymphilitic nature of paresis is maintained by some and as strongly disputed by others. If the infection of syphilis were as definitely known as is that of some other diseases, tuberculosis for example, the question would be more simple; we could search for the specific microbe, and if found the identity would be established. Other like questions have been settled in this way; the failure to find Hansen's bacillus in syringomyelia has been considered as conclusive against Zambaco's theory of its identity with leprosy, and still other instances could probably be cited. With the present uncertainty as to what is the real nature of the syphilitic infection, there is no possibility of a definite conclusion as to the identity of it and that of paresis on purely bacteriologic grounds, but a very recent Italian contribution is very significant and suggestive. In the latest issue of the *Annali di Neurologia*, Dr. Piccinino, one of Professor Bianchi's assistants, reports the results of a bacteriologic study of paresis in the laboratory of the Istituto

Psichiatico of the University of Naples. He examined the cortex in five cases, some of them with clearly syphilitic histories, others with it suspected or denied, using all antiseptic precautions and taking the specimens through openings made in the skull by trephining before the removal of the calvarium, as an additional security. Culture experiments and the usual staining methods gave only indeterminate or negative results; nothing very characteristic or noteworthy was discovered. The use, on the other hand, of a staining method only slightly modified from that of Lustgarten for his syphilis bacillus, revealed a great abundance in all the tissues, and especially in the pericellular spaces, of a form apparently not very different from that described by the above author. The same method was tested as a control experiment in other brains than those of paretics, but with a uniformly negative result, and it was only by this staining reaction that these bacilli could be detected in the parietic cortex.

This paper has a special importance, in view of the question of the parasymphilitic nature of parietic dementia, and reflexly, as it were, also on that of the value of Lustgarten's discovery. It is a little remarkable that the research had not been made before. Had there been more faith in Lustgarten's bacillus as the cause of syphilis, or had the notion that paresis is only a late manifestation of that disease been earlier accepted by physicians, the very obvious suggestion of this special investigation would undoubtedly have been sooner taken up. It will be in order now to repeat Piccinino's observations and to prove their value by widespread and careful investigations by our asylum pathologists.

CLINICAL NEUROLOGY.

TREMOR.—Dr. Lamacy (*Medical Week*) divides tremors into two classes according as they occur while the subject is at rest or in execution of voluntary movements; but polymorphous forms of the affection, frequently met with, do not

belong to either class. Tremor of the hands has been more thoroughly studied than any of the other forms. Pitres has shown that this tremor may exist independently of any of the diseases by which it is determined in a large number (40 per cent.) of healthy subjects. The proportion of tremor under normal conditions is the same in men as in women which shows it results neither from emotionalism nor alcoholism for in the former case the proportion of persons affected with tremor would necessarily be higher among women and in the latter case among men. In neurasthenia the proportion of subjects affected with tremor is 85 per cent., in epilepsy 20 per cent., in hysteria 34 per cent., in insanity 25 per cent. Tremor of the tongue in healthy subjects is rather rare (6.45 per cent.). In association with the tremor of the hands it is met with in 23.16 per cent. of all subjects examined. Quivering of the eyelids is not of value as a symptom as it is fully as frequent normally as in various neuroses. Tremor of the tongue is more frequent in parietic dementia than hand tremor at the onset. Tremor is rather frequently met with in association with arhythmic movements of limbs. The same patient may present tremor in one limb and choreic or ataxoid movement in the other. Similar combinations are observed in certain cases of simple tic, paramyoclonus multiplex, post hemiplegic tremor and Friedreich's disease.

The diagnostic value of tremor varies because there are numerous transition forms between the various types described and because certain types are still but imperfectly known. In many affections tremor may be ephemeral without special significance, whereas at other times it is of great value when constant.

SYPHILO-NEUROSES AND EARLY TREATMENT.—Dr. J. Collins concludes, in a paper read before the American Neurological Association, that; Exudative and degenerative diseases due to syphilis are most liable to show themselves at the end of the third and beginning of the fourth, decade of life. Thorough and prolonged administration of antisyphilitic remedies during the activity of the virus does not seem materially to prolong this time limit. Active prolonged anti-syphilitic

treatment does not seem to prevent the development of locomotor ataxia or parietic dementia. This is true of degenerative disease though treatment may however have some effect in preventing exudative disease of the nervous system, such as spinal cord syphilis, diseases of the blood vessels, etc. Cases of tabes and parietic dementia in which syphilis is confessed and in which treatment has been most desultory and incomplete, are not more liable to the early development or to the severe manifestations of these diseases than those in which the treatment has been all it should be.

ANALGESIA AND LOCOMOTOR ATAXIA.—Dr. Sarbo points out (*Neurol. Centralblatt*) that in normal individuals, pressure of the ulnar nerve against the bone at the elbow produces pain and numbness in the distribution of the nerve and the result is similar when the peroneal nerve is pressed against the head of the fibula. In locomotor ataxia it has been claimed that this pressure upon these nerve trunks was no longer painful. There is considerable difference of opinion among German investigators as to the cause and significance of this analgesia. While in fifteen cases of locomotor ataxia, nine men and six women all of whom had suffered from the disease at least four years, all the men had analgesia of both ulnar nerve trunks with the exception of one in whom it was reduced on one side, and all had peroneal analgesia on one side or the other. Sarbo does not think the matter has been investigated sufficiently to assign to it a very definite position as a factor in diagnosis. In one woman there was analgesia of both ulnar and peroneal trunks, one had analgesia of both ulnar trunk and the right peroneal trunk and one had analgesia of the ulnar only. The remainder either presented slightly diminished sensibility or no change. Sarbo was prepared to expect more marked and constant changes in the peroneal than in the ulnar trunks since in locomotor ataxia more marked anatomical changes are seen in the lower than in the upper cord. Women gave closer attention while being examined than men.

HEPATALGIA.—Dr. Pariser in the last three years has observed several cases of liver neuralgia (*Med. Week*) which he states is not such a rare disease. Being unknown, it has been overlooked. It is usually confused with gall-stone colic; one case of hepatalgia was operated upon. In but few particulars is liver neuralgia to be distinguished from biliary colic. In hepatalgia the greatest pain is sharply localized to the liver whereas in gall-stones colic the pain is very frequently more intense in its radiation. The attacks are of varying duration from a few minutes to four hours and more. The cessation of the attack can sometimes in hepatalgia as in gall-stones colic, be ushered in by vomiting; occasionally icterus may occur. Hepatalgia is particularly characterized by the regularity of the repetition of the attacks, by its affecting especially female patients, above all, by its association with the menses. It belongs to the visceral neuroses and has an hysterical or neurasthenic basis. The therapy must be antineurasthenic, roborant and demands particular attention to, and if possible removal of, factors inducing attacks. Of nervines, cannabis indica is especially recommended.

DYSTROPHIA UNGUIUM ET PILORUM HEREDITARIA.—Charles J. White, of Boston (*Journal of Cutaneous and Genito-Urinary Diseases*, June, 1896, p. 220), refers to a peculiar and unusual hereditary affection which attacks coincidentally the hair and nails. The condition was observed (according to obtainable facts) in four generations, and White speaks of a similar instance as having been observed by MM. Nicolle and Halipre through six generations, in all of which thirty-six persons had been affected. The hair and the scalp present a downy condition, never very prolific or lengthy, and is hardly perceptible except to a close observer. The nails show a characteristic onychia. After repeated microscopic examinations of both hair and nails the author was unable to detect a cause.—Dr Cantrell's selection in *Phil. Polyclin.*

BROMIDE IN THE BRAIN POST MORTEM.—The *Practitioner* gives an account, which we condense, of a boy, æt. 12, under hospital treatment for a year for a series of epi-

leptic attacks complicated with acute mania. He was taking during the whole of this time from 60 to 130 grains a day of potassium bromide. In November, 1888, he caught scarlet fever. The fever was not severe, and ran a normal course but the attacks of epilepsy and mania continued to occur, and in the intervals between those there was profound depression and disinclination to speak or eat. At first the potassium bromide was given up as unsuitable, and indeed perhaps dangerous; but when the convulsions recurred again and again, it was resumed in doses of 60 grains a day. After some days a cough began, which was sometimes very choking; there was no auscultatory sign of pneumonia, but the temperature rose, and he died eighteen day after the onset of scarlet fever. A post-mortem examination showed some patchy congestion of the lungs, with a little pus in the bronchi, and no pathological change in the kidneys or elsewhere, except perhaps that the brain substance was a little tougher than usual. The torpor between the convulsive attacks had been very striking clinically, and his doctors were interested in attempting to trace a connection with the bromide treatment and a possible accumulation of the drug. M. Cazeneuve analyzed the brain, and M. Doyon the liver for comparison. In the brain there was found 30 grains of bromide; in the liver 12 grains.

SEARCH-LIGHT FORECASTS OF THE COMING PAN AMERICAN MEDICAL CONGRESS.—SYMPTOMS OF SPEECH DISTURBANCES AS AIDS IN CEREBRAL LOCALIZATION.—The paper by J. T. Eskridge, M. D., of Denver, Colo., before the neurological section will seek to establish the following propositions on the above subject:

1. Anorthographia (inability to write from loss of the power to spell). The centre in which is stored the memory pictures of the arrangement of letters in words, etc., is probably situated in the foot of the left second frontal convolution in right handed persons.

Cases of so-called pure motor agraphia apart from the involvement of the muscles concerned in writing probably do not occur.

2. Oro-lingual paralysis occurs from a lesion in the extreme lower portions in the central convolutions (ascending frontal and parietal). This centre is bilateral and the paralysis is never complete from a unilateral lesion.

3. Broca's Aphasia is caused by a lesion in the foot of the left third frontal convolution in right handed persons.

4. Auditory disturbances of speech are caused by a lesion in the posterior portions of the first and second temporal convolutions.

5. Visual disturbances of speech result from a lesion in or near the angular gyrus.

6. The various forms of apraxia have little localizing value further than to point to a lesion in the left side of the brain in right handed persons, at a point posterior to the Rolandic region.

7. By a careful analysis of the symptoms in sensory aphasias the cortical or subcortical lesions which have given rise to them may often be accurately localized, although the supposititious cortical centres of speech are not directly involved.

PSYCHIATRY.

HYSTERICAL AFFECTIONS OF THE MASTOID.—Dr. J. E. Sheppard of Brooklyn reported to the American Laryngological, Rhinological and Otological Society the case of an 18-years-old girl in rather poor health who came to him with the history of deafness for three years and of pain and tenderness around the right ear for the past three weeks. Bone conduction was better than aerial conduction. Firm pressure could be made over the part without causing pain. The patient was given sodium bromide and in a few days was well. The second case was that of a young woman twenty-one years of age who had fallen down an elevator shaft. Recently she had felt dizzy and had exhibited a tendency to fall backward to the right side. She complained of pain around the ear. The mastoid region appeared to be tender but not at all oedematous or swollen. A proposi-

tion to operate did not lessen her symptoms at all and for several days he had been in doubt as to the correct diagnosis. Two seances or partial hypnosis produced a cure. The third case was a woman twenty-three years of age who stated that for the past five months following a cold she had suffered from pain in and around the ear without any discharge. Examination showed no evident cause for the condition and the diagnosis was made of hysteria and the attending physician was advised to treat the case by "suggestion". He had been unable to learn the outcome of this case.

Dr. Richardson said that not long ago he had operated upon a case of this kind. The patient was a young woman about eighteen years of age who had been treated six years ago for suppuration of the right ear. When seen again the ear was once more suppurating and there was extreme tenderness over the mastoid region. She had become hysterical as the result of grief over the death of her mother. There was no oedema or redness over the mastoid but it was well known that there were cases of serious mastoiditis without the usual signs. After waiting about two weeks he had opened the mastoid cells only to find them perfectly normal. The patient was, however, completely cured.

Dr. Myles referred to the case of a woman in comfortable circumstances who had suddenly developed extreme tenderness in the mastoid region. The girl was hysterical and he had some reasons to expect that she purposely irritated the ear. The girl was greatly pleased with a proposal to open the mastoid but after consultation this was postponed and the patient recovered without further treatment.

Dr. Phillips recalled a case of recurrent furunculosis of the canal and finally of severe pain and tenderness in the mastoid. One day she forgot to remove the article that she has been introducing surreptitiously into the ear. Examination revealed a fragment of a pin and several pieces of fingernails in the canal.

Dr. J. E. Nicholas said that in one case which he had seen, the mastoid cells were healthy but the patient had been cured at once by opening them. In another case in which there was an excoriation of the interior wall of the

canal and in which he suspected that hemorrhages complained of had been produced by picking this spot with a pin, hypnotic suggestion was only temporarily beneficial but a proposal to operate was sufficient to effect a cure. It was not at all improbable that there might be some elevation of temperature in these cases thus still further obscuring the diagnosis but ordinarily this elevation would be light.

Dr. Denchsa remarked that in this discussion nothing had been said about the result of comparing the two sides. In these hysterical cases in which pain was complained of on one side there was usually as much tenderness on the other side. He recalled a case in which at each menstrual epoch there would be marked oedema and tenderness over the mastoid. Such a condition must be looked upon as angio-neurotic in character.

ANALGESIA OF THE ULNAR NERVE IN CASES OF INSANITY.—Dr. O. Snell has corroborated the statement made by Cramer, that the "funny bone" sensation, *i. e.*, the unpleasant feeling produced by pressure on the ulnar nerve in the sulcus ulnaris, is much more frequently absent in general paralytics than in other cases of insanity. He found the phenomenon absent in 14 out of 25 general paralytics, or in 56 per cent., while it was not found present in but 11 out of 75 cases of other forms of insanity. It was impossible to demonstrate a connection between the sensory disturbances of the surface of the skin innervated by the ulnar nerve and the other symptoms of general paralysis.—*Berliner klin. Wochenschr.*—*Centralbl. f. innere Med.*, March 7, 1895, Dr. Hoisholt's selection in *Occ. Med. Times*.

HE IS 139 YEARS OLD.—Russia has the oldest man on earth, says *The St. Petersburg Gazette*. Its Moscow correspondent tells of him thus:

"There appeared this week in the office of the police surgeon an aged man who wished to have his injured hand bandaged. The surgeon bound up the wound and then began talking with the patient. He learned eventually, from documentary evidence, that the man was born in 1757, during the reign of the Empress Elizabeth, and therefore is

139 years old. The old man whose name is Kusmin, said he was a native of Moscow, and from his twentieth to his eighty-sixth year had been a coachman. In his eighty-sixth year, however, he had upset his master, a count, and the count's brother, had hurt both seriously and had been sent to Siberia, where he had lived until 1893. In that year he decided to return home, and he arrived in Moscow in 1894. He at once started for Kieff on a pilgrimage, from which he had just come back. He was much grieved to find that all the friends of his former years were dead.

"Kusmin's eye sight is undimmed, his hearing is good, and he is a splendid walker, as his pilgrimages have shown. Up to his 134th year he had never tasted whisky, but now he allows himself an occasional drink."

FORENSIC PSYCHIATRY.

SPECULATIVE OPINION EVIDENCE.—The opinion of a medical witness as to the mental condition of a person at a certain time, based upon a physical examination made eighteen months afterward, where such witness is not informed as to the mental condition at the time when the mental capacity was in question, the supreme court of Kansas holds, in *Missouri Pacific Railway Company v. Lovelace*, decided July 11, 1896, is largely conjectural, and is too uncertain and speculative to be valuable or admissible. Opinion evidence, the court says, is only admitted from necessity, and then only when it is likely to be of some value.—*Journal American Medical Association*.

MISSOURI RULE AS TO BURDEN OF PROOF OF INSANITY.—The supreme court of Missouri holds, in the case of *State v. Wright*, decided June 2, 1896, that the burden is on a defendant who interposes a plea of insanity to sustain that defense to the reasonable satisfaction of the jury. It says that it is in the nature of a plea of confession and avoidance. It confesses the homicide, but denies the crime of it. The court also holds that a medical expert was very

properly permitted to give his opinion respecting the sanity or insanity of the defendant, having for a basis the hypothetical case, together with what he had learned from an examination of the defendant.—*Medical Review*.

INSANE DELUSIONS.—It may be said that both the English and the American courts, by a long line of decisions, have established the rule of law to be that, the presence or absence of delusion in the mind of the subject was the true criterion of the presence or absence of insanity in any case: *Dew v. Clark*, 3 Add. Ecc., 79; *Wheeler v. Anderson*, 3 Hagg Ecc., 574; *McElroy's Case*, 6 W. & S., 451; *Am. Seaman's Fund. Soc. v. Hopper*, 33 N. Y., 619; *Duffield v. Morris*, 2 Harr., 375; *Sutton v. Sadler*, 5 Harr., 459; *Frere v. Peacock*, 1 Rob. Rcc., 442; *Stanton v. Wetherwax*, 16 Barb., 259; *Mullin v. Cottrell*, 41 Miss., 291; *Buswell on Insanity*, § 14; *Forman's Will* 54 Bar., 274.

The courts have made exceptions to this general rule, where "delusion" is not the criterion: 1. Insanity congenital "*ex nativitate*." 2. Cases where the mind has become enfeebled, weakened, or disorganized, due to disease, or to the gradual development of senile dementia. The law now recognizes insanity as existing in certain cases without delusions: *Nichols v. Binns*, 1 Sw. & Tr., 239; *Am. Seam. Fund. v. Hopper*, 33 N. Y., 619; *Regina v. Shaw*, L. R. I. C. C., 145; *Buswell on Insanity*, § 16. (*Ib.*, p. 728.)—*Clark Bell, Esq., Medico-Legal Journal*.

MONOMANIA.—THE TERM SHOULD NOT BE EMPLOYED.—The use of the term *monomania* is misleading and improper. That term among judges, lawyers and lexicographers has been understood to mean derangement concerning a single faculty of the mind, or with regard to a particular subject only, as defined by Webster. This has had judicial construction in the courts. Legally, *monomania* has been held to exist where the mind is deranged upon one subject, the insanity relating to one delusion, and retaining the other intellectual powers. It excuses only when this delusion leads to an insane impulse, which controls the will and judgment, obliterates the understanding of right and wrong,

and results in the commission of an act which the accused was unable to resist, or to refrain from, and yielded to its domination: *Stevens v. State*, 31 Ind., 485; *State v. Johnson*, 40 Conn., 136; *Com. v. Rogers*, 47 Mass. (7 Metc.), 500; s. c. 1 Lead C. C., 94; *Brailly v. State*, 31 Ind., 492; *Com. v. Haskell*, 2 Brewster (Pa.), 401; *Com. v. Frith*, 5 Clark (Pa. L. J.), 455; *Life Ins. Co. v. Teny.*, 21 U. S. (15 Wall.), 580; on 21 L. Ed., 326; *United States v. Hewson*, 7 Bost L. R., 361; *Span. v. States*, 47 Ga., 553; *Roberts v. State*, 3 Ga., 310; *Hopps v. People*, 31 Me., 385; *State v. Felter*, 25 Iowa, 67; *Wesley v. State*, 37 Miss., 327; *Scott v. Commonwealth*, 4 Met. (Ky.), 227; and as to responsibility: *Com. v. Mosier*, 4 Pa. St., 264; *State v. Huling*, 21 Mo., 464; *Royce v. Smith*, 9 Gratt. (Va.), 704; *Rex. v. Offord*, 5 Carr. & P., 168; *Willis v. People*, 5 Park, Crim. R. (N. Y.), 621; *Reg. v. Burton*, 3 Fost. & F., 772; *Rex. v. Townley*, 3 Fost. & F., 839.

Among medical men and authors the term *monomania* means quite another thing, as was intended by Esquirol, its author, and so understood by all modern American, French, German and Italian scientists and writers. Its use is, therefore, misleading, and it is now generally abandoned by the better medical authorities for that reason: Vid. Article *Monomonia*, 2 Bell's *Medico-Legal Studies*, p. 101. Maudsley, Pliny Earl, and many writers and observers deny the existence of an insanity limited to one subject, leaving the brain normal and healthy on all other subjects. For these reasons the term *monomania* should not be longer employed by medico-legal writers or in text-books. (Ib., 729.)

NOTE.—Although courts have held that insanity may exist where there is only one specific delusion, and the manifestations are limited to that one subject, with the mind clear and unimpaired on all other subjects, based upon the opinions of medical men and popular belief, alienists of the highest attainments and largest experience deny such a condition, and they are undoubtedly correct. If the brain is diseased to such an extent as to produce a state of insanity in any respect, it is difficult to conclude that the subject is sane in all other respects. (Ib., 734.) CLARK BELL, *Medico-Legal Journal*.

CLINICAL PSYCHIATRY.

THE UVULA OF THE INSANE.—By examination of 108 insane patients, I discovered that in no less than fifty-three, or almost 50 per cent., deformities of the uvula were present. The commonest peculiarity was a twist to one side, about equally to the right or to the left, but a little oftener to the left side. The total number of patients with a twisted uvula was thirty-two, or not quite 31 per cent. The proportion was much greater in the degenerative forms of insanity, the number being nineteen among thirty-five cases, or over half, as against thirteen in sixty-nine cases of acquired insanity. Thus, just in proportion as the physical stigmata of degeneracy were more marked, the proportion of deformed uvula increased. Hypertrophy and elongation of the uvula were not abnormally frequent, and they were not commoner in the degenerative than in the non-degenerative types. Bifid-uvula was not found in any case. So far as sex is concerned, the proportion of twisted uvula in men was 32 per cent., and in women 29 per cent. I opine, from the results of this inquiry, the existence of a uvula twisted to one side and not innervated forms an anatomical and physiological stigma of degeneration. The twist or bend implies an unequal development of nerve-supply of the two sides, and the degenerate uvula is, as might be inferred, one that has an unequal and defective nerve-supply. In more than half of all degenerates the azygos uvulae does not act.—Doctor C. L. Dana in *Jour. Ner. and Mental Dis.*

NEURO-PHYSIOLOGY.

SECRETORY EXCITABILITY OF ALIMENTARY CANAL.—Dolinsky made a series of experiments on dogs carrying pancreas and stomach fistulas, which show that secretions of the pancreas are stimulated when the lining of the duodenum comes in contact with acids—diluted vinegar acid, mineral acids, lactic acid, or sour drinks; this circumstance also affects noticeably the secretion of the gastric juice. Alkaline liquids do not produce the same effect; nor do

neutral liquid foods when introduced without the knowledge of the animal. Special experiments with dogs which had, besides the two fistulas, an opening into the œsophagus, showed that the psychical effect of giving food, even when the animal was deceived with pretended food, was to excite the secretion of gastric juice, the hydrochloric acid of which stimulated in turn the secretion of the pancreas. Dolinsky considers these facts important in a teleologic sense, as the alkaline secretion of the pancreas neutralizes the acidity of the gastric juice. Fats also excite a reflex pancreatic secretion, and alcohol in a slighter degree.—*Centralblatt für Chirurgie.*

NEUROLOGY.

GLIOSIS IN EPILEPSY.—Dr. E. Blenler found, in the brains of 26 epileptics, a constant hypertrophy of the glia-fibers located between the pia and the most external, tangential nerve-fibers. The brains examined were of cases of marked epileptic dementia. Dr. Blenler afterward examined 54 brains of non-epileptic (51 insane and 3 mentally sound cases). In these cases no such gliosis was present. The picture was so characteristic that in all cases the sections of epileptic brains were recognized as such without the knowledge of the clinical diagnosis. In most of the cases of epilepsy the foramen magnum was found remarkably narrow. Whether the anatomical changes of the glia are consecutive to or accompanying the clinical picture of epilepsy, or perhaps the cause of it, cannot be determined. The writer, however, considers it probable that the gliosis sets in at least simultaneously with the beginning of the attacks, as the anatomical changes were not found greater after a longer than after a shorter duration of the disease.—*Munchener med. Wochenschr.*—Dr. Hoisholt's selection in *Occidental Medical Times.*

EDITORIAL.

[All Unsigned Editorials are written by the Editor.]

Smiling and Laughter in Epileptoid and Epileptic Disease.—The *Popular Science Monthly* contains the following reference to a case of this kind under the caption of "Laughter as a Symptom of Disease."

The patient, whose case was described before the Psychiatric and Neurological Society of Vienna, was 30 years of age and had been subject for three years to fits of laughter, which occurred at first every two or three months, gradually increasing in frequency to a dozen or more a day. The attacks occurred especially between 9 P. M. and 6:30 A. M. Some occurred also during the day, however the patient happened to be occupied. In the intervals between the attacks, and immediately before and afterward, the man appeared perfectly well. The attacks commenced with a tickling sensation arising from the toes of the left foot, and the patient would fall to the ground unless he could reach some place to lie down. When this feeling reached the level of the left nipple the patient lost consciousness for a few seconds. Often the patient lay upon his face. The mouth and eyes were closed spasmodically, the eyeballs turned upward; the pupils were dilated and unresponsive to light. At the height of the attack the patient at first smiled, and then laughed aloud without other sign of merriment. The entire attack occupied about two minutes. On two occasions there was protracted loss of consciousness.

Laughter followed by a chattering noise has, in our experience, once habitually preceded the more violent cry of a processive epilepsy ending in general convulsions and unconsciousness. And in a child now under our treatment a smile always precedes the daily recurring epileptoid seizures, which appear several times each day, as the child passes into temporary unconsciousness. This symptom is only a part of the symptom complex of epilepsy and epileptoid disease, akin to the precursory grimaces and sardonic laugh described by observers.

Hack Tuke Memorial.—The great respect in which the late Dr. D. Hack Tuke was held both in England and America has led to a generally expressed desire that his memory should be perpetuated in connection with the great work to which he devoted his life, viz.: the amelioration of the condition of the insane and the advancement of neurological and psychological medicine.

With a view of carrying out this object, a Committee has been appointed to solicit subscriptions in the United States and Canada.

The fund obtained will probably be used to found a library in connection with the British Medico-Psychological Association to which Dr. Tuke's personal library has already been given.

The Committee ventures to make an earnest appeal for subscriptions to carry out this worthy object.

Subscriptions may be sent to Dr. Chas. W. Pilgrim, Poughkeepsie, N. Y.; Dr. Chas. G. Hill, 317 North Charles St., Baltimore, Md.; or Dr. Frank C. Hoyt, Clarinda, Iowa.

Doctors Should Visit St. Louis.—The many Northwestern, Western and Southern physicians who come to the city in September and October to consult or place patients in the hands of specialists and all doctors going to the different medical conventions held at this season of the year, should make it a point to include a stoppage at St. Louis en route, to see the electrical and other interesting exhibits at the great St. Louis Exposition, thus combining diversion and pleasure with scientific acquisition.

The steady progress of St. Louis during these times of financial depression is the wonder of all people who visit her, as her financial stability and business prosperity is the admiration of the financial and business world. Her medical educational institutions with her splendid modern buildings and equipments and complete faculties are the equal of any in the United States, while her great Exposition is confessedly without a rival in any city of the American Union.

American Pharmacists.—It is gratifying to the medical profession to note the progress of so many pharmaceutical firms and to see them putting forth efforts to win further appreciation from the profession of their meritorious products and formulae and to see them giving the profession good goods while promoting their business interests. This is the true secret of success on the part of such firms as cater to professional countenance. The rivalry

among American wholesale pharmacists to make their respective specialties better than all others and to give intrinsic value to trade marks in medical manufacture is what has given American Pharmacy its world-wide and preeminent renown. We are glad to see it.

The "Indian Lancet" on the Hemp Habit.—

An editorial writer in the *Indian Lancet* makes the following comment on the use of hemp:

The charms of Indian hemp are unknown in England. The people there are still too robust a race, and prefer to drown their care in good old ale or its kindred. Yet if they only once experienced the delights of Hashish, which are to those of tobacco as Chartreuse is to gin, they would think more highly of the wisdom of life of the Orientals. In the East enormous quantities of the plant are consumed. In fact, although so little is heard about it, it runs neck and neck with opium. But in England it is never used except as a drug, and even doctors there have not yet become familiar with its use.

It is not a little interesting to read in the next paragraph the account of "the most extraordinarily pleasant effects" of this drug, which only the physicians of India thoroughly know. It is the well-known description of Dr. H. C. Wood of his own use of the drug. It is said that De Quincey found the greater part of his experience as an opium eater in his own imagination. Certainly an ecstatic intoxication from an American work on therapeutics has the advantage of no unpleasant after-effects and the *Lancet* might recommend Dr. Wood's account to its inexperienced British readers as a safe and cautious beginning.

When about to clip from our esteemed Indian contemporary the above interesting excerpt, it fell under our eye in the pages of another esteemed home contemporary with editorial comments which are of sufficient interest to accompany the item with our commendation.

Dr. John H. Callender, the eminent alienist and neurologist of Nashville, died on the 3d of August.

Name of South Carolina Asylum Changed.—

The South Carolina institution formerly known as the "State Lunatic Asylum" has had its name changed by law to the more euphonious one of "State Hospital for the Insane." A very proper change of name.

The American Electro-Therapeutic Association has done much for the progress and recognition of Electro-Therapeutics in the profession.

The annual meeting held in Boston, September 29th, 30th and October 1st., gave promise of a greater success than any former one, in both the scientific and social aspect. If you are concerned in the work of Electro-Therapeutics it will be to your interest and pleasure to be connected with this Association.

Sero-Therapy in Tuberculosis.—Dr. Paul Paquin of this city has given "The Experience of Several Physicians with Sero-Therapy in Tuberculosis, and a report of Cases," in a paper read by him May 7th, before the American Medical Association, at Atlanta, Ga. This contribution appeared in the *Journal of the American Medical Association* August 15th, 1896.

Paquin has thoroughly tested this antitoxine for a long period of time, and demonstrated its efficacy, and the results obtained by him are of such interest as to demand further professional consideration, and we take pleasure in calling attention to the article. Sero-Therapy in Tuberculosis is entitled to a place in therapeutics, and such experiences as Paquin's tend to awaken interest and confirm confidence.

Etiology of Hysteria.—An article with this title by Sigm. Freud has just been concluded in the *Wien. Klin. Rundsch.*, Nos. 22 to 26. He makes the grave assertion that hysteria, hysteric parasthesia or paraplegia, hysteric sensations, etc., and probably also paranoia, "compulsory ideas" and various psychoses, are all traceable to one cause, viz., conscious or unconscious memories of sexual occurrences in early childhood, and that the character of the neurosis is directly determined by the character of the sexual actions. The hysteria commences with an effort of the will to throw off some haunting idea; this idea is connected either logically or by association with some unconscious memory; this unconscious memory is invariably of one or more sexual occurrences dating perhaps from the earliest childhood. The hysteria usually develops after puberty, but in the severest cases it commences with unfailing regularity at the eighth year. The sexual events that preceded it date therefore, from a still earlier age, in some cases from the fourth, third or even the second year. In the eighth year, the period following the second dentition, the sexual system probably passes into another stage of development, as the same sexual events commencing or continuing after this period, have none of this pathogenic effect. Freud believes that the original instigation always proceeds from an adult. His statements are based on extensive clinical ex-

perience, and scrupulously careful investigations. He expects to meet with opposition and incredulity, until the pathogenic power of unconscious memories is more fully recognized than at present.

We extract this from the journal of the A. M. A. only to condemn the absurdity of such wildly conjectural, unproved and unprovable conclusions. Hysteria is a constitutional psycho-neuropathy with morbid impulses, caprices, delusions, hallucinations, and illusions, psychic and sensory. We see it displayed in the asexualized after oöphorectomy, in emasculated males, and in the sexually dormant, in men with psychical impotency and in women after the menopause. Besides the psychical perversions of hysteria, like its neurotic displays, are not always, as they certainly are not all, erotic or sexual.

The unconscious memories are conceded as pathogenic displays but not necessarily as pathogenic power, as claimed by this author. Hysterical displays appear in strongly predisposed to this neuropathic heritage at an extremely early age, even before the development of the genesic sense and contra-indicates the author's theory. The author is loose in his logic and faulty in his observations and conclusions.

Hysteria, whatever its exciting causes, whether in the premature or over sexual, grief, disappointment or other psycho-neural sources of depression and exhausting excitation, is usually bad neuropathic endowment, dormant at birth but ready—prepared like the lucifer match—for flame when rightly struck. Herr Sigmund Freud should try again.

The Medical Standard.—DR. JAMES G. KIERNAN, of Chicago, we regret to learn, has severed his connection with the *Standard* after an editorial service of nearly ten years. This is a great loss to the corps editorial. Kiernan is a fertile, fluent and preeminently well informed medical writer. The facts and force of his able pen will be sadly missed if he does not elsewhere resume his connection with medical journalism. Dr. Kiernan is also one of the ablest of our collaborators.

Fairchild's Pepsine Imitated.—In this connection we note that one of our most reliable wholesale manufacturing firms has been compelled to resort to the law to protect itself from the unfraternal crime of certain retail pharmacists who have been counterfeiting Fairchild's essence of Pepsine, an incomparable preparation which has justly earned the approbation and preference of all American physicians.

The profession owes Fairchild Brothers and Foster a

debt of everlasting gratitude for introducing to the American medical profession the best and most moderate priced scale pepsine and essence of pepsine extant. They are justly entitled to the high award of merit which they have now in universal professional approval and prescription. We hope this reliable firm that has been such a benefactor to the successful therapeutics of American clinicians, will run down and legally punish all who would ungratefully filch from them their good name. As for ourselves, we will discriminate in our patronage against any dispensing pharmacist who will substitute any other essence of pepsine for Fairchild's on our prescriptions.

Twelfth International Medical Congress, Moscow, 7 (19)—14 (26) August 1897. Section of Nervous and Mental Diseases. Committee of organization: Directors: Prof. A. Kojewnikow, Prof. S. Korsakow, Prof. W. Roth (Moscow). Members: Prof. J. Anfimow (Kharkow), Prof. W. Bechterew (St.-Petersburg), Prof. L. Darkschewitsch (Kasan), Prof. P. Kowalewski (Warsaw), Academ. J. Mierzejewski (St.-Petersburg), Prof. J. Orschanski (Kharkow), Prof. N. Popow (Kasan), Prof. M. Popow (Tomsk), Prof. Runeberg (Helsingfors), Prof. Sölan (Helsingfors), Prof. J. Sikorski (Kiew), Prof. W. Tschisch (Juriew), Prof. A. Stcherbak (Warsaw). Secretaries: Priv.-Doc. L. Miutor (Moscow), Priv.-Doc. W. Serbski (Moscow).

Dear Sir:—The Organization Committee of the Section of Nervous and Mental Diseases of the Twelfth International Medical Congress has the honour of inviting you to take a part in the works of the Section. According to § 17 of the XIIIth International Medical Congress Statute these works shall consist in the reading and discussing of papers, treating the programme questions, which we have fixed upon previously and in presenting articles on themes, which shall be chosen by the reporters at their own desire. The themes (six in number), which we have decided to inscribe on the programme, are as follows: Neuropathology: 1, Pathology of the Nerve Cell (Finest Structure and its Pathological Changes). 2, Pathological Anatomy and Pathogenesis of Syringomyelia. 3, Pathogenesis and Treatment of Tabes dorsualis. Psychiatry: 1, Obsessions and fixed-ideas. 2, Pathogenesis of General Paralysis of the Insane and Delimitation of this Disease from its Cognate Forms. 3, Hypnotism and Suggestion in their reference to Mental Diseases and Medical Jurisprudence. The question of the Surgical Treatment of the Brain and Spinal Cord Diseases will moreover be discussed by our Section in her united

sitting with the Surgical Section. The Committee has undertaken the charge of securing one or two introductory articles on each programme question. We should be very glad, most respected Colleague, if you would inform the Congress of the results of your investigations and observations, which have reference to the programme questions, or if you would present an article on some other question of the domain of Neuropathology or Psychiatry. We beg you to inform us of the title of your presumed paper, as soon as possible, because according to § 16 of the Twelfth International Medical Congress Statute, all the propositions which have reference to the activity of the Twelfth Congress are to be communicated to its Organization Committee not later than the 13th January 1897. Awaiting a favourable answer and expecting the pleasure of seeing you in Moscow, we remain yours faithfully, A. Kojewnikoff, S. Korsakoff, W. Roth, Directors of the Section, Moscow, 15 July 1896. Address: Russia, Moscow, Clinic of the Nervous Diseases.

Let Us Take Care of our Own.—The *Texas Medical News*, referring to two physicians of that State, candidates for election to the state legislature, and advising "the profession throughout the state should see to it that every physician who is a candidate for the next legislature is elected this fall", strikes the key note of the profession's welfare before the people. When a reputable physician will make the sacrifice, he should be sustained, for it is in the legislature, state and national, that the interests of all classes are best promoted. It is to the lack of medical men in the councils of state and nation that is due the comparative neglect of medical interests and the unjust degradation, compared with others less worthy of public esteem, of medical men.

Medical men are the peers of all others in public benefactions and no men in the world's affairs are superior in all around culture to the properly educated physician. He knows more of human nature and its needs than the theologian or philosopher, more of science than the lawyer, and often as much of literature as the average Literateur. Yet his calling compels self sacrifice and withdrawal from those places where men most do congregate and his influence is not felt as that of others is, because duty keeps him at a distant post of service. Monuments of bronze and marble are erected to statesmen, historians, poets, warriors, jurists, actors and philanthropists and when immortal remembrance is secured to all of these, then lastly the doctors are remembered by a

grateful people. It would not be so if physicians held place in legislative hall with lawyers, statesmen and politicians. The real benefactor would be the first to be commemorated. The names of Harvey and Jenner and Graves, Mc Dowell, Hunter, Hall and Beaumont would then be first enrolled and high as the highest "on fame's triumphal arch." And where is Benjamin Rush, America's first physician and statesman as well? No marble statue of this great physician and patriot reminds the people who may visit the nation's capital of the compatriot of Jefferson and Washington and Patrick Henry. Why? Because there have not been medical men in the nation's councils to take care that posthumous justice is done to our worthy medical names in American history; and McDowell and Morton, why have they no busts under the capitol's dome? no niche in America's temple of patriotism? For the same reason; for they were peers of any of the world's benefactors and names whose memories are so cherished by the world now that they need no ornaments to recall their virtues. But there was a time when a grateful nation should have remembered them in marble and they would have been so remembered at the capital had there been physicians as there have ever been other citizens in the councils of the capital.

The moral of this article is that medical men of means and leisure, retired physicians, owe it to their profession to go into politics and contend for political place and power with their fellow citizens.

With medical men in public office the rank of medical men in army and navy would be higher, a sanitorian would be deemed as important in the cabinet as a jurist. Medical merit would receive deserved recognition, the welfare of the people would be even more promoted than that of agriculture now is, and the interests of the profession would be enhanced before the people.

The New Paper Money is quite handsome in design and we note the faces of scores of dead patriots of the past, but where is the face of Dr. Benjamin Rush, signer of the Declaration, member of the Continental Congress and Surgeon General of the Continental army?

The Second Annual Meeting of the Association of Southern Hospitals for the Insane held at Battery Park Hotel, Asheville, N. C., beginning Wednesday, September 16th, 1896, and ending September 17th, was an interesting convocation of the clinical psychiatric talent of the south. The meetings were presided over and addressed by the

President, Charles G. Hill, M. D. An address of welcome was delivered by the mayor of Asheville and responded to by the President of the association.

Afternoon session at 3 P. M., papers were read by J. W. Trammell, Superintendent, State Asylum, Chattahoochie, Fla., on the "Maintenance and Management of Institutions for the Care of the Insane"; W. F. Drewry, M. D., Central Hospital, Petersburg, Va. on "The Thyroid Treatment of Insanity." The discussion of the "State Care of Chronic Insane" was opened by P. L. Murphy, M. D., Superintendent State Hospital, Morganton, N. C. "The Medication of the Insane" was the subject of a paper by E. D. Bondurant, M. D., Bryce Hospital, Tuscaloosa, Ala. The subject "Epileptics in Hospitals for the Insane" was presented by I. M. Taylor, M. D., State Hospital, Morganton, N. C. "Has Emancipation been Prejudicial to the Mental and Physical Health of the Negro" was discussed by J. F. Miller, M. D., Eastern Hospital, Goldsboro, N. C., and others. M. Campbell, M. D., superintendent Eastern Hospital, Knoxville, Tenn., contributed "Recent Observations in European Asylums," and the whole was concluded by a trip for members to Hot Springs after adjournment.

This association is doing good practical work for the advancement of clinical psychiatry in America.

How is this, Doctor Putnam?—You are reported in the *Boston Medical and Surgical Journal* as making the following remarkable statement concerning a new early sign of tabes: In a patient with tabes, it is often possible to flex the leg at the hip without bending the knee until the toe almost touches the ear, without producing the sense of painful tension in the popliteal space so speedily felt by one in health. This is not only an interesting feature of advanced cases, but is a valuable early diagnostic sign.

In the outstretched leg the toe is far from the ear even if the leg could be brought in close touch with the ear.

Illinois Eastern Hospital for the Insane, Hospital, Illinois.—The sample of the new examination forms shows an aim at scientific minuteness of detail not before attempted. These blanks are the outgrowth of about a year and a half's work under an unprinted outline and will materially serve to aid the medical profession in clinically studying their cases. Dr. Clarke Gapen, the accomplished superintendent, is making an effort in the right direction.

The Meeting of the Mississippi Valley Medical Association at St. Paul, Sept. 16-18, while not so large in point of number in attendance as was anticipated, was a scientific and social success.

The following officers were elected for the ensuing year: President, Dr. Thomas Hunt Stuckey, Louisville; First Vice-President, Dr. Chas. A. Wheaton, St. Paul; Second Vice-President, Dr. Paul Paquin, St. Louis; Secretary, Dr. H. W. Loeb, St. Louis; Treasurer, Dr. W. N. Wishard, Indianapolis.

Louisville was selected as the next place of meeting.

REVIEWS, BOOK NOTICES, ETC.

BOOKS AND REVIEWERS. The *Polyclinic* thus truly remarks on this subject:

Before and since the time of Byron, authors and critics have had occasion to differ. Miss Marie Corelli is one of the most recent examples in general literature of an author who asserts that personal considerations lead to the favorable or unfavorable notice of books more often than the merits or demerits of the work. These assertions, although they doubtless exaggerate and distort the facts, are not altogether unfounded. Similar assertions are sometimes made, and we are afraid, with more than a little truth, concerning notice of medical books.

Few medical journals nowadays do, indeed, review books in any true sense of the word. A longer or shorter "notice," more or less laudatory according to the influence of the publisher or the personal relations of the author with editor and reviewer, is the rule. Sometimes these notices are furnished by the publisher or author and the editor or his assistant is thus relieved alike of trouble and responsibility. Occasionally, however, a review or unusually lengthy notice of a particular book creeps in, and one can often detect therein an animus favorable or otherwise. As to the first, there is little to be said. "You tickle me and I'll tickle you," is a principle of action older than humanity; its first utterance may well have been from one of our batrachian ancestors. That the judgment of the profession is misrepresented, that buyers are misled into wasting their money on worthless trash, and that bubble reputations are given ephemeral life, is true, but these things time, at last, makes even. When, however, personal spite, often working in the dark, seeking cover under anonymity, is permitted to decry unjustly a meritorious work, or to harp only upon the faults of a work containing striking merits as well as striking faults, the editor who permits this should be held responsible before the bar of professional opinion. A critic has the right, is in duty bound, to warn against the errors, which he believes to be contained in the book given him to review, but he is likewise bound to point them out explicitly, not by insinuation, and he should never be ashamed to append his initials to an honest expression of honest opinion. Medical reviewing (we may say in parenthesis) has been largely overdone. Too much free advertising and too much valuable space has been given without compensation. This is not business, hence the discontinuance of lengthy reviews in this Journal, except where some interested reader wishes to discuss in extenso the merits of a particular book.

This change of policy, however, will not rule out the usual brief notices of new and meritorious publications sent us.

MEXICO UNDER X RAYS. A Work on Political Economy, by Col. W. F. Cloud, a veteran of the Mexican and late war.

The Tragedies, Revolutions and Evolutions connected with Mexico's Political History from Cortez, 1521, to Diaz, 1896, are graphically written up in chronological order with names and deeds of Mexico's Grand Statesmen and Patriots, and of her Demagogues and Spoilers. Data from Spanish Books and Records. Also a brief History of the War with the United States. 340 Pages, 12 mo. Illustrated. Cloth Bound \$1.00, 15 Cts. extra by Mail, Libraries, Schools, & C., 10 per cent. Discount. 1431 Harrison Street, Kansas City, Mo.

ANATOMICAL AND PATHOLOGICAL MODELS Manufactured by the Fuller Anatomical Co., Grand Rapids, Mich.

These casts are artistically colored, and are accompanied by beautifully engraved original plates, upon which are inscribed the names of the several parts, so that at a glance and without reference, the anatomy can be easily understood, and what has been produced by years of patient labor, can be acquired with very little effort and within a short time.

From a personal knowledge of these casts, we can recommend them to physicians and students as superior to anything else in this line ever brought to our notice.

RECHERCHES CLINIQUES & THERAPEUTIQUES SUR L'EPILEPSIE L'HYSTERIE ET L'IDIOTIE Compte rendu du service des enfants idiots, epileptique et arriérés de Bicêtre pour l'année 1895. Par Bourneville, Avec la collaboration de MM. Boncourt, Comte, Dardel, Dubarry, Leriche, Lombard, J. Noir, Pilliet, Ruel, Sollier et Tissier, internes ou anciens internes du service. Tome XIV. Un beau volume in-8° de Lxxi-254 pages, avec 31 figures et 8 planches hors texte.—Prix : 6 fr.

HYPEROSTOSIS CRANII with the Reports of Four New Cases; a Fifth Case Contributed by Dr. Morton Prince; and Photographs of a Specimen in the Army Medical Museum. By James J. Putman, M. D., of Boston. This is an especially valuable contribution to this rare and interesting subject. The paper is enriched with illustrations and enhanced by a complete reference appendix.

A TREATISE ON APPENDICITIS. By John B. Deaver, M. D., Surgeon to the German Hospital, Philadelphia. P. Blakiston, Son & Co., Publishers, 1012 Walnut Street, Philadelphia.

This book contains 32 full page plates and other illustrations, many of them colored. These and the good name of the author commend it to the surgeon.

Glioma of the Brain of Twenty-Seven Months Duration, Beginning in the Middle of the Left Rolandic Region, with Jacksonian Epilepsy, Infiltration of the Entire Frontal Lobe; Dementia; Aphasia; Late Operation; Death from Suppurative Meningitis. By J. T. Eskridge, M. D., Neurologist to Arapahoe County and St. Luke's Hospitals, Denver, Colo.

Clinical Observations upon the Use of Antitoxin in Diphtheria, and a Report of a Personal Investigation of this Treatment in the Principal Fever Hospitals of Europe during the Summer of 1895. By Joseph E. Winters, M. D., Professor of Diseases of Children, Medical Department, New York University, New York City.

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ORIGINAL CONTRIBUTIONS.

PSYCHICAL HERMAPHRODITISM.

**A Few Notes on Sexual Perversion, with
Two Clinical Cases of Sexual Inversion.**

By WILLIAM LEE HOWARD, M. D., Baltimore, Md.

THE poet says that some truths had better be kept behind the screen. This statement may be applicable to the writings of the poet, but the scientist wants the verity of life. The truth is, the evils are, with scarcely an exception, old. That which is new is the intelligence which discerns and the humanity which renders them. Sexual perversion has always played an important role in human life. Nor is it confined to the modern life alone. Few general practitioners realize the prevalence of distorted genetic instincts to day, or the important bearing it had on the life of the ancients. When this psychical condition is studied by the light of history we can congratulate ourselves that this vice, and often disease, is no longer a factor that can

be insiduously admitted as part of a nation's foibles or practices, or that it has any role in the life of the normal human being. The ancient history of vice and disease is as interesting to the scholar as its aetiology and pathology are to modern medical men.

The history of sexual perversion will be a source of pleasure to the optimist and instructing to the pessimist. Before coming to the clinical study of sexual perversion as we see it to-day let us take a cursory glance of the subject from an historical point of view. Von Krafft-Ebing* has ably shown the influence that sexual life exercises on religion, art and poetry. According to his statements there does not exist a real work of art without a sexual basis, and he has properly called attention to the fact that great poets and great artists, and I might add, great writers, are mostly of a sensual nature, and I will further indite, often this sensuality partakes of a perverted feeling. There are a large number of men that feel themselves attracted to other men and boys. This attraction for individuals of the same sex is designated under the name of homo-sexuality, in distinction to the term hetero-sexuality, which designates the normal attraction. The name Lesbian designates the love of woman for woman, and was used in this sense by Sappho. Westphal † employs the expression sexual perversion (*Contrare Sexualemfindung*) which allows of a greater latitude in dealing with the subject. Westphal's idea is that it is not always a question of deviation from the instinct itself, but of the sensations that make many an individual feel that his personality is entirely estranged from the sex to which he belongs. We will see this fact clearly demonstrated later on in one of my cases. This writer is also of the opinion that sexual perversion embraces also those cases in which, the sexual instinct remaining normal, the individual presents certain tendencies belonging to the opposite sex. It is well here to have a clear understanding between perversion and perversity. There is an incised and rigorous distinction, and as laid down by Krafft-Ebing it is as follows: "We speak of perversion when the sexual instinct is a perverted instinct, while we speak of per-

* Psychopathia Sexualis.

† Arch. für Psychiatrie, II, page 74.

versity when it is a question of a perverse action, without taking into account the motive that has determined that action, whether it be a perverse inclination or any other motive, a criminal action for example." Perversion is an inclination independent of the will, and for which no one can be held responsible, at least in the eyes of an impartial judge; on the contrary, perversity, which is manifested in the action, must often be placed to the account of the individual.

Pederasty is often used by modern writers when speaking of homo-sexual love, but this is incorrect so far as it only relates to the act which involves *imissio penis in anum*. Pederasty comes from *païods erastes*, "lover of boys;" and it is by this term that the ancient Greeks designated, in a general way, whether the sexual act was involved or not, lovers of boys and young men.

Sexual perversion exists to-day to a much greater extent than the general practitioner realizes. A proper understanding of this abnormal condition is of great scientific importance and medico-legal interest. The medical man who has a clear understanding and conception of the psychological conditions governing the mental and physical attitudes of these perverts and inverts, who is known to understand their morbid desires, and appreciates their moral palsy, will be astonished at the number which will seek him for relief. I do not refer to the vicious, to the morally depraved, to the male prostitute, to that class which comes under police notice, or to the degenerate whose actions are decidedly anti-social. Space prevents me from showing where the rigorous line should be drawn between these banal and vicious classes and the unfortunate psychical pervert. It is certain that in sexual perversion we have to deal with well-defined pathological phenomena occurring under conditions that vary only in circumstances and environments, which have always existed at all periods and in all countries. Natural laws govern all the phenomena from the first appearance of sexual life, through its various phases to decadence. A close study of the history of cases will show analogies which will convince the most skeptical. The invert and the

pervert is to be found among the aesthetic class. A marked feature of this anomaly is the precocity of the sexual instinct. Ninety per cent. of these abnormal individuals are engaged in artistic pursuits. They are found among the painters, musicians, poets, and the writers of erotic fulmination. Among Havelock Ellis' thirty-three cases, two were physicians. Female perverts depart to a greater degree from the normal than do the male. There are more female perverts than inverters in my experience. These cases of true sexual perversion, can seldom, if ever, be seen in hospitals and dispensaries. (I use the word pervert to cover all abnormal sexual desires, while invert is strictly applied to designate the love of one sex for an individual of the same sex. In speaking in a general way of the subject, perversion covers all cases). The practitioner, while he may have them in his office to be treated for some extraneous trouble, will not often be made the confidant of the pervert. These individuals are secretive, reserved and obmutescent. As they recognize the fact that unless understood they will be avoided, shunned with disgust, and finally met with social degrading, it is not strange that their abnormality is seldom recognized except by those of similar psychical desires, and to the specialist, with whom they are pitifully frank, honest and hopefully confident. The genital organs of the pervert are almost without an exception normal in appearance and function. The condition of these individuals is a decided psychical morbid entity. Some of them do not realize that their passions, desires and thoughts are abnormal. It is not easy to appreciate the *rôle* that external impressions and accidental environments have played in the individual development of these cases. I do not believe that true inversion is ever an acquired condition; it is congenital. I will not here go into this interesting branch of the subject, but will give fully the history of two cases in which I have been able to get at definite basis of facts as regards heredity. The first case I requested to write out for me, in his own words, his history, physical condition, and mental attitude

and desires. This will better enable us to understand the moral status of these unfortunates.

CASE I.—H. W. F., I am thirty years old. Ever since I was a small boy of eight or nine I have practised the habit of self-abuse. For many years I had no idea that it was wrong or injurious; when my eyes were opened I loathed myself, and have had no self-respect. I have honestly resolved time and again to break this habit. One summer, four or five years ago, I remember how earnestly I tried to refrain, and was most miserable. I had nocturnal emissions, which proved far more weakening than the indulgence; had a cough, was melancholy and despondent. I never had advice, I have simply drawn my own inferences; my experience taught me that I could not overcome the habit unaided. I could not then, and doubt if I could now, go to my doctor and tell him what I write for you. To-day I transgress more than ever; the result: I have never weighed as much; eat well. I sleep about nine hours nightly, and have very few spells of that awful despondency. I believe that I have a goodly amount of conscientiousness. I loath the practice, but somehow there seems to be a hungering, burning desire, crying for appeasement so loudly that the voice of reason is drowned. It seems almost as if I had two beings. When I am my rational self I say to myself "the right is well-defined; the proper course is simple," but when the fit is upon me, there seems to be only one word, **MUST**. It must be gratified regardless of consequences. The object of my imagination is man. I suppose that men who practice this habit have as the idol of their imagination woman. But it is not so with me. I think that I have the same regard for men as a healthy man has for woman. I have loved men passionately. I idolize them. Any licentious thought in regard to such I regard as a sacrilege. That love is just as real to me as the love of a young man for a woman, though my better self would tell me how preposterous it was; yet I seem incapable of any other. I can define my disposition no better than to say that I seem to be a female in a perfectly formed male body, for, so far as I know, I am a well-formed man, capable of performing all of man's functions sexually. Yet as far back as I can remember, surely as young as five years, I seemed to have the strongest possible desire to be a girl, and used to wonder if by some peculiar magic I might not be transformed. I played with dolls; girls were my companions; their tastes were my tastes; music, flowers and millinery interested me and do

to this day. I have had little sympathy with boys or men. It has always been a topic for thought and speculation, the abnormal development of man. Any such thought or conversation kindles the fire of passion in my brain. My love for a woman is the same that I have for a work of art; for a statue. I believe that Venus herself would not excite a bit of emotion in me. Yet a handsome man throws me into a passionate and emotional fit. In the romances that I draw for myself I always picture myself as a beautiful girl. This is not a forced imagination; such dreams and fancies come uncalled for in my mind. My childhood was loveless, and I often used to reason that I longed for love and sympathy. When I first heard that twins were born I wondered if I had not lost my mate, such was that ever present longing. In my mother's family there were four girls and one boy. He was connected with many women; having three wives, all living. He was very erratic. Of the four girls, two never had children, though married young. The husband of one of them told me that his wife could never have children. I have two sisters and one brother; both sisters married over twenty years and childless. Their doctor told me that neither of them could have children. My mother died when I was six years old. My father was addicted to the morphine habit, and wished to be left alone. Yes; I love man in the sexual sense; unsatisfactorily? not wholly so; but the voice that haunts, the fire that burns, are stilled and quenched for the time, but only for a time. Men who have known men thus extraordinarily favored are common. * * * When I see some men my face flushes; I tremble; my voice seems unsteady and harsh; the nerve strain is acute; only by a mighty effort do I keep a semblance of coolness. * * * Should I meet a man who said that he was the favored one I would throw discretion to the winds; I'll follow impulse regardless of consequences, though I should lose my position and be forever disgraced. Indulgence will restore me quickly to my mental equilibrium. I desire to have the penis placed where the female organ would be if it existed. * * * I wanted to be an artist but the opposition was greater than the determination. I now paint and design during my leisure moments. The quality of my voice has been so frequently remarked as to annoy me. I have quite a strong falsetto voice of considerable compass. I once knew a man who would entice boys to his room and expose himself and fondle them. I have no desire that way. I desire only handsome and robust men. I do not think that I

look twice at a man wholly shaven. I do not always entertain lascivious thoughts toward them, I feel if I could only caress, kiss and "love" them it would be the acme of happiness.

We see in this case a peculiar congenital condition, which differs from the generally conceived idea of a sexual pervert, in the fact that the idea of sodomy (*immissio penis in anum*) is repulsive. This condition was first pointed out by Casper in the *Vierteljahrsschrift* in 1852. We also have in F's statement the idea and suggestion of a female soul in a male body. This phantasy (*anima muliebris in copore virili inclusa*) is an old one, first expressed by Carl Heinrich Ulrich, but is an original conception with F; of this I am reasonably certain. Such a specious explanation, while it satisfies the psychical longings of the pervert, has no scientific psychological basis.

CASE II.—Mr. W.: age 38 years; occupation, artist; referred to me by Dr. C. G. Chaddock, of St. Louis, Mo. His father was a prominent physician who died when W. was about twenty years of age. He had been a hard drinker; and during the latter part of his life was addicted to taking large doses of chloral, and died in an insane asylum. W.'s mother died of paresis when W. was an infant. A brother is a steady drinker, and another died insane. He has reasons to believe that one of his sisters is a victim of sexual disturbances. In fact we have a history of a family endowed with superior mental capacity yet exhibiting lycanthropic stigmata throughout its whole existence and personnel. When W. was about eight years of age the question of sex differentiation arose in his mind, and he questioned his father regarding the subject. He was erroneously informed that there was no difference, and from this misleading and injudicious instruction W. dates back the psychical twist in his sexual character. At school he practiced mutual masturbation, but went no further in physical contact with his schoolmates. He has never had any normal intercourse with, or mental pictures of women or girls. So foreign to him is the ordinary attraction of women to men that he expresses no desire to be placed in such a mental condition as to realize this attraction. He wishes to be relieved from a very depressing and annoying nervous irritation which inevitably culminates in excessive masturbation, and is accompanied by salacious thoughts regarding those of his

own sex. These attacks occur at intervals of about four weeks, an interesting pathological fact, and immediately cease after he has manually relieved himself. For several days preceding this psychical explosion he is a different person; irritable, unable to rest or sleep, and oblivious to his other personality.

We have here a disordinated condition of the mind, or what Prof. Newbold calls an "amorphous mind," the disordination producing an imperative and uncontrollable desire to masturbate; the impulse to act being forcibly accentuated by hallucinations regarding the male genital organs. During these periods he has no clear consciousness of the existence of his normal body, or rather no lucid consciousness belonging to that body. When he is W. he realizes that he is a man, and has all the habits and instincts of a man aside from sexual desires, which are then negative. When in this condition, if he has any sexual suggestions, auto or otherwise, he is transformed psychically into the opposite sex. This derangement of personality, with sexual inversion as its motif, I do not remember having ever met with before. It offers a new field for studies which involve the most perplexing of psychological and physiological problems.

Treatment.—There is but little to be said regarding the treatment of the true sexual pervert. As I have stated the condition is a congenital one. In the two cases given above, and in several others, I have been able to abolish the habit of masturbation, subdue the intense despondency, and suppress hysterical tendencies, by the use of hypnotic suggestion. This mode of treatment has brought about a better physical and mental condition, and aside from the inverted sensibility, but which now partakes more of the social and sentimental aspect, the patients are well and resignedly contented. Drug medication in these cases is absolutely useless. Suggestion, avoidance of surroundings which are apt to produce emotional feelings; such as music, art galleries or the theatre, and substantial but nourishing diet is all that can be done; and this only with the idea of keeping them free from vicious habits and placing them in a condition of mental equilibrium, although they still remain psychically inverted.

Preputial Reflex Epileptiform Convulsions, with Report of a Case.

By ALEX. L. HODGDON, M. D.,

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PHIMOSIS, of course, is only one of the many sources of reflex epileptiform convulsions. A tooth forcing its way through the gums, causing pressure on the sensitive nerve filaments; a splinter imbedded in the finger exerting deleterious nerve irritation, or an unaccommodated eye with its resultant irritant action, might all produce these reflex, epileptiform convulsions, or shall I not say the beginning of true epilepsy? And it seems doubtful if all epilepsies are not in a way reflex, from the irritable gastric nerves, constituting gastric epilepsy, to the tumor, causing irritation by pressure on some one or several of the functioning centers of the brain, and by the resulting symptoms indicating their locality. Gray very aptly, and I believe truly, says that Epilepsy is only a symptom.* "Our conception of epilepsy will be altered, if at the outset we recognize the indubitable fact that epilepsy is but a symptom, just as is a cough or fever, so that epilepsies may be divided into those that are due to recognizable organic disease, those that are reflex and those that we may call idiopathic." If due to some irritant which may be removed, why not very carefully try to prevent further convulsions in the teething infant, and circumcise the epileptic infant with phimosis, for there must be a beginning to everything finite, and by removing sources of irritation you may prevent the formation of a permanent

*"Nervous and Mental Diseases." Gray.

lesion, or an intangible condition, such as habit epilepsy, both of which may in the end terminate the life of the epileptic, lapse into epileptic mania, and may finally follow the subject to his grave. We have somewhat of an illustration of this habit epilepsy in the rigor of malaria, those paroxysms which continue after the miasm has been removed from the system, which are dispelled, in some instances, by a mental impression, such as turning back the hands of the clock, till after the usual time for the chill; only the malarial paroxysms do not seem to produce a permanent change in the function of the nerve tissue, which may occur in epilepsy. May we not possibly by administering proper doses of bromide of soda to the teething infant, and by circumcising the child with phimosis, prevent a life-time of misery? These matters should be attended to, and it would be well if all male infants were circumcised within the first month after birth, taking care to cut off all the skin that covers the head of the penis, so as to leave it completely uncovered, and so that no part of the head can be made to remain covered. If this were done it would prevent the occurrence of phimosis in the future, even if not present at that time. About the only objections that have been urged against cutting off the foreskin, is that it leaves the sensitive head of the penis constantly exposed to friction against the clothing and other rough articles, and another objection made is that the exposure to friction decreases to a certain extent the sensibility of this very sensitive head. It does come in contact with the clothing, after circumcision has been performed, but after some time, the mucous membrane of the glans penis becomes toughened and thicker, and so far as the decrease in sensibility is concerned, this is an advantage, as the act of coitus is prolonged, the glands of Tyson situated near the corona dry up, so that the glans penis of the circumcised individual remains dry and clean. I have performed the operation of circumcision many times, and have seen cases which have been operated upon by some inexperienced operators, which were about as badly off after the operation as before, on account of not having

removed enough skin. One should not operate on persons afflicted with hæmophilia, unless the risk incurred from not operating, were greater than that from an operation. Kobelt has said that the glans penis is not exceeded in richness of nerves by any other part of the economy not excepting the organs of sense, and if so, is it any wonder if reflex epileptic convulsions occur in the case of the infant or adult afflicted with phimosis, with a quantity of smegma imbedded under the foreskin, on the delicate surface of the glans, which cannot be wiped off because the foreskin cannot be retracted, and is it not a wonder that trouble does not ensue in more cases? The case which I will report is that of W. T., aged, nearly four months, who had suffered since one month of age from epilepsy, having had a convulsion nearly every day, and has also exhibited a great deal of irritability, which he manifested by frequent attacks of crying. Upon inquiry I found that his urine had always passed away in drops, and dribbled away very slowly, also that he was passing considerable mucous by the anus. When I examined him, I found a very small preputial orifice, and was led to conclude that the convulsions from which he had suffered, were probably reflex. As he had suffered from about three or four convulsions on the day when I first saw him, I resolved not to delay operating till the following day, but circumcised him that night. Since the operation of circumcision was performed he has passed his water without difficulty, and his feces appeared more natural. I circumcised him Saturday night, and he had no convulsions on Sunday, but Monday afternoon he had three or four convulsions and a temperature of about $102\frac{1}{2}^{\circ}$ Fah. I gave a little Bromide of Soda and Acetanilide, also small doses of Quinine Sulphate. On Tuesday the temperature was about 101° , and on Wednesday his temperature was normal. He has not had a convulsion since Monday, and seems to be very quiet and good-natured. It has been a long time since he was operated upon, and I have not heard of his having a convulsion since two days after he was circumcised.

On Intemperance, Consanguine Marriages and Educational Overpressure, as Factors in the Genesis of Nerve Disease and Degeneration of the Race.*

By SIR FREDÉRIC BATEMAN, M. D., LL. D., F. R. C. P.

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THERE are few subjects that for some years past have so much engrossed the public mind, as those included in the title of this communication. I propose considering how far degeneration of the nervous system may be caused, directly or indirectly (that is in the individual himself or in his offspring, but especially in the latter) by Intemperance, Consanguine Marriages and Overpressure in Education. Let me say, *in limine*, that the effects of each of these causes have, in my opinion, been greatly exaggerated, and it is with the view of arriving at a correct estimate of the effects of each of the above causes of degeneration of nerve tissue, that I desire to bring my views before the New York Medico-Legal Society, feeling that there is no better arena for arriving at a satisfactory conclusion upon a subject alike interesting to the legal and medical profession.

It is essentially a practical subject, and the practical experience of the members of the Medico-Legal Society will be extremely useful in aiding a settlement of the much vexed question as to how far the above-mentioned causes

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are responsible for the widely spread neurotic degeneration characterizing the close of the nineteenth century.

Let me begin with Intemperance, which was said, I believe, by the late chairman of the English Board of Lunacy, Lord Shaftesbury, to be the cause of fifty per cent. of all cases of insanity. I need not say that this statement is not endorsed by those most competent to form an opinion on the subject. The part which alcohol plays in the production of insanity, has for some time occupied the attention of the alienist physicians, and has frequently been the subject of discussion at various scientific associations, the result of which is that Lord Shaftesbury's fifty per cent. has been reduced to fourteen per cent., and by some observers to even a lower figure. Doubtless many cases are stated as due to the abuse of alcoholic stimulants, where some other distinct influence co-existed.

In France, M. Lunier, Inspector of Asylums, has shown that the departments in which the consumption of alcohol had increased most, were those in which there had been a corresponding increase of insanity, and this was shown most strikingly in regard to women, at the period when the natural wines of the country gave way to the consumption of spirits.

In Sweden, Dr. Westfelt has lately made a communication to the Stockholm Medical Society, containing the statistics of alcoholic abuse and its results in Sweden. He calculates that at least from seven to twelve or thirteen per cent. among males, and from one to two per cent. among females, of all cases of acquired insanity, are due to the abuse of alcohol; and in reference to its influence on progeny and race, he shows that a steady diminution of the population was coincident with a period when drunkenness was at its greatest height.

I now arrive at the consideration of how far intemperance in parents may cause nerve degeneration in their offspring, and this is a question upon which, perhaps, more definite and reliable conclusions can be formed. The subject as to how far intemperance in parents injuriously effect their progeny was prominently brought before the

British Medical Association a few years ago, by Dr. Fletcher Beach, and there is a general consensus of opinion that the abuse of alcoholic stimulants—mark, I do not say the *proper use* of alcoholic stimulants—tends to bring families into a low and feeble condition, which thus becomes a prolific cause of idiocy in their children. From a report on idiocy, by Dr. Howe and other Commissioners appointed by the Governor of Massachusetts to ascertain the causes of this calamity in that State, it is stated that “out of 359 idiots, the condition of whose progenitors was ascertained, ninety-nine were the children of inveterate drunkards”; and the report goes on to say further, that when the parents were not actually habitual drunkards, yet amongst the idiots of the lower class, not one quarter of the parents could be considered as temperate persons. From the table drawn up by the late Dr. Kerlin, an American physician, in which the causes of the infirmity are given in 100 cases of idiotic children, I observe that in thirty-eight of the number, intemperance on the part of the parents is traced as an accessory, main, direct, or indirect cause.

At the annual meeting of the British Medical Association, held at Cambridge, Dr. Fletcher Beach read a paper on the “Intemperance of Parents as a Predisposing Cause of Idiocy in Children.” In 430 patients, he was enabled to trace a history of parental intemperance in 138 cases, or 31.6 per cent.; of this number seventy-two were males and sixty-six females.”

Other observers lay less stress upon parental intemperance as a cause of idiocy. Dr. Wilbur found that out of 365 cases in the State of Illinois, only eight cases were assigned to the abuse of drink in the parents; and Dr. Shuttleworth could trace this cause in only 16.38 per cent. of the cases observed by himself and by Dr. Fletcher Beach;* the same writer under the head of toxic idiocy, mentions the case of an idiot boy, who was said to have been brought up on porter instead of milk. It will therefore be seen that there exists a great difference of opinion

* “Mentally-deficient Children, their Treatment and Training.” By G. E. Shuttleworth, M. D. Page 36.

about the influence of intemperance of the parents in the causation of idiocy; but although statistics may vary upon this point, there cannot be a doubt that the children of drunken parents inherit an unhealthy system, which in many cases culminates in idiocy.

Idiocy is especially prevalent in Norway, and Ludwig Dahl, a Norwegian writer, says that to the abuse of brandy, especially in the fathers, but also in the mothers during pregnancy, may be assigned an important, perhaps the most important, influence in the production of the large number of idiots in that country.

In considering this question, we must bear in mind that intemperance is only a relative term; for in the early part of the century we read of our ancestors indulging in a bottle of port wine to each individual, without, it seems, incurring the charge of drunkenness. There cannot be a doubt, however, that the habitual use of alcohol, without being carried to the extent of actual intoxication, is calculated to cause a low and feeble condition of the body, and thus conduce to the production of idiocy in the offspring; for we may fairly assume that what too severely tries the nervous system in one generation will appear in their descendants.* Without, therefore, exaggerating the influence of alcohol on the genesis of idiocy, I think I shall not be deviating from the path of strict scientific accuracy, if I say that over indulgence in alcoholic beverages is calculated to produce a low state of vitality, and a degeneration of nerve tissue which may culminate in the development of idiocy in subsequent generations.

Just now that the attention of the Legislature is being prominently called to the treatment of habitual drunkards, it cannot be too widely known that their innocent offspring are but too frequently the victims of the brutish excesses of their parents, who, a few years ago, were well described by the then Secretary of State for the Home Department,

*Toussenet, a French writer says, "La plupart des Idiots sont des enfants procréés dans l'ivresse bacchique. On sait que les enfants se ressentant généralement de l'influence passionnelle qui a présidé à leur conception."

At a discussion at the Obstetrical Society, Dr. Langdon Down is reported to have entertained similar views.

when receiving a deputation on the subject, as not quite criminals nor quite lunatics, although nearly approaching both classes in many cases. The above statistics fully corroborate the pertinency of Lord Cross' remarks.

I do not allude to these facts with the view of casting any reflection upon the poor, honest, and temperate laborer, who may be afflicted with the calamity of having an idiot child; but I merely mention them in order that they may serve as an additional caution against habits of intemperance, and may strengthen the hands of that noble band of philanthropists who are endeavoring to check the torrents of this hideous vice so prevalent in the present day.

I would refer those who may wish to pursue the inquiry as to the baneful influence of alcohol on the human frame, to the celebrated Cantor Lectures on Alcohol, by my friend Sir B. W. Richardson, in which he introduces the physiological argument into the temperance cause, asserting that alcohol cannot be classified as a food; that degeneration of tissues is produced, that it neither supplies matter for construction nor production of heat, but, on the contrary, militates against both.

Consanguine Marriages.—There is no point connected with the causation of degeneration of the nervous system that has given rise to so much controversy as the marriage of near relations; formerly one of the most popular notions was that consanguineous marriages were among the most common causes of idiocy, whereas the researches of later observers have tended to modify, to a considerable extent, this sweeping assertion.

Different observers have furnished different results, as to the proportion of idiots found to be the offspring of consanguine marriages; thus Dr. Grabham's statistics give the proportion as about two per cent., Dr. Langdon Down's rather more than five per cent., and Dr. Shuttleworth's less than five per cent. The statistics of the Eastern Counties' Asylum, kindly supplied to me by Mr. Turner, the Resident Superintendent, show that about 6.5 per cent. were the offspring of cousins.

Of 359 cases observed by Dr. Howe, seventeen were

known to be the children of parents nearly related in blood. The history of these seventeen families, the heads of which being blood relatives intermarried, showed that there were other causes to increase the chances of an infirm offspring, besides that of intermarriages, as most of the parents were intemperate or scrofulous; some were both the one and the other. There were born unto them ninety-five children, of whom forty-four were idiotic, twelve others were scrofulous and puny, one was deaf, and one was a dwarf! In one family of eight children, five were idiotic.*

That eminent clinical observer, the late Professor Trousseau,† in treating of the influence of consanguine marriages, gives the history of a Neapolitan family, in which an uncle married his niece. There had previously been no hereditary disease in the family; of the four children, the issue of this marriage, the eldest daughter was very eccentric; the second child, a boy, was epileptic; the third child very intelligent; and the fourth was an idiot and epileptic.

Dr. Ireland, who has investigated this point with great minuteness, pertinently remarks that it has been the custom to collect instances of cousins who have married, and have had unhealthy children, as if this never happened to anyone else; and he adds that "the proper way to examine the question clearly is to find what is the proportion of marriages of blood relations in a given population, and then to inquire if there be in the issue of such marriages a larger percentage of insane, idiotic, or otherwise unhealthy children."‡

There cannot be a doubt that consanguinity has hitherto been considered too great a factor in the production of idiocy, and that in weighing the evidence, we must not lose sight of the fact that in many cases recorded, other factors besides intermarriage of relatives have contributed concurrently to the development of the mental defect.

Educational Overpressure.—I now proceed to consider a

* "On the Causes of Idiocy." By S. G. Howe, M. D. Page 35.

† *Clinique Médicale de l'Hotel-Dieu de Paris.*

‡ "On Idiocy and Imbecility." By W. W. Ireland, M. D. Page 19

cause of social degeneration, which is attracting much notice at the present day, especially amongst English-speaking people, which has been pointed out by Dr. Séguin, and which he says is due to the unsatisfactory social conditions under which women of the present day exist. "As soon," he says, "as women assumed the anxieties pertaining to both sexes, they gave birth to children whose like had hardly been met with thirty years ago.*"

Great prominence has lately been given to this subject by an oration on "Sex in Education," by Sir James Crichton Browne, at the Medical Society of London, in which he called attention to the "growing tendency to ignore intellectual distinction between the sexes, to assimilate the education of girls to that of boys, and to throw men and women into industrial competition in every walk of life." Elsewhere, he adds, that "to throw women into competition with men is to insure to them a largely increased liability to organic nervous disease. . . . Woe befall the generation that springs from mothers amongst whom gross nervous degenerations abound." Sir J. C. Browne supports his views by showing that there are organic cerebral differences between men and women, and that therefore they must be educated in different ways, being destined to play different parts in the stage of human life.

Sir J. C. Browne, in speaking of the brain of men and women, says there can be no question of inferiority or superiority between them any more than there can be between a telescope and a microscope; but they are differentiated from each other in structure and function, and fitted to do different kinds of work in the world. He maintains that the weight of the brain is less in women than in men, that the specific gravity of the gray matter is less, that the distribution of the blood varies in the two sexes to a considerable extent, and that the blood going to the female brain is somewhat poorer in quality than that going to the male brain, and contains four millions and a half

* "New Facts and Remarks Concerning Idiocy," by E. Séguin, M. D. Page 28. New York, 1870, page 19.

corpuscles to the cubic millimetre, instead of five millions in the case of the male.

The above views of Sir J. C. Browne have not remained unchallenged, and the eminent psychologist has found uncompromising opponents in Mrs. Garrett Anderson and others, who stoutly refuse to recognize the position of the "*Tacens et placens uxor*" of old-time dreams. Mrs. Anderson, who, I need scarcely add, writes most temperately upon this matter, in alluding to Sir J. C. Browne's assumption of the intellectual difference between men and women, remarks: "All I would venture to say is that, if it could be proved that an average man differs from an average woman as much as Newton differed from a cretin, it would still be well to give the cretin all the training which he was capable of receiving. . . . When we hear it said that women will cease to be womanly if they enter professions or occasionally vote in parliamentary elections, we think that those who conjure up these terrors should try to understand women better, and should rid themselves of the habit of being frightened about nothing."

It seems that one of her own sex is of a different opinion to Mrs. Anderson, as in a series of articles in the "*Nineteenth Century*" for 1891 and 1892, Mrs. Lynn Linton strongly deprecates any departure from the comparatively restricted area of usefulness hitherto open to women, and she even boldly states that it is for maternity that women primarily exist! She also adds, "be it pleasant or unpleasant, it is none the less an absolute truth—the *raison d'être* of a woman is maternity . . . the cradle lies across the door of the polling booth and bars the way to the senate."

The controversy is continued in the same serial by Mrs. Mona Caird, who in a powerful article, entitled "Defense of the So-called Wild Women," severely criticises Mrs. Lynn Linton's views as to the restrictions she would impose upon the freedom of women to choose their own career.

The limits of this essay will not permit me to dwell at any great length on the important question under consideration. There cannot be a doubt that the tendency of

the present age is to encourage women to choose careers and to accept burdens unfitted for them. In thus expressing myself, I distinctly deprecate any hostility to the woman's movement at the present day, which rests on the claim for women for an open career; and I should be glad to see our universities ignore the ancient and exploded prejudices, which led to long subjection of women to hardship and inequality. They ask for the same facilities as are enjoyed by men, and they have amply shown that they can compete with men in intellectual pursuits, and all they ask is to be allowed to compete on equal terms. I therefore cordially welcome the gradual emancipation of women from comparative subjection to comparative freedom; but the multifarious fields of energy and usefulness open to modern women, have brought with them disadvantages as well as gains.

Whilst, therefore, unreservedly admitting the claim of the *fin de siècle* woman to freedom of action and to intellectual equality, I must think there are certain branches of study, described by a modern writer as belonging to the "gynagogue" class, which are less suited to women than some others; and amongst these, I would name the abstruse study of mathematics, for although success in this branch of knowledge may lead to a brilliant career as a high wrangler, I think that a female mathematical athlete is not suited for the duties and responsibilities of maternity, and that the mental endowments of her children are likely to be below the average.

I am quite aware that I am treading on dangerous and delicate ground, but although I would not discourage the highest aspirations of women, whether of an intellectual, social, or æsthetic character, I must think that a word of caution is necessary against the overpressure of the present day in the direction above indicated. With every desire to treat this question from a most liberal point of view, I desire to emphasize the fact that men and women have different parts to play on the stage of life, and should be trained differently; but provided mental overpressure is guarded against, I have no fear of women engaging in cer-

tain occupations which custom has not hitherto recognised as feminine, and experience has shown us that they may be safely left to follow the promptings of their own powers and instincts.

Although the injurious effects of overpressure in education have been principally referred to in the education of girls, the same pernicious results may accrue in the case of boys. Dr. Wynn Westcott,* in his work on "Suicide," states that during the last few years there have been several English cases of children killing themselves because unable to perform school tasks. He also says that child suicide is increasing in England and in almost all Continental states, and that the cause in many cases is due to overpressure in education. Dr. Strahan,† writing upon the same subject, in his treatise on "Suicide and Insanity," corroborates Dr. Westcott's views, and remarks that fifty years ago, child-suicide was comparatively rare; but that during the last quarter of a century it has steadily increased in all European states, and that the high-pressure system of education is generally considered the cause of it.

If any apology be needed for dwelling at such length on the evils of the educational overpressure so prevalent in our days, I would observe that it has an indirect bearing upon the causation of idiocy; for although the sinister results recorded by Drs. Westcott and Strahan may be comparatively rare, still consequences of a more remote character may ensue, for the injury done to the nervous system is cumulative and transmissible from generation to generation, and a neurotic tendency may be engendered in the offspring of those who have been exposed to this evil, which may manifest itself in the appearance of idiocy or some lesser form of mental defect.

* "Suicide, Its History, Literature, Jurisprudence, etc." By W. Wynn Westcott, M. D.

† "Suicide and Insanity, a Physiological and Sociological Study," by S. A. K. Strahan, M. D., Barrister at Law.

WHAT IS MENINGITIS?*

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THE object of this paper is to call in question certain theories regarding meningitis which are very generally accepted. These theories are, that symptoms found during life in meningitis, result from lesions present in the meninges. Very naturally the definition of meningitis must be called in question, and it becomes necessary to ask what is meningitis? The question has occurred to me almost entirely from a clinical stand-point as will be seen by the following cases: In children a vast number of so-called brain symptoms occur in a host of cases of great variety. Nearly all febrile diseases present more or less brain symptoms, but the classical picture of meningitis, that is to say, cases in which there occur coma, eye symptoms and symptoms involving various other muscles than those of the eye, vomiting, then convulsions, are the ones I shall discuss in considering meningitis.

Meningitis varies materially in the semeiology which it presents. Sometimes with the simplest symptoms, fatal meningitis will ensue, and sometimes with the most severe symptoms, recovery will occur.

Some six years ago last month I saw a child fourteen months of age, which presented this group of symptoms. For four weeks it had diarrhoea of a putrid type. It took four weeks to cure the gastro-intestinal derangement at which time there was left an emaciated little baby with marked enlargement of the mesenteric glands that could be

* Chicago Academy of Medicine Transactions.

readily seen through the thin, lax abdominal wall. Dr. Henrotin asserts that the child undoubtedly had tuberculosis. A few days later the child had returned to its febrile condition and there was presented a picture of photophobia, strabismus, irregularity and sluggish reaction of the pupils, irregular respiration, irregular pulse, and the most marked type of hydrocephalic cry to which I have ever listened. These symptoms lasted for a week ultimately terminating in recovery.

One would say of course there was a basilar meningitis presumably presenting all the aetiological factors of a tubercular type. Five years have elapsed and the child is practically well. I saw her recently and found a tendency to stumble. I could never make out any paralysis or any particular weakness of the muscles, and this tendency to stumble may have been a clumsy habit. I mention this case for what it is worth. The child is absolutely free from gland enlargement, and from any evidence of tuberculosis, so that if she had tubercular meningitis, she made a complete recovery. That she had a basilar meningitis seems certain.

I shall next cite a case of the very opposite type. A child born in December, 1894, was taken sick in July of 1895, with slight fever, the nature of which was never discovered. It was presumed to be "*la grippe*." This fever lasted a few days, but the child never seemed exactly the same. In August it was found that the mother's milk was insufficient and it was suggested to wean the child. Before the mother had made up her mind to do so the child refused to take the breast. It was then put on sterilized milk and refused to take this. I saw the child some time later and all I could find wrong with it was persistent refusal to take food. It would sit up with a most stern and determined expression, upon its face, the little lips were tightly closed, absolutely refusing to allow anything except water to pass the lips. There was no evidence of nausea and no vomiting. It was suggested, however, that meningitis might occur. The child went on in this way for three weeks during which time it received not over a pint of

sterilized milk by the mouth. Latterly it was fed by mouth with peptonized and sterilized milk and within twenty-four hours thereafter it presented a picture of meningitis. The symptoms consisted of strabismus, photophobia, general convulsions and retracted abdomen. In short there was a typical classical picture and so-called symptomatic meningitis. The milk was perfectly sterilized, the mother and her family were absolutely free from tuberculosis as was also the father of the child. Not a servant with a suspicion of tuberculosis had lived in the house.

It is interesting to compare two such cases as these: One presenting for a period of three or four weeks simply a symptom of refusal to take food and terminating after twenty-four hours with a complete picture of meningitis; the other presenting a classical picture of the disease and terminating favorably. It has been my experience that the cases presenting classical pictures of meningitis do not terminate favorably. Very few of them recover so that when the classical picture of meningitis is present it is an extremely unfavorable prognostic sign. The disease is dangerous to life, and life is usually sacrificed with the presence of such symptoms.

Another case occurred in my practice January, 1895, in the child of a physician. It was about fourteen months old. The child had been bottle fed, but been fed very carefully. Its nutrition seemed perfect. The character of its food had been such as to secure for it good nutrition. No defects of any kind could be seen in its nutrition, no evidence of a rachitic condition, no evidence of scorbutic starvation, no evidence of failure of nutrition. About Christmas time in consequence of a little indiscretion in feeding the child, there developed putrid diarrhœa, which later improved, but finally became worse until about the middle of January. At that time I saw the child. Its temperature was 103°. It was somewhat stupid but manifested no sign of meningitis, other than stupor which I did not look upon as meningeal in the absence of other symptoms. There was a rose rash over the abdomen, but not of a type to indicate typhoid. Without the slightest hesitation typhoid

fever was excluded. At first it was concluded that there was simply a condition of fermentation in the bowel, a gastro-enteric intoxication, and in all probability the matter could be straightened out by proper attention to the bowel. However this proved erroneous. The bowel was cleaned out, the fæces rendered relatively aseptic and still the fever continued. While it was doubtless true that this child had originally had an infection of the bowel contents, it was unquestionably true now that it had general infection of the blood, which infection probably had found its way into the circulation through the medium of the bowel. The febrile symptoms continued and gradually there developed evidences of meningeal trouble. The stuporous condition continued until the 1st of January, at which time the child became somewhat brighter and more irritable. The nutrition continued good. About 21st, sleep was broken and the hydrocephalic cry occurred. The child was given one-fourth grain Dover's powder to control the pain in the head. There was stupor following this dose, but it was thought at the time that it was due to other things than opium. On the morning of the 24th, there was a stuporous condition. The abdomen was somewhat distended, and enemata were given to relieve the bowel distention and to flush the kidneys. The case ran along in this way until about January 30th, when the stools were of a dark greenish color like chopped spinach. For four or five days there was no diarrhoea. Urination copious enough; hydrocephalic cry; the child was under the influence of opiate. Apparently some photophobia, convergent strabismus for several days preceding death, inability to bring the left arm across the body, although it could reach back of the head to seize the ice bag and pull it away. There were evidences of paralysis of the left side of the body, the left leg absolutely motionless while the right was kept in constant motion. The left arm it never attempted to pull across the body but could raise to the head. The character of the movements of the left arm indicated some form of paralysis. Expressions of pain were developed on lifting the lower part of the trunk with the hands under the head. There was a hyperæsthetic condi-

tion of the left leg and some rigidity of the spine. This disappeared somewhat when the strychnia which was given was discontinued. The child was kept on strychnine 1/6 grain every three or four hours, but the condition did not entirely disappear. The temperature reached normal a few days preceding death. Sponging was sufficient to reduce the temperature, no other anti-pyretic being given. The pulse throughout illness remained strong. January 30th there was considerable distention of the abdomen with ineffectual strain which was relieved by massage. The temperature then was 103°, when sponging reduced it to 100°. The child sank into quiet slumber about 3 o'clock in the morning, when it was found to be in a dying condition. The child died, but before death there was amelioration of the meningeal symptoms.

I was satisfied toward the close of the child's illness that the bowels were clean and the administration of the milk did not seem to increase the trouble in any way. Furthermore diuretics were used very largely for the purpose of flushing the bowel and of getting fluid into the general system as a means of general elimination. Fly blisters were applied to relieve the symptoms. Autopsy was made by Dr. Futterer. I told the father that the child had died of an auto-intoxication which produced marked brain symptoms. Evidences of meningitis were shown by the ordinary lymph exudation thrown out upon the meninges. All the symptoms were not produced by the single cause. Some symptoms consisting of external manifestations were readily detected during life while others consisting of internal manifestations were detected only by examinations of the body after death. I believe that the exudation upon the meninges was a symptom produced by a certain form of poisoning which was co-ordinated with stupor, convulsions, etc., not that the exudation upon the meninges held to the external symptoms, the relation of cause and effect. The object of the autopsy was not to overthrow or confirm diagnosis, but to find symptoms which did not exist before death. The autopsy showed the brain absolutely free from exudation. There was nothing in the shape of con-

gestion of the meninges of the brain which could be called pathological. There was slight lesions of Peyer's patches and of the follicles of the large intestine. There was slight thickening of the small intestine but no ulceration. The right kidney was in a state of acute congestion but there was no change in the left kidney structure.

Dr. Futterer cited at the autopsy a certain paper read in Germany, entitled "Meningitis without Meningitis." In other words, an individual had died with the symptoms similar to those which I have described, but at autopsy no sign of structural lesion were found. I have not had the opportunity of looking up this paper. I asked Dr. Futterer if he had ever seen a case of anatomical meningitis without the symptoms of it during life. He said "no."

I had the good fortune to see such a case within two week at the Maurice-Porter Hospital. A child 14 months of age had pneumonia, and I saw it at 6 o'clock in the afternoon. I had just left the death-bed of a child of the same age, who had died of pneumonia. For about a week and two days preceding death it had distinct evidence of cerebro-spinal meningitis. The child died about 3:30 o'clock in the afternoon. At 6 o'clock I saw the little one. Although there were no meningeal signs present, the general character of the pneumonic process reminded me so much of the case just lost. I asked the nurse to be careful to note any sign which could be referred to meningitis. I declined to put the child upon strychnine, which is the routine treatment in the hospital. The child was poorly nourished, very rachitic and in a bad condition generally. The prognosis was unfavorable. While it was stupid it was nevertheless able to follow the finger with its eyes. There was no photophobia; normal reaction of the pupils; no opisthotonos nor stiffness of any muscle of the body. In other words there was a complete absence of meningeal signs. When I reached the hospital the next morning the child was dead. In the meantime Dr. Quinlan had seen it, but found no evidence of meningitis. An autopsy was made and disseminated pneumonia found with exudated lymph covering practically the whole brain. The lymph covered

the meninges particularly in the region of the medulla. The cord was not opened. Although there was extensive exudation of lymph, yet there was not a single medullary sign present—no interference with respiration nor with the pulse that could be attributed to the exudation upon the medullary meninges. This case shows that the classical lesions of so-called meningitis can occur without the production of a single symptom referable to that condition.

So far as I know there is no positive proof that an exudate upon the meninges can produce symptoms because of its location. The belief that such is the case is great because of the coincidence of the two conditions. Here is a single case where the exudate occurred without symptoms, which throws doubt upon the supposed causative relation between such an exudate and the symptoms which usually accompany it. In other words we have a case of meningitis so far as symptoms go, clinically speaking, which at the *post-mortem* table presents absolutely no evidence of the clinical and morphological lesions. This is something not uncommon. We have been told that when we do not find meningitis after death there has been a mistaken diagnosis. I believe that it is an incorrect position to assume that we should go into the body after death to find what other symptoms have been produced by the noxious causes at work besides those which we can detect by clinical means of investigation. It lays open the whole question of the sufficiency of morphological pathology. Take pneumonia for instance. It was defined when I was a student to consist of exudation of the lungs. It would be absurd to make such a definition now. Pneumonia is an infection produced by the pneumococcus and in the course of the life history of this germ there occur certain symptoms by the intoxication which it produces. Among those symptoms are elevation of temperature, sudden onset, hot skin, rapid respiration, interference with the action of the heart, dyspnoea and exudation into the lung tissue of a fibrinous substance. It is believed by some that it is the exudate into the lung tissue which produces the rapid respiration and dyspnoea in cases of fibrinous pneumonia. I do not believe it. Why?

Because in broncho-pneumonia where not a twenty-fifth part of the lung tissue is thrown out of active operation dyspnoea is much greater. Even when we cannot find the slightest trace or sign of a morphological lesion by physical examination in the broncho-pneumonia, the dyspnoea is severe. On the other hand I believe that we can have so-called lobar-pneumonia in a child without symptoms at all. Not a few cases of this type have come under my observation.

A child nine years of age was found to be a little warm by his father who asked me to see it. The child had a little cough three or four times during the day, and it was believed that there was something wrong. I saw the child in the evening and made a careful examination of the throat, skin and pulse, etc., and found them normal. I also examined the upper lobe of the right lung and found it solid. There was a slight elevation of the temperature but no acceleration of the pulse. The child was extremely angry, because during the next few days I compelled her to stay in the house. It was found that the child had fibrinous pneumonia which ran its course, resolved and was absorbed. I would therefore repeat that it cannot be the mechanical feature in the pneumonia which produces the dyspnoea but a toxic condition.

We have been having quite a number of cases of cerebro-spinal meningitis, two cases of which disease occurred in my practice quite recently. A child two years of age was taken with tonsillitis, which on examination was found to be due to the pneumococcus. About the fourth day of the disease I had the opportunity of seeing the child when the infection of the throat had disappeared. But there was then present the signs of a fibrinous pneumonia. The entire posterior half of the left lung was absolutely solid. There was no question as to the exudate, and there were distinct evidences of cerebro-spinal meningitis. I saw the child a second time and found developing on one leg a bluish discoloration, which I learned subsequently terminated in dry gangrene. The child had a pneumococcus infection of the tonsil followed by secondary pneumococcus infection of the

lung and meninges and death. An autopsy was not made in this case, but the chances are that the symptoms of meningitis which consisted of an exudate of the meninges were present in that case. The other symptoms were present and death followed. If we look upon these cases as infection with the pneumococcus we can conceive that the intoxication might produce gangrene of the extremity.

Another case, five months old, was taken sick with what was supposed to be rheumatism. A diagnosis of cerebro-spinal meningitis was made. The condition which made the diagnosis possible were, strabismus, opisthotonus, inability to move the right leg, which was accompanied by slight swelling of the thigh, simulating osteomyelitis with pus outside of the bone. The child died two days ago. Dr. Fenger who saw the case before death was of the opinion that the cerebro-spinal symptoms were reflex. This child had besides osteomyelitis, cerebro-spinal meningitis.

In the discussion Dr. Gustave Futterer remarked: "In reference to the case Dr. Christopher mentioned in which I autopsied, the anatomical findings were follicular enteritis, swelling of the patches, with acute swelling of the mesenteric glands. To the naked eye the pia mater was perfectly intact, glassy, no milky appearance and no exudation anywhere. From an anatomical standpoint we had to conclude that there was no meningitis. My opinion was that there was septic enteritis, and that from it the meningeal symptoms had resulted. The paper to which Dr. Christopher refers was read by Hoffman, of Heidelberg, at the International Medical Congress in 1885 entitled, 'Meningitis without Meningitis.' He related some cases in which meningeal symptoms had existed wherein the typical exudation was found and only a milky appearance of the pia mater. In one statement I must correct Dr. Christopher. When he asked me whether I had ever seen a similar case or not, I replied 'yes.' I referred to an interesting case in differential diagnosis mentioned by an assistant of Oliver. The patient seemed to have typhoid fever, but a diagnosis of meningitis was made. At the autopsy which was made by myself no exudation was found, but the pia mater had a milky appearance. I recalled the case of Hoffman, took particular pains to examine them and found extensive cellular infiltration. In a general way in reference to the meningeal symptoms we know that other symptoms can exist except

those which produce either a meningeal exudate otherwise and they may baffle the most expert clinicians, making it exceedingly difficult for him to say whether there is anatomical meningitis or not. I refer here to tetanus, uræmia, septic conditions and rheumatism. In tetanus for instance, we have trismus, and of course that aids us in making a differential diagnosis, but aside from that the symptoms can be exactly the same as those which we encounter in a case of meningitis. In tetanus we are reasonably certain that it is only an intoxication. Probably the same condition obtains in other diseases. I agree with Dr. Christopher that it is not necessary to have meningeal exudate to explain the clinical symptoms. The more cases of meningitis we observe the more difficult it is to make a correct diagnosis."

In reference to localizing the lesions in most cases this is quite impossible. In a very few instances of meningeal tuberculosis it is possible to make a correct localization. If we have paresis of the facial nerve, if we have symptoms in the lower extremities or if we have a lesion of the central frontal convolution we may be able to localize it, while in most other cases we cannot do this.

Dr. Ludwig Hektoen said:

"Dr. Christopher's remarks dealing more particularly with the clinical phenomena of meningitis made it rather difficult for me to discuss the subject very extensively. I think that we must grant Dr. Christopher's first proposition, namely; that the meningeal symptoms can exist in a number of cases of infections and in cases without any meningeal lesion. Concerning his second proposition I do not think that everything he claimed can be readily granted. Before referring more directly to the point, I wish briefly to go over the cases the doctor mentioned and to call attention to the most particular points with reference to those cases.

The first case might be one of meningeal tuberculosis that had recovered. *The proposition is somewhat startling, but one instance of meningeal tuberculosis with recovery has been described by Dr. Futterer. Another instance of chronic meningeal tuberculosis occurred in which the symptoms existed for many weeks, finally terminating in death. The lesions in this case were retrogressing at the time of death, though recovery from the anatomical changes was taking place. In the second case, meningeal tuberculosis cannot be excluded even though there is no history of

heredity and even though the manner of feeding the child would exclude tubercular infection by way of the food. We cannot exclude tubercular infection from inhalation in that case, and then subsequent infection of the meninges either directly from the lung or bronchial glands; neither can we exclude tubercular infection from the meninges through the nose.

In the third case the meningeal symptoms present must be regarded as due to some general infection or intoxication, but just what sort of general infection or intoxication is present we cannot say because no bacteriological examination was made.

In the fourth case we have pneumonia complicated by a sero-fibrinous leptomeningitis. This meningitis gives rise to no symptoms. Leptomeningitis occurring in the course of lobar pneumonia due to pneumococcus infection is of rather frequent occurrence. It is my impression that some of the cases of meningitis occurring in the course of pneumonia are atypical so far as the clinical manifestations are concerned.

In the fifth case, as near as I understood it, we have reason to believe there was pneumococcus infection. A dry gangrene of the extremity occurred, and the logical way of explaining that gangrene would be that there existed some endocardial inflammation due to the pneumococcus, and that from the endocardial inflammation emboli were detached and lodged in the arteries of the lower extremity in that way producing dry gangrene.

In the sixth case there is osteomyelitis, and of course, that points to invasion of the blood by micro-organisms, and in the course of this general infection meningeal symptoms might really have been developed, inasmuch as Dr. Futterer dealt with this point. In many cases of meningitis, the microscopic ones may be marked, and of these lesions particularly in tubercular meningitis the intravascular changes may be the most pronounced of all. There may be endarteritis with a tendency toward extension in meningeal tuberculosis. Recently I have observed some intravascular proliferation in cases of pneumococcus meningitis."

Dr. Henry B. Favill:

"I was particularly interested in the maintenance of certain facts offered by Dr. Futterer and Hektoen; yet neither of these somewhat opposing contentions seemed to represent the final conclusion of Dr. Christopher. There can be no question that at this day the clinical picture of

meningitis must be regarded as essentially an intoxication. The question is as to what may properly be called meningitis. The majority of meningites which have come to autopsy have been associated more or less with lymph exudation upon the meninges; but the very contention of Dr. Hektoen and Dr. Futterer is qualified by stating that with the extreme microscopic perfection there may be pronounced microscopic changes. They simply call attention to the common method of observation hitherto recorded. As clinicians we must agree that intoxication is fundamentally responsible for the symptom group presented by an infectious disease. There must be some determining anatomical factor, and it may be anything from a mere vascular disease, as pointed out by Dr. Hektoen, to an intense disease manifested upon the meninges. This is not only true with regard to meningitis, but equally true of typhoid fever and pneumonia. Are we prepared to say, as I heard Dr. Fenger fifteen years ago say in making a *post-mortem* examination, 'No lesion of Peyer's patches, consequently no typhoid fever'? If we say that of typhoid fever, we may logically say the same with reference to meningeal tuberculosis. It is not to my mind a satisfactory position, because I consider the lesion of Peyer's patches like the exudate upon the meninges as too gross to permit of exclusive reliance upon it as a means of diagnosis. Our attention is called to the distinct difference which exists between an intoxication leading to meningeal symptoms of sufficient definiteness to warrant the diagnosis of meningitis, and on the other hand to infection of the meninges, two pronouncedly different conditions. From the standpoint of a clinician I must entirely corroborate the observation of Dr. Christopher. The feature of intoxication in infectious disease is of the greatest importance, and that the anatomical lesion must be regarded as, on the whole, due to a certain process occurring with variations and possibly of a nature at this moment quite beyond our knowledge."

Dr. Jas. G. Kiernan:

"One most important question propounded by Dr. Christopher is this: 'Do certain clinical symptoms depend on the seat of the lesions rather than the character.' In psychiatry this position of Dr. Christopher has long been established. There are an immense number of cases, some of which reach insane hospitals, some of which die outside, belonging to this class which there is a growing tendency among alienists to designate as primary confusional insanity which are diagnosed meningitis. They have many of

the symptoms which are supposed to be characteristic of meningitis, yet on autopsy, microscopic and macroscopic appearances are absolutely *nil*. The same thing is true of acute mania even with the cardiac complications which occasionally occur, pointing to complications resulting from the medulla. In the vast majority of cases where lesions occur these are the secondary results of a biochemical change consequent on the psychosis rather than the reverse. This is still more true of acute melancholia. It is exceptionally true of more definite psychoses, like parietic dementia which may occur without demonstrable lesions. Even of the degenerative types, paranoia for example, this is true. Cases of paranoia with a well-defined history, with constitutional stigmata occur where there is no cerebral teratological change, no microscopic or macroscopic change. All these things can be explained from a biochemical standpoint since in the function of the neurons certain changes occur during life, which are not the result of a direct pathological change in the sense of demonstrable conditions after death, but are merely biochemical changes which may lead to these. Dr. Christopher has raised the question of the curability of meningeal tuberculosis. At one time (my mind is now *in statu quo*) I did believe that a large number of cases of meningeal tuberculosis were recoverable. This was twenty years ago, before bacteriologic diagnosis was in existence. In a number of cases of katatonia or, if you will, cases presenting a symptom complex, which is regarded by a large number of alienists as katatonia, whatever may be the nosological position, meningeal tuberculosis was found in a large number of instances which had passed into calcareous changes. In a paper I read on 'Katatonia,' two decades ago,* I narrated a number of these conditions. At the time both Meynert and Kahlbaum had found a number of similar cases.† A certain number of cases of hydrocephalus undoubtedly do recover. So-called macrocephalic individuals are cases in which an increase of the barren formation has taken place. One of the most notorious of these was Cuvier, whose recovery accounted for his large brain. Another case which came under my observation (carefully examined by Dr. Spitzka and myself) twenty-one years ago, was an idiot, whose brain weighed five ounces more than that of Cuvier. The barren tissue compensated for the old hydrocephalic change. Dr. Christopher has done excellent service in calling our attention to the

* *American Journal of Insanity*, 1877-'78.

† *ALIENIST AND NEUROLOGIST*, 1882.

multitudinous absurdities diagnosed under the term meningitis. There are a hundred and one conditions, meningeal, neurotic, hysteric and otherwise, put in this *omni gatherum*. Under the term meningism, the condition described by Dr. Christopher was characterized at the 1896 meeting of the French Neurological Society. Dr. Fütterer's 'acute delirium' case was one of typhomania—a psychosis marked by cerebral change."

Dr. Sanger Brown:

"The position which we will reach in our own minds regarding this question depends very largely upon the theories of cerebration, of the modes of action of the cortex of the brain, which we have accepted as most reasonable to us. It appears that we have all agreed that acute meningitis is an infection disease, and further that the essential feature so far as the clinical symptoms are concerned is the action of some morbid influence upon the cortex of the brain, which evidently gives rise to the essential and distinctive features. As has been previously remarked there are various toxæmias which have an influence on the cortex of the brain. Tetanus, for instance, has some influence on the nervous system and on the cortex of the brain. Scarlet fever or certain forms of it, produce profound impressions, stupor, while tetanus produces spasm. But these have symptoms quite distinct from those observed in meningitis. We are accustomed to believe that when the meninges are involved in addition to the other symptoms, there is pain, photophobia, etc. I have not heard enough yet to convince me that I have to abandon the idea that the distinctive symptoms of meningitis are due in most cases and mainly to the action of a toxin both upon the cortex of the brain and upon the meninges. While I do not think it can be demonstrated, it looks reasonable to me to suppose that the presence of these toxins alone would be sufficient to cause the symptoms but not the exudation. In one case particularly reported by Dr. Christopher there were no symptoms during life, yet there was found an exudation of lymph after death. It is possible under such circumstances that this child was stuporous for some hours before death, and is not possible that this exudate found at the autopsy might have been thrown out during these hours of stupor. It is believed that cases of undoubted meningitis with the symptoms of involvement of the cranial nerves get well. I think there are facts in pathology and in clinical experience which are similar to that."

Dr. Hugh T. Patrick:

"We must all concede that there are a number of diseases distinctly classified in our nosology that gives rise to so-called meningeal symptoms. It must be the experience of every man who sees cases in general medicine or nervous disease in consultation that not infrequently various infectious diseases have been diagnosed as probable meningitis, particularly those cases in which the practitioner is unable to make an accurate diagnosis. Pronounced meningeal symptoms occur in many diseases. Furthermore the best diagnosticians make a diagnosis of meningitis and do not find *post-mortem* evidence of the disease. We must concede that there are cases of severe meningitis, not in anatomical sense of the word in which death does not ensue. Death may ultimately ensue, but patients with a profound meningitis may live for a long time, in other words, one case may live with a meningitis ten times as pronounced as another patient who dies. When I was an interne we had a child in the service not without cerebral symptoms, but no one made a diagnosis of meningitis. We found hydrocephalus which was nothing but meningitis with an exudate one-fourth of an inch thick covering the entire brain. I have seen syphilitic meningitis extending to the convexity, at the base also one-fourth of an inch in thickness. The patient died with it, but had lived with it a short time before death. This class of cases includes tubercular meningitis, chronic syphilitic meningitis of the brain and cord, diffuse sarcomatosis also occasionally cases of syringomyelia extending up to the pons so nearly like sarcomatosis, that they can scarcely be distinguished. In all such cases the anatomical condition is that of meningitis. This condition may be extremely pronounced before a patient dies.

"Along with that class of cases I would like to say that I saw two cases come to autopsy in the service of Erb of Heidelberg than whom there is no better diagnostician. I do not remember the diagnosis which was made, but the post-mortem in both cases showed cerebro-spinal meningitis. Notwithstanding these facts which go to support the hypothesis of Dr. Christopher I think we can only call it an hypothesis. What is needed in this class of case is investigation. The meningitis can produce no cerebral symptoms aside from the cortex. Pain, delirium, coma, stupor, refraction, must come from the involvement of nerve tissue. How may the nerve tissue be involved in meningitis? It may be involved by direct intoxication by circulatory disturbances and that is about the end of the string. It is here that investigation is needed. Dr. Hektoen's investigation per-

tains particularly to vascular disturbances which is a great step in advance. A great deal has been done in the investigation of the effect of toxamias on nerve tissue and it is here later investigations must come, as well as investigation of the vascular structures."

Dr. Gustav Futterer:

"Some years ago I dissected a brain in a case of delirium acutum and on examining the cortex I found opaque triangular spots in the brain. After the post-mortem I could not see them because after the cortex is laid bare in five or ten minutes it is much more difficult to see the spots. I furnished microscopic proof that I had not been mistaken in observing these spots. I preserved the specimens in Mueller's fluid, cut them, and made specimens after Weigert. Each one of the spots showed itself clearly as it appeared in the brain itself. The nerve substance had disappeared which was the reason the spots were not dark. I conclude from my observation in this case that there was nothing specific about this condition of delirium action. I then examined cases of meningeal tuberculosis in the same way and found at quite a distance from the tubercular lesions in the cortex such atrophic spots where the nerve substance had disappeared without any cellular infiltration or sign of inflammation being present."

Dr. Sanger Brown:

"I would ask Dr. Hektoen and Dr. Futterer in regard to investigations showing changes which occur in the neurons of the cortex whether or not they are familiar with any work on that subject more recent than the article of Dr. Berkeley,* which stated that alcohol was administered to rabbits for a number of months and then they died from the effects of it. The cortex was subsequently examined and very distinct changes were found to have taken place in the neurons. I would ask if such a system of experimental research is likely to throw light upon the results of the inflammation in meningitis."

Dr. Ludwig Hektoen:

"In answer to Dr. Brown's question I would say that I believe Dr. Berkeley's investigations will stand the test of criticism and he has shown by improved methods that changes do occur in the ganglion cells in the cortex of the

*Johns Hopkins Hospital Report, 1896.

brain as well as the condition referred to by Dr. Brown. Furthermore I believe similar processes will show marked changes in the cells in a large number of other pathological conditions."

Dr. Brown:

"As melancholia and dementia."

Dr. Hektoen:

"I am not able to speak particularly of those conditions, but of meningitis without meningitis, of conditions in which there are marked meningeal symptoms in general intoxication and infection."

Dr. John Ridlon:

"I have been very much interested in meningeal tuberculosis, and also in the statement of the cases that have recovered. I was taught that all such cases died. I thought they did until I encountered some cases that did not terminate fatally and then I wondered whether my diagnosis was correct. My position has been strengthened and I think now that my diagnoses were correct. More than half of my patients suffer from tubercular joint diseases and certainly three-fourths of all the cases die either of meningeal tuberculosis or general tuberculosis. I have only seen three cases where a diagnosis of meningeal tuberculosis was made and the patients did not die. The first case was seen in St. Luke's Hospital, New York City, during my service as interne, the child suffering from tubercular spondylitis who developed the classical and typical symptoms of meningeal tuberculosis. A diagnosis of this disease was made by Dr. Newton M. Shaffer and Dr. Andrew H. Smith in consultation. A full dose of castor oil relieved the symptoms of tubercular meningitis. I created a life long enemy by asking the next day had the child died, would it have died of tubercular meningitis?"

The second case I saw was a patient of Dr. Samuel Wood on Long Island, a very superior general practitioner. The case was seen many times in consultation by Dr. Wm. H. Draper of New York, Dr. Robert E. Weir and the late Dr. D. A. McBride. They all agreed that the case was one of tubercular meningitis, consequently an unfavorable prognosis was made. The patient is alive but is blind. The third case was a patient of Dr. O'Sullivan in Hyde Park, the child suffering with tubercular spondylitis. I saw the child two or three times during a year and it had

abscess in each buttock. In spite of my urgent request that the abscess be let alone, Dr. Sullivan could not withstand the temptation of thinking that the abscess must be opened. He opened the abscess and a week or ten days later the child developed the clinical symptoms of meningeal tuberculosis. I saw the child three times during the following ten days and at my last visit made an unfavorable prognosis. I felt that the case would prove fatal from the beginning. The child however is alive to-day with no symptoms dependent upon any meningeal inflammation, and I have since wondered whether my diagnosis was right or wrong. I was very much pleased to hear the cases that have been cited and to hear it generally stated that meningeal tuberculosis may occur and the patient not die from it."

Dr. Wm. F. Waugh:

"It is a good rule not to look for an unusual or strange explanation of fact when a simple one will answer. The condition Dr. Christopher speaks of may be defined as a toxæmia whose starting point was the intestinal canal and through failure of intestinal antiseptics the toxicogenetic centers develop in the mesenteric glands, and that such a condition results in the production of the phenomena ordinarily attributed to meningitis as a clinical fact of considerable value and it seems to me the value of it was a little obscured by Dr. Christopher's explanation as to the curability of tubercular meningitis. Niemeyer records the case of a child who recovered from the primary attack but died subsequently about five years later and at the autopsy evidence of the first attack were found. Another physician reported seven cases that had recovered under the use of iodoform ointment to the scalp. I think it is begging the question to claim that cases which recover could not have been meningeal tuberculosis. As regards the dependence of the phenomena on lesions demonstrated after death, it is not necessary that these phenomena should be attributed to those lesions."

Dr. W. S. Christopher:

"There are a few points I desire to touch upon closing. I would first like to ask pathologists present if it is not a fact that the symptoms found in meningitis have been generally assumed to be due to lesions. Has not this idea been very prevalent?"

Dr. Futterer:

"Do you mean microscopic lesions or those visible to the naked eye?"

Dr. Christopher:

"Not altogether."

Dr. Futterer:

"We admit that we may have a toxic meningitis without any visible lesion and I am not sure that we may have a toxic condition of the brain which may produce symptoms like those encountered in real meningitis."

Dr. Christopher:

"I would like to ask Dr. Hektoen whether the anatomical lesion are causative of symptoms of meningitis. I do not mean to-day, but was not this opinion held by practitioners some ten years ago?"

Dr. Hektoen:

"I believe at that time more stress was laid upon the effect of the anatomical lesions in acute infectious diseases, than now. Now more stress is laid upon general infection and general intoxication."

Dr. Christopher:

"I do not think I am far from right although our pathologists are beginning to hedge. The essential feature in disease years ago was the anatomical condition and out of it the so-called expectant school of treatment of internal medicine was evolved. I have not heard anyone assert that the exudate upon the meninges was the reason for the occurrence of the symptoms. If they are not the cause of symptoms which we see during life then we have no right to expect to diagnose that condition anatomically by the symptoms. Meningitis is a disease which has an extremely grave prognosis and that prognosis is grave irrespective of the lesion present. If the lesions produced no symptoms we may ignore them and when we find the symptoms of meningitis present, for it is only then that we can diagnose it, then we make a grave prognosis. The pathologist has nothing to do with prognosis. The question is settled at the time we get hold of the patient, when we make our prognosis upon the condition and symptoms which we find during life. When I find a child with photophobia, strabismus, coma, muscular contraction and with persistent vomiting I make a grave prognosis and it is quite imma-

terial whether the symptoms are produced by one form of intoxication or another unless we can diagnosticate the kind of intoxication and it be of a type which is remediable. If it be an intoxication from the bowel and we can remove the source of the poison, the prognosis is favorable. If it be a case of intoxication of the so-called rheumatic type and we can get the materies morbi through the kidneys the prognosis is fair. If we have an intoxication from some general infection in the blood which we cannot eradicate, the prognosis is grave irrespective of the lesions in the meninges. The prognosis then of meningitis is entirely clinical. The second case which I recorded may have been tubercular meningitis. I did not look into the question because it brought up a very much disputed point as to whether cases of tubercular meningitis ever recover or not. I do not think we have any right to say that the case was or was not one of tubercular meningitis. We must simply say that the means of correct diagnosis is absent. We have at our disposal means of diagnosis during life by which we may be able to state with some degree of certainty that a certain case was tubercular meningitis and if it recovers we can say with some degree of certainty that the case has recovered. I refer to diagnosis by lumbar puncture. Lumbar puncture has been resorted to a number of times by introducing the hypodermic needle between the second, third and fourth lumbar vertebrae with the child lying on one side and withdrawing some fluid or permitting it to run, determining the degree of pressure by the manometer and then examining the fluid for the micro-organisms which it contains. In that way in some cases tubercule bacilli may be found in the fluid thus obtained. If tubercule bacilli are found we have excellent evidence that the disease is of a tubercular character. Until we have found the cause of tubercular meningitis by such means of finding the tubercular bacilli in the fluid as I have mentioned we have no right to say that a case of tubercular meningitis can recover. At the same time we have no right to say that a case of tubercular meningitis cannot recover. The question is beyond our knowledge to settle because of the absence of reliable data. I have had five deaths from meningitis within the past two weeks and of these two had pneumonia and two bowel trouble. One was a case of osteomyelitis of the femur which may or may not have had meningitis."

Dr. Patrick:

"How many autopsies?"

Dr. Christopher:

"Two. There seems need of some determining factor to justify a diagnosis of meningitis. It is, after all, a question of terms. I think we are all agreed that the occurrence of the lymph exudate upon the meninges is not enough to make out a disease which has the fatal prognosis that meningitis has. If meningitis is an anatomical condition we must admit that we cannot diagnosticate it during life with absolute certainty because the symptoms do not justify the exact anatomical condition present. We do find a certain number of things clinically which have an extremely bad prognosis and it is desirable to use the term meningitis to cover them. You may relegate the term meningitis to anatomical conditions that are found but if you do you must use a different word to describe the clinical conditions which are found. As remarked by Dr. Favill we must admit that there has been a general collapse of the anatomical condition which constitutes meningitis. We no longer need to have pus or lymph, we may get along even with simply the changes which occur in the arteries or vessels themselves, and still have meningitis. The farther we get from the old gross lesion of meningitis the farther we are from the causative symptoms observed.

THE CASE OF STURGEON YOUNG.*

A Question of Hypnotic Injury and Death.

Reported by CLARK BELL, Esq.

Abstracted from Advance Sheets, *Medico-Legal Journal*, by
C. H. Hughes.

THE Coroner of Chautauqua County, A. H. Bowen, M. D., Health Officer at Jamestown, New York, held an inquest as to the cause of death of Sturgeon Young, a colored lad, who recently died there in January, 1897, under circumstances that led the authorities to regard it proper to investigate the cause of death, and how far it was traceable to his condition, as affected by the repeated placing of the lad in hypnotic state, by hypnotizers who were not skilled in the matter, and from which, it was thought, he had sustained physical injuries which might have incited the disease of which he died.

I was called upon by the Coroner to aid him in this investigation, and I requested him to have a careful and complete autopsy made by competent medical men, and the inquest was adjourned to enable me to furnish him with

* Read before the Psychological Section of the Medico-Legal Society Feb. 10, 1897.
Read before the Medico-Legal Society, Feb. 20, 1897.

expert and opinion evidence bearing upon the questions he regarded as important to the inquiry he was conducting.

He furnished me with such of the facts as had transpired, a resume of which is given in my letter enclosed and with a Hypothetical question, which is subjoined.

I sent a letter, of which the following is a copy, and the Hypothetical question to some of the more prominent experts who are members of the Psychological Section of the Medico-Legal Society:

Dear Sir:—Will you please reply to the following hypothetical question?

In case of a youth seventeen years of age, of good physical development and medical history, well nourished, weighing about 125 pounds, upon autopsy with no observable lesion, beyond slight cerebral softening, and trace of kidney deterioration, vital organs normal with cause of disease diagnosed as *diabetes mellitus*; and it appearing upon conceded evidence that the deceased had for approximately over six months been a chronic "sensitive subject" of extreme susceptibility to hypnotic or "mesmeric influence;" having been protractedly and repeatedly hypnotized many times by amateurs and irresponsible and reckless youthful operators and dabblers in hypnotism; and while under the influence or in a state of statuvolence having been sat or stood on, by men of average or heavy weight, while in a cataleptic state, with head and feet supported, so that he formed a bridge between such supports; and having been thrown into and left in hypnotic or trance-like states with instructions to emerge therefrom at a given time, and upon emerging apparently from such trance-like state complaining of nervous chill, physical prostration and malaise; in your view and opinion, according to the best of your professional knowledge and belief, according to the best authorities and latest research wherewith you are familiar, in physiology, pathology and psychology—would physical injury or organic impairment particularly of the renal function, or symptoms of glycosuria, directly or indirectly, follow from the psychic or emotional disturbance or derangement of nerve function, involved in or due to, the morbid innervation incident to such hypnotic practice or experimentation in "mesmerism" or alleged animal magnetism?

Medico-Legal Society,
OFFICE OF THE SECRETARY,
No. 39 Broadway,
NEW YORK, Feb. 1st. 1897.

My Dear Sir and Colleague:—I have received from the Coroner of Chautauqua County, a hypothetical question of which I enclose you a copy, to which he desires a reply from some of our medical experts familiar with the subject of hypnotic suggestion. Briefly, the case, aside from the statement made in the hypothetical question, is; that this Coroner is now conducting an inquest at Jamestown, N. Y., upon the body of a young negro named Spurgeon Young, which excites great public interest. Dr. C. J. Phillips and Dr. Wm. M. Bemus made the autopsy and subsequently testified substantially that, the treatment to which the deceased had been subjected while under hypnotic influence, had in their opinion, caused the disease, *diabetes mellitus* which had caused death. The hypothetical question gives substantially the results of the autopsy, except that Dr. Phillips testified that he found no external bruises or internal lesions sufficient to cause death except as stated in the hypothetical question; that sugar was found in the urine, which he stated was the indication of diabetes, but that the tissues of the kidneys were not broken down. He further testified that diabetes was a kidney or nervous disease that may be caused by strong nervous excitement or non-assimilation; and that he believed that the tax upon the nervous system had a tendency to cause diabetes, and that acute and chronic diseases of the brain of a depressing character, such as might be caused by hypnotism might produce the disease. He further testified that hypnotism is sometimes used with beneficial effects in cases of hysteria and paralysis, but as it was commonly practiced it was extremely dangerous, and that it was a severe strain upon the subject's nervous system. He also testified that the first stage of hypnotism might be refreshing, but that the further stages might be dangerous. He was cross-examined as to whether a subject could be made to commit suicide or crime under suggestion, upon cases read from medical Journals; and answered that the cases were unusual, but that he had no doubt of their truth and was positive that hypnotism was a dangerous agency. It was claimed before the Coroner's jury by the District Attorney that hypnotism as practiced by amateurs was dangerous alike to morals and lives of the subjects in certain cases.

I have been appealed to by this public official to aid him as a public officer in the investigation of the subject by the opinion of scientific experts connected with this body in aid of the due administration of justice. The inquest is adjourned to to-morrow evening and will be further adjourned to hear my reply. I therefore ask that you forward to me at once your answer to the enclosed hypothetical question, taking into consideration also, as the basis of your decision, and opinion such facts as are contained herein, so that I may forward your reply to the Coroner.

Yours hastily,

CLARK BELL.

Thomson Jay Hudson, Esq., LL. D., of Washington, D. C., replied as follows to the hypothetical question:

In reply I have to say:—

First, that I cannot be considered a medical expert in the true sense of the term. I am a lawyer by profession and have given some attention in the course of my studies to the subject of Forensic Medicine; but not to the extent to entitle me to assume the rank of an expert. I have however devoted a large share of my time during the fifteen years past to the study of theoretical and experimental hypnotism and cognate psychical phenomena.

My experience and observation in this line of inquiry enables me to say definitely and without reference to age, physical development, medical history or pathological condition that, given a case where "the deceased had for approximately over six months been a chronic sensitive subject of extreme susceptibility to hypnotic or mesmeric influence; having been protractedly and repeatedly hypnotized many times, by amateurs and irresponsible and reckless youthful operators, and dabblers in hypnotism; and while under the state of staturvolence having been sat or stood on, by a man of average or heavy weight, while in a cataleptic state, with head and feet supported, so that he formed a bridge between such supports; and having been thrown into and left in hypnotic or tranceoidal states with instructions to emerge therefrom at a given time, and upon emerging therefrom such apparently tranceoidal state complaining of nervous chills, physical prostration and malaise;" in my opinion there could be but one inevitable result, namely, a shattered nervous organism leading eventually, if life is prolonged, to imbecility or insanity.

What physical ailments might result from an abnormal mental and nervous condition thus induced would depend largely upon the particular character of the treatment to which the victim was subjected at the hands of his persecutors, and upon which the letter before me, throws no light. I do not however undertake to speak from experience or personal observation on this branch of the subject. It is the province of medical experts to determine what particular physical diseases may result from given nervous conditions.

I may remark, however, that from a somewhat extended course of reading of the works of medical experts of recognized ability and standing in the profession, I have been led to believe that there are few bodily diseases that may not be produced by abnormal mental and nervous conditions. "Who," asks Dr. Fuke,"will pretend to assert that any tissue of the body is beyond the range of nervous influence?"

I cannot within the limits of a letter give the *rationale* of my convictions relating to the disastrous effects upon the victims of unskilled and reckless hypnotic experiments. My views upon that subject may be found, however, in an article in the current number of the *Hypnotic Magazine*, Chicago, entitled "The Danger Lines of Hypnotism."

Prof. W. Xavier Sudduth, of Chicago, replied as follows:

CLARK BELL, ESQ.,

Dear Friend:—In answer to the hypothetical question in the case of the deceased negro, Spurgeon Young, would say that hypnotic suggestion or suggestion given in the hypnotic state is a positive force and its practice in the hands of "amateurs, irresponsible persons and reckless youthful operators and dabblers" is fraught with grave dangers. Cases are on record where subjects in such hands have suffered some nervous shock resulting in serious derangement of the nervous system even from one or a few experiments, not from or by reason of the hypnotization or the induction of the hypnotic state, but by reason of the emotional disturbance incident to such *experimentation*. A close distinction must be made between hypnosis, which is a restful state of somnolence, that can have no bad effects, in and of itself, and the vicious suggestions and practices made to and upon the subject while in the hypnotic state. The bad effects of such suggestions are not alone confined to the hypnotic state, however, but are constantly being observed in the waking state in superstitious and susceptible individuals with equal or worse results than are ever to be observed in the hypnotic state, because with persons in the hypnotic state some degree of protection from shock is insured by reason of the general condition passively obtained during hypnosis where hypnosis (sleep) alone is indicated, and the patient left alone he quickly passes from the hypnotic sleep, into an ordinary sleep, to awaken sooner or later refreshed by his experience. The nervous chills, physical prostration and malaise complained of in this case on awakening from the somnolent state were due not to the state but to the suggestions and practices indulged in by those who had him under control and for which they should be held criminally liable. As to the possibility of inducing *diabetes mellitus* through emotional disturbance, I am not so clear, in fact, I am very doubtful whether such a condition could be thus brought about and should rather lean to the negative side of the question. Disturbance of the renal function is constant in persons suffering from intense grief or melancholia. Many cases of so-called Bright's disease are the result of prolonged nervous strain and this may have been such a case, but on this point I would rather be excused from answering positively except on more information than is given in the question that is forwarded me for answer. If such were the case, however, I should not attribute it to hypnotism but to the vicious practices and suggestions indulged in while the subject was under hypnosis. In conclusion, I should like to say, that the practice of hypnosis by the laity is to be depreciated in all instances and that laws should be passed by the legislatures of the several states conferring its use, not to the physicians alone, but to those physicians

who by study and scientific research have mastered the scientific application of this new old force.

Irving C. Rosse, M.D., replied as follows:

In answer to the hypothetical question submitted, I should say that in my view and opinion the glycosuria is in no way related to the morbid innervation brought about by hypnotic practice.

Glycosuria is extremely rare among negroes. Of many hundred I have examined for alleged kidney disease, sugar in the urine was found in but one instance, that of a messenger in the U. S. Treasury Department.

Diabetes of traumatic origin and the association of this disease with nerve changes are familiar pathological facts. The neurosis known as major hypnotism is also a pathological state, since animals become demented after frequent subjection to hypnotic influence, and the best authorities are that vascular changes in the brain with breaking down of nerve tissue associate themselves with hypnotism. Moreover, hypnotized subjects are observed to show exaltation of the special senses; over excitability of the muscular system, and diminished reflexes.

The injurious tendency of hypnotic practice to exhaust nervous force and weaken the will is spoken of by some authorities as a kind of moral masturbation that should be prohibited or restricted by legal enactment.

The fact of the defendant having been a subject of extreme susceptibility to hypnotic influence affords sufficient ground for the inference that he was also neurotic, and his nervousism was aggravated and increased by the existing renal impairment or glycosuria, which was not due or incident to alleged hypnotic or mesmeric experiment.

F. D. Crothers, M.D., of Hartford, says:

The hypothetical question presented by Mr. Bowen, Coroner of Chautauque County, N. Y., contains no facts from which any conclusions should be drawn that hypnotism was in any way an exciting or contributing cause of death.

There are no authentic facts on record to support the assumption, that hypnotic conditions including catalepsy, trance and repeated hypnosis are followed by organic disease of any kind. Least of all organic impairment of the kidney or its glycosuric function. It is possible that certain degeneration of the nerve centers may be increased by repeated hypnosis, but at present there are no facts to prove this. In this hypothetical question there could be no connection between *renal* derangement and extreme sensitiveness to hypnotic suggestion. One could and would not follow the other. There is no evidence so far, to prove hypnosis pathological.

The symptoms of debility following such states are not the result to be attributed to it; the derangement of the kidneys is a chemical and organic one, in diabetes, and not from psychic influences from objective sources.

This question offers no reliable suggestions along the line of observed facts up to the present; or indicates any reasonable possibility of the relation of cause and effect in this case.

Henry Hulst, M.D., of Grand Rapids, Mich., writes:

I received your letter with the hypothetical question, and will try to formulate my opinion at once.

Given an extremely sensitive subject of extreme susceptibility to hypnotic or mesmeric influence, protractedly and repeatedly hypnotized by amateurs are irresponsible persons, being stood and sat upon, etc., subsequent malaise and physical protraction on the part of the subject is not to be wondered at, especially as such amateurs and irresponsible youthful operators can scarcely be expected to know enough to prevent or remove such disagreeable after-effects.

As to whether symptoms of glycosuria directly or indirectly follow from psychic or emotional disturbance or derangement of nerve function involved in or due to the morbid innervation incident to such hypnotic practice or experimentation in "mesmerism" or alleged "animal magnetism," I must say that so far as I know no case of that kind occurs in literature.

The etiology of Diabetes Mellitus is still very obscure. It is produced artificially in animals by irritating a particular spot in the medulla. Beyond that but little is known positively. Osler says that "mental shock, severe nervous strain and worry precede many cases." He uses the word "precede" not "cause." Our knowledge of the disease is too obscure to warrant us in concluding that any given antecedent severe nervous strain and worry is the *cause* in a given case.

The question whether even the abuse of hypnotism can cause diabetes, it seems to me, ought to be answered in the light of the foregoing.

To attribute the diabetes to the use or abuse of hypnotism in the case on hand, would be, therefore, a mere speculation, and not an opinion based upon scientific observation, cannot be determined from the facts set forth in the hypothetical question.

Henry S. Drayton, M.D., of New York, says:

My Dear Sir:—Your favor, with enclosed hypothetical question, is at hand this P. M. Just at this time I can but give my opinion briefly with regard to the interests involved. Assuming the premises as stated by Dr. Bowen, I have no doubt that hypnotic treatment so practiced by "amateurs and irresponsible and reckless youthful operators, dabblers in hypnotism" was perilous to such a "sensitive" in both physical and mental side. The very fact of a neurotic dyscrasia would itself render me exceedingly careful in employing the hypnotic method should a patient so constituted be brought to me for treatment. The old "mesmerists" were pronounced in opinion against the experiments of careless and ignorant persons deeming them of a dangerous nature, and the more experienced of modern hypnotists are quite

in agreement that much injury may be done by unlearned and unskillful persons, who attempt experiments in hypnotic suggestion as for those who perform in this wise in public for the sake of gain and notoriety there is little doubt that their extravagant and senseless operations may be productive of much harm to the weaker subjects of their manipulation. Regretting lack of time for a better expression of my opinion, I am, etc.

James R. Cocke, M.D., of Boston, Mass., replies:

Dear Sir:—Concerning the coroner's questions, let me say briefly again, that I can readily understand how a person of exceedingly nervous, sensitive temperament could be so wrought upon as to induce an active hyperaemia in the *medulla oblongata*, where, as you know, in the floor of the fourth ventricle are centers which when disturbed unduly by chemical or other influences produce a glycosuria which might become permanent if inflammation succeeded to the state of active hyperaemia. However, I have hypnotized thirteen diabetics. Besides *diabetes mellitus* these patients suffered from severe secondary dermatoses, and in one case the patient suffered severely from dermatitis herpetiformis. In all these thirteen cases I succeeded in relieving the pain, dyspnoea, and to a certain extent the polydipsia and bulimia. The hypnotism did not seem to exercise any inhibitory influence over the excessive glycogenic formation. However, of course, have never been and never will be subjected to those ridiculous and criminal performances which have rendered the name of hypnotism odious in so many places.

I use hypnotism as a sedative and in these cases find that it makes no difference whatever in the amount of solids excreted by the kidneys. The revolving mirror and other exciting agencies of the kind will produce temporary albuminuria with subsequently a very fatal disease in the young. It is, of course, attributed, as you know, first, to disease of the *medulla oblongata*, secondly, to disease of the pancreas. The result of the post mortem sent by you is so incomplete as to make a decision of the individual case impossible. I believe, however, that the so-called hypnotic subject was an hysterical subject and that the excessive states of nervous excitation, could have been hastened, perhaps precipitated *diabetes mellitus*, granting that there was a peculiar vulnerability either of the centers of the *medulla* or of the tissue and other nervous mechanism of the pancreas. *Diabetes mellitus* in the young in my experience is an aggravated form of disease. The polydipsia and bulimia cause such intense suffering as to make it impossible for a subject to endure long the hypnotic experiments described. There is a form of intermittent glycosuria which has no etiological basis so far as we can discover.

Diabetes mellitus is not necessarily attended with renal degeneration, although a secondary nephritis of the parenchymatous type is often seen in cases of long standing. In the young, renal degeneration is seldom extensive. These conclusions are the result of forty-one post mortems made by me and also based upon the authority of Keating's encyclopedia, "Diseases of Children."

Prof. C. H. Hughes, of St. Louis, says:

Dear Sir and Colleague:—Extensive observation of the hypnotic state and of the effect of repeated and long maintained hypnotism on the same subject, has convinced me of the deleterious effect of the often-repeated and long continued hypnotic state on the nervous systems of its subjects, especially its damaging effect on the inhibitory centres of the brain which regulate the normal volitions and the natural spontaneity of the mental operations of the individual. The repeatedly and continuously hypnotized subject becomes a more or less changed man as compared with his normal state and to this extent, is in an insane state of mind with this difference from the ordinarily insane person, that his change of mental character is chiefly subject to the directing influence of another person rather than to his own perverted and abnormal volition as is the case with the ordinary insane person. But he may become as insane and diseased in brain as an ordinary lunatic.

In the case above submitted, I think it not at all improbable that the brain in the region of the fourth ventricle which contains the diabetic centre of the brain was damaged by the repeated hypnotisms, and that the diabetes itself resulted therefrom, as puncture of the floor of the fourth ventricle causes, in animals, the phenomenon of diabetes or glycosuria, and it is often also the result of psychic overstrain. Because of this experimental psychological fact of a diabetic center in the brain, and the clinical evidence of psychical impressions as in diabetic melancholia, as it is called, but which is the diabetes of the nerve exhausted state of melancholia or melancholic diabetes, diabetes and vaso-motor effects and blood congestions are not unlikely to result from hypnotic experimentation too long maintained or too often made.

Physical injuries also, doubtless, resulted to kidneys and abdominal viscera from the violent usage of the subject while in the hypnotic trance state, especially while in the condition of cataleptic rigidity, stretched from chair to chair, resting in opisthotonos attitude on head and feet, with persons walking on his abdomen or sitting or putting weights on him or pounding him.

There are other causes of diabetes, however, such as excessive feeding, with sedentary habits and discontent, melancholia, etc., in plethoric, inactive persons.

I could not answer this question definitely without knowing whether there pre-existed other probable causes of the slight brain softening and trace of kidney deterioration, but the result referred to in the interrogatory is not impossible after long, excessive and continuous hypnotic influence.

Prof. Thos. Bassett Keyes, M. D., of Chicago, writes:

Yours of February 1st, in regard to the hypothetical question, as to whether diabetes mellitus, as in the case referred to of Spurgeon Young, might result from improper handling, suggestions and impressions under hypnotism, is at hand and briefly considered.

From what we know of the psychological action of suggestion, after hypnotism, it leads me to say that, since blisters have been drawn, hæmor-

rhages made to appear or stop, sores to heal, inflammation and swellings to disappear, glands and organs to become active or slow, according to the suggestions; since the tissues in every part of the body may be influenced, and from what we know of the etiology of diabetes mellitus; viz., that it is sometimes the result of irritation of the vaso-motor areas of the floor of the fourth ventricle, and since this irritation may result from shock, mental labor, and strong excitement and emotion, it leads me to say that if improper suggestions were made to a hypnotized subject—such as suggestion to cause excessive fear or shock, or any but properly directed psychological suggestions—they would have a deteriorating or abnormal stimulating influence upon the body and nervous system generally, and such shock, deterioration or abnormal stimulation might produce, it seems very probable, the disease—*Diabetes Mellitus*, or if the subject was improperly handled (the suggestions being also considered) a local or central hyperemia of the floor of the fourth ventricle might be produced. "Mechanical irritation of this region produces glycosuria."—Loomis.

Other questions might be considered, as the stimulation of certain ganglia so as to produce excessive activity and assimilative processes.

Dr. N. O. B. Wingate, of Milwaukee, Wis., says:

Dear Sir and Colleague:—Yours of the 6th inst. received and contents noted. I enclose herewith a copy of the hypothetical question which you submit to me for reply, and will answer it as follows:

I do not believe diabetes mellitus would follow in the treatment, but given a case where diabetes mellitus existed, I believe such hypnotic practice as related in the question would be decidedly injurious.

Mr. Sydney Flower, of Chicago, replies:

My Dear Colleague:—The Coroner's question may be condensed, may it not? into "Do hypnotic experiments, performed with a subject who is in the cataleptic state, produce physical injury or organic impairment in that subject?" I should think it most unlikely, and cite in defense of this position two significant facts, namely: 1st, That there are no instances on record of injury having resulted to anyone by such practice; and 2nd, That in the case of a greater weight being placed upon a cataleptic subject's body than he is able to support he will bend beneath it. In other words, catalepsy is a stiffening of the muscles of the body by voluntary effort under the suggestion of the operator; although, occasionally, the same state may be induced by the auto-suggestion of the subject. Only a certain small percentage of hypnotic subjects become good cataleptics, and this important fact was emphasized by Dr. Parkyr, superintendent of the Chicago School of Psychology, when I submitted to him the Coroner's question. The point he makes in this connection is that few people have a natural aptitude for

these experiments; and that though one subject may be, while under suggestion, capable of making his body rigid; another may fail utterly. Also that while one may stiffen certain muscles of his body, he may not be able to stiffen all, and lastly, that the boy who can, while in hypnosis, sustain a weight upon his stomach, when suspended between two chairs, can also perform the same feat while in the waking condition, and that the catalepsy is largely dependent upon his habit of life, muscular formation, and training or practice in these experiments. Seeing then that a subject who has not in himself the muscular power necessary to support a weight, will not do so, but will bend under it, and that a cataleptic subject will come out of the cataleptic condition and his muscles naturally relax, when the limit of his endurance in this direction is reached, it becomes evident that a rigidity is by no means the formidable condition it is commonly represented to be. As I am not a doctor of medicine it would be presumptuous in me to comment upon the finding that this boy, Sturgeon Young, died of diabetes supposed to be induced by his performances while in a hypnotic condition. But I wish to know if diabetes manifests itself with the rapidity here indicated; and if it has ever been shown that a pressure upon the abdomen results in a strain of the kidneys.

As to the responsibility in the case, it seems to me that no authority upon hypnotism will deny that this boy was conscious of the fact that these experiments were to be tried upon him. He was not a persecuted infant, compelled by a stronger will than his own to perform muscular feats which were liable to injure him. He was in the position of an athlete who is willing for applause, or for gain, to test his strength in a certain manner. I do not think he injured himself by the performance of these feats, but admitting, for argument's sake, that he did, where lies the blame? He need not have consented to anything of the kind, but he voluntarily, and of his own free will, knowing well what he was expected to do, undertook to perform these experiments. I have always denounced somnambulistic performances which had no scientific aim, as foolish and dangerous. They are foolish, because when it is clearly understood that the subject is a conscious agent, they can have no special interests as experiments, but depend for their attraction upon the mystery which is ignorantly impressed upon the spectators by the uninformed operator. They are dangerous only because of the want of knowledge of the operator in properly removing all suggested delusions—but even here, we can only assume a danger to exist. There have been no instances of evil effects resulting from even a careless use of hypnotism, and it is only by inferential reasoning that the best writers define the dangers of hypnotism. I think that both the experienced and the inexperienced operators are prone to magnify both the dangers and benefits of hypnotic suggestion.

With reference finally to these experiments, I should place cataleptic exhibitions in the "foolish" class, and sense delusions in the "dangerous."

Dr. Fred. Laidlaw, of New York, says:

From the account of the autopsy given, it is my opinion that diabetes mellitus was the probable cause of death. It is my further opinion that the frequent practice of hypnotic experiments had no relation whatever to the diabetes. In my opinion, it is not possible to produce diabetes mellitus by the practice of hypnotism, nor, if the disease is already present, will it be aggravated by hypnotic experiments any further than is involved in the general proposition that, in any diseased condition, all exertions that exhaust the patient, render him more susceptible to the inroads of his disease.

Dr. Jas. T. Searcy, of Tuscaloosa, Ala., writes:

I think it a very plausible opinion that the disease of Diabetes Mellitus, of which, or with symptoms of which, the young man under consideration was said to have died, could have been occasioned, or could have been aggravated to a fatal termination, by the continued and excessive hypnotism to which he was subjected during the six months prior to his death. Hypnotism is always a strain and often a serious danger to the brain, particularly if carried to excess or repeated for months in a case evidently of weak cerebral ability as this one seems to have been. In my opinion, sensitiveness to hypnotic suggestion is always an indication of cerebral (cortical) weakness or abnormality. In that particular and in that way the person is weak.

Diabetes is much more a disease of the brain or of high nerve structure than of either the liver, which produces the sugar, or of the kidneys, which eliminate it. The frequent and severe strains to which, not only the brain of the young man was subjected, but also his whole system could have occasioned a disease of brain structure, which was the first cause of the diabetes, or have very much aggravated it, if, by heredity, or by any other cause, it had already begun.

This answer is given within the limits of the hypothetical question proposed by Dr. Bowen, and does not take into consideration other injuries to internal organs, which your letter refers to, and also supposes the cause of death to have been only the diabetes. The cerebral softening mentioned may be the pathological condition of which he died or may have been the pathological source of the diabetes.

If the diabetes was of sufficient degree or of sufficiently long standing to have been the cause of death, you could, with great plausibility, advocate that it had been occasioned in a subject inclined to it, and had been aggravated, after it was begun, by the hypnotism he was subjected to, though there is no positive or direct proof, pathological or otherwise, connecting the hypnotism with the diabetes.

Prof. A. A. D'Ancona, of San Francisco, replies as follows:

Dear Sir:—Your favor requesting answer to hypothetical question asked by the Health Officer of Jamestown, N. Y., is at hand.

It seems to me that doctors who conducted the autopsy are under a misapprehension regarding the pathology of diabetes. The kidneys are not the seat of the trouble. They simply eliminate sugar from the blood when it is in quantity too great for the needs of the system, or in a form not assimilable by the tissues. The doctors should have examined particularly the liver and pancreas.

Furthermore, diabetes can not be predicated on account of the presence of one symptom, namely, glycosuria. This symptom often comes from mere excess of sugars and starches in the food. So well recognized is this, that the large Life insurance companies instruct their examiners not to reject applicants on account of glycosuria, unless associated with the rational signs of diabetes. That it was not so associated is probable, first, because the hypothetical question is silent upon the subject of the rational signs; and, secondly, because one of the most marked symptoms of diabetes is progressive emaciation in spite of a voracious appetite and the subject in this case is described as "well nourished."

Though the causation of diabetes is obscure, many cases have been considered to be due to nervous shock, emotion, anxiety; many to injury and disease of the nervous system, to severe mental and physical strain, to blows upon the abdomen, etc., etc.

It is certainly possible that the experiments outlined in the hypothetical question overtaxed the physical and mental powers of the subject. This combined with the supporting of heavy weights upon the abdominal walls may have produced profound functional changes in the abdominal viscera, diabetes being one of the affects.

It is nevertheless true, that for the majority of cases of diabetes, no cause can be assigned. Owing to the uncertainty of the etiology of the disease, to attribute positively the cause of death to diabetes induced by functional nervous disturbance of the abdominal organs, the result of hypnotic experiments, however unskillful, seems to be unwarranted.

Dr. J. D. Buck, of Cincinnati, replied as follows:

In my opinion grave physical injury would arise from the foregoing procedure: first, impairment of the nervous system, and finally imbecility. See reports of experiments of schools of Paris, Norway and others. Cerebral softening and diabetes might result from repeated hypnosis. The practice is harmful under all circumstances except in the hands of skillful physicians for the treatment of disease, and even then in a narrow range of diseases and with doubtful results. In all other cases it is dangerous and should be suppressed by law and with severe penalties.

This hypothetical question and my accompanying letter have been sent to other experts of position and prominence

connected with the Medico-Legal Society and the Psychological Section whose replies are not yet received.

I have not formulated my own opinion upon the case, preferring to wait until I shall receive a more complete and detailed statement of the autopsy, which, in my opinion, should throw all necessary light upon the question propounded by the Coroner.

The case presents some interesting questions and will, I do not doubt, excite interest among students of the science on both sides of the Atlantic.

I sent the question to Prof. R. Virchow, of Berlin, one of our honorary members and other eminent members abroad and the case will serve to call attention to a new field of inquiry upon this interesting subject.

NOTE.—The following additional information was furnished by the Coroner after the verdict.

The autopsy was as follows, though it was not furnished to any of the experts who replied to the hypothetical question:

Examination of body of I. W. Sturgeon Young at the home of his father, 1033 North Main Street.

Height, 5 feet 7 inches. Age, 17 years. Weight, (estimated) 125 lbs.

Drs. W. M. Bemus, Phillips and Rice present, also Coroner Dr. Bowen. Drs. W. M. Bemus and Phillips operating.

Rigor mortis well marked. Body fairly well nourished.

1. Examination of brain. Incision from ear to ear through scalp, and tissues dissected and scalp reflected forward and back. (6 oz. urine drawn by catheter) Coroner went away at 1 p. m. Cranium removed. Brain removed. Dura matter, normal. Pia matter and arachnoid, normal; some small tubercles upon both sides of longitudinal fissure of cerebrum. Brain slightly softened on left side of cerebrum. White and gray matter, normal. Weight, 48 oz.

2. Chest opened. Lungs, normal. Cerephagus and trachea, normal. Pericardium, normal. Heart, normal. Weight 8 oz. Valves all normal. Diaphragm, normal. Liver, weight 3½ lbs., normal in appearance. Bowels contained scybala. Stomach, normal, but distended with gas. Pancreas small, but normal. Kidneys, left, hard, red, small; right, hardened, small, with small tubercles in tubules of kidney. Spleen, small, dark, soft. Spine, normal; no evidence of external injury.

3. Urine. Reaction, slightly acid. Sp. gr. 1.020. Phosphates present. No albumen. Sugar in large amount.

WILLIAM M. BEMUS,
C. I. PHILLIPS,
A. B. RICE.

The evidence of the attending physician, A. B. Rice, M. D., was:

That he treated Young from January 14, 1897, to the time of his death; on the 20th of January, he was confined to his bed and passed very large quantities of urine, three or four gallons per day.

On analysis the urine was found to contain large quantities of sugar. Dr. Rice diagnosed the disease as Diabetes Mellitus. Young complained of pain in his back, was very weak, had an inordinate thirst, voracious appetite, observed daily loss of strength, but kept his mental faculties, though at times he would lapse into a stupor.

The verdict of the jury was as follows:

We find that J. W. Sturgeon Young came to his death at 1033 North Main street in the city of Jamestown, in said county, on the 24th day of January, 1897, from diabetes and nervous exhaustion caused by hypnotic practices performed by the following persons as shown by the evidence: R. Louenstein, Daniel H. Grandin, Parke H. Davis, Charles Wood, Edward P. Dodge, Robert Bemus; and from the testimony produced before us upon the inquest it appears that the said J. W. Sturgeon Young for several months prior to his death had been habitually and continually hypnotized by the above-mentioned persons and that while under the hypnotic influence, his body was suspended between two chairs, the back of his head resting on one chair and his feet upon another without other support and that while so suspended a person weighing at least 180 pounds sat upon him; that he had also while under such hypnotic influence been carried through the various stages of intoxication and delirium tremens and other hypnotic tests.

We would recommend that the state legislature pass a law prohibiting the practice of hypnotism.

I was unable to give an opinion on the hypothetical question alone, and did not receive the autopsy or the statement of Dr. A. B. Rice, the attending physician, until after the verdict was rendered.

NOTE.—Though this case is incomplete without a careful microscopic examination of the brain and a more thorough clinical record of Sturgeon Young, we give the record and opinions place in our pages because this is the first case of the kind in court annals of hypnotism or supposed hypnotic influence in engendering disease in a hypnotic subject.—C. H. H.

ENCEPHALITIC AND LATE EPILEPSY.

By JAS. G. KIERNAN, M. D., Chicago.

Foreign Associate Member French Medico-Psychological Association; Fellow of the Chicago Academy of Medicine; Professor of Forensic Psychiatry Kent College of Law.

EPILEPSY occurring after 25 and that due to encephalitis have points of special interest in common. Epilepsy following on the various forms of infantile encephalitis exhibits in my experience many peculiarities. It is more apt to be accompanied by trophic phenomena of the extremities varying from the simple "dead fingers" to phenomena nearly approximating Raynaud's disease. It reacts badly to the bromides. Mental symptoms, fits of temper, of sullenness, of depression, or even destructiveness, replace under the bromides the convulsive attacks. The tendency to impairment of the circulatory innervation of the extremities is increased. The various bromic dermatoses appear with comparatively great frequency. In not a few instances, these eruptions have proven unduly severe and protracted. A nocturnal mental type takes the place often of the convulsion. It is attended by phenomena closely resembling those of somnambulism. In some few instances an intense pruritus results. While the dermic phenomena due to the bromides yield to arsenic, calcium sulphide, etc., still these ameliorations are very temporary and the original phenomena recur after a time.

As Spitzka* has pointed out epilepsy is a diseased state of the encephalon without a palpable characteristic lesion, manifesting itself in explosive activity of an unduly irritable vaso-motor centre, leading to complete or partial loss of consciousness which may be preceded or followed by various

*N. E. Medical Journal 1881.

phenomena expressing the undue preponderance of some and the suspended inhibitory influence of other cerebral districts. The patho-anatomical changes found in patients suffering from this disease throw but little light on pathological physiology. Certain vascular phenomena accompany an epileptic attack so constantly that they have been considered the fundamental essential factor of epilepsy. Suddenly produced anaemia of the higher nerve centers will, it is true, produce convulsions. But it does not follow that the arterial spasm is the direct cause of the epileptic fit. The convulsion while a phenomena of the fit, is neither an initial nor is it as constant as it should be were the Kussmaul-Tenner theory correct.

Nor does the discharging lesion theory of Hughlings-Jackson explain the phenomena of epilepsy. That an irritative lesion of different portions of the brain may result in epileptiform explosions is no proof that the idiopathic epileptic attack has a similar origin and is due to similarly located foci of impalpable disease. Take an inflammatory softening on or near the cortical area which stands in a relation to the muscle of the arm; epileptiform spasms may be a symptom of such a lesion and they may begin in the particular muscle whose "center" is affected, they may then extend to the other muscles of that half of the body or suddenly to the entire voluntary muscular system. Is that proof that the epileptic "discharge has extended through the cortex by irradiations?" It does not seem that this could be maintained in cases where the transition from the localized or, as it were, "focal" spasm to the general convulsion was sudden. It seems more probable that the primary irritation had determined a secondary irritability of the great convulsive center of the body, namely, the reticular gray matter of the brain isthmus particularly of the pons and medulla. Starting with the fact that all characteristic features of the full epileptic onset can be produced in animals deprived of their cerebral hemispheres working, a satisfactory hypothesis of the nature of epilepsy can be obtained. It needs but a

slight puncture with a thin needle to produce typical convulsions in the rabbit and some of the convulsive movements reported by Nothnagel have not only shown the true epileptic character but also that peculiar automatism noted in aberrant attacks. It is in this segment of the nervous system that all the great nerve strands conveying motor impulses both of a voluntary and automatic and some of a reflex character, are found united in a relatively small area, and just here a relatively slight disturbance might produce functional disturbances involving the entire bodily periphery.

The experiments of physiologists have shown that if a sensory irritation of a given spinal nucleus be kept up, after having produced a reflex movement in the same segment, if there is any reaction beyond the plane of that segment at all it is not in the next or succeeding planes but in the medulla oblongata. The motor reaction then manifests itself in laughing, crying or deglutitory spasms and, if the irritation be of the severest kind, epileptic or tetanic spasms in addition. Now the occurrence of laughing, crying or deglutitory spasms could be easily understood if the molecular oscillation induced by the irritation were to travel along the associating tracts from the given spinal segment to the nuclei of the medulla oblongata. For in the medulla there are found the nerve nuclei which preside over the facial, laryngeal and pharyngeal muscles. It is not easy at first to understand how tetanus and epilepsy, that is, spasms consisting in movements whose direct projection is not in the medulla oblongata but in the cord, can be produced by irritation of the former.

There are scattered groups of nerve cells in the medulla oblongata which have either no demonstrable connection with the nerve nuclei or are positively known to be connected with the longitudinal associating strands. These cells hence can safely be regarded as representing a presiding center over the entire spinal system. No spinal center exerts any influence even remotely as pronounced as that of the entire cord. This applies to man and other mammals. That the elaboration of the medullary centre was as gradual a process as that of other higher differentiations is

illustrated by the case of the frog whose medulla has acquired the faculty of reproducing general spasms while the spinal cord itself retains this property also; hence here the predominance of the medulla is not so marked as in mammals.

The reticular ganglion of the oblongata is not in the adult a part of the central tubular gray matter but has, through originally developing from it in the embryo, become ultimately isolated from its mother bed. It constitutes a second ganglionic category and the association fibers bringing it in functional union with the spinal gray (first category) in lower animals and shown to have assumed the position of projection fibers in the higher to constitute a second projection tract; both together are a second projection system. The scattered gray matter of the medulla has an (inferentially) great importance. Anatomically it is (though its cells be scattered diffusely as a rule) a large ganglion with numerous multipolar cells of all sizes many of them of gigantic size sometimes exceeding the so-called motor cells (which they simulate in shape) of the lumbar enlargement in size. Scattered in the "reticular substance" of the medulla from the upper end of the fourth ventricle to the pyramidal decussation they merit the collective designation of reticular ganglia.

The cells of the reticular formation are known to be connected with the nerve nuclei on the one hand, and with longitudinal fasciculi which since they run into cord, terminate either in the gray matter (or the nerve roots directly) for nerve fibers do not terminate with, as it were, blind ends. Now in the mammalian brain the reticular ganglion lies scattered among fibres which come from the higher centers and the interpellation might be made whether after all, the reticular ganglion be not a mere intercalary station for fibres derived from a higher source. That originally the ganglion was an independent station there can be no reasonable doubt for in reptiles this body of cells is too considerable to account for a termination in them of the few cerebral fibers possessed by these animals. And on the other hand the vertical strands are notably increased in

their passage through the field of the medulla oblongata.

The medulla oblongata with its reticular ganglion seems to be the great rhythmical center. In fish, the movements of the operculum and mouth, in sharks those of the spiraculum; in perenni-branchiate, amphibians the branchial tree, in the infant the suctorial muscles, in all vertebrates the movements of deglutition, of the heart and respiratory muscles, all movements presenting a more or less regular rhythm, are under the control of the medulla oblongata. The early differentiation of the part of the cerebro-spinal axis is without doubt related to the early manifestations of rhythmical movements in the embryo and their predominant importance in lower animals. The possibility should not be excluded that a rhythmic movement may be spinal, nay even controlled by peripheral ganglia (heart of embryo). A higher development however implies the concentration of rhythmic enervations at some point where that anatomical association may be effected, which is the expression of the mutual influence these movements exercise among themselves.

Two sets of phenomena need be borne in mind in studying, the physiological pathology of the epileptic attack. First, the condition of the epileptic in the interval. Second, the explosion itself. Too much attention is paid to the last, too little attention to the first. The constitutional epileptic is characterized by a general deficiency of tonus associated with exaggerated reaction and irritability. Thus the pupils are at once widely dilated and unusually mobile. The muscular system though generally relaxed manifests exaggerated reflex excitability. The mental state is characterized at once by great indifference and undue irascibility. In the same way the vascular system is depressed in tone in the interval with rapid marked changes under excitation. The state of the nervous system as a whole Spitzka forcibly compares to that of an elastic band which being on the stretch continually, is apt to overshoot its mark when one end is let go. Under normal circumstances the band is less stretched and hence not as liable to fly so far when the check is removed.

An irritation which, in health, produces restlessness of the muscular system, accelerated respiration and pulsation, and various mental phenomena within the normal limits, in the epileptic results in more intense phenomena in the same direction. The nervous irritability of the epileptic manifests itself in one direction especially. An important vaso-motor center for the brain vessels exists possibly diffused through an area somewhere between the thalamus and subthalamus region above and the pyramidal decussation below. The irritability of this center results in the sudden arterial spasm in the carotid distribution (so characteristic a feature of the fit onset); simultaneously with the contraction of the vessel, the pupil undergoes an initial contraction, and relaxation instantly results in both cases. The sudden interference with the brain circulation produces unconsciousness, and destroys the checking influence of the higher centers on the reflexes in a manner analogous to any shock affecting the nerve centres. In the meantime while there has been a sudden deprivation of arterial blood and a sinking of intracranial pressure so far as the great cerebral masses are concerned there has been as sudden an influx of blood to the unaffected district of the vertebral arteries whose irrigation territory is now the seat of an arterial hyperaemia. The result of this is that the great convulsion centre the medulla being overnourished, functional excess, that is, convulsion, occurs unchecked by the cerebral hemispheres which are disabled by their nutritive shock. The unconsciousness and coma of epilepsy more resemble shock than they do cerebral anaemia or syncope. The impeded return circulation of venous blood now comes into play. The contraction of the neck muscles explains this obstruction and the accumulation of venous blood in the cerebral capillaries of the medulla especially. Meynert's opinion, that this venous blood by the formation of cyanide-like substance acts as a toxic agent and produces the severer symptoms noted during the post convulsive period, has been recently supported by the finding of convulsant urine toxins by Fere.

In addition to those sustaining the "rubber band" analogy the following facts tend to demonstrate the view

just expressed. First (a) the contraction of the retinal artery (b) the initial and very brief contraction of the ordinarily dilated pupils; (c) the sudden pallor of the countenance. Second (a) the secondary expansion of the retinal arteries; (b) the secondary dilation of the pupils; (c) the secondary flushing of the face. Third the post-mortem appearances found in those dying immediately after severe convulsive seizure.

True epilepsy presents an enormous number of sub-groups, exhibiting every variety of deviation from the ideal convulsive form, and the existence of these forms tends to demonstrate the views just expressed. In ordinary petit-mal the initial arterial spasm has but to be confined to the surface of the hemispheres leaving the thalamic ganglia undisturbed and it can readily be understood how the momentary unconsciousness or abolition of cortical function can occur without the patient falling, his automatic ganglia still carrying on their functions. At the same time with the lesser spasm there would be a less extensive sinking of intracranial pressure and less consecutive collateral hyperæmia of the lower centres and therefore no convulsion.

As Meynert has suggested, in certain cases the arterial spasm may fail to affect the entire cortical surface simultaneously, some one trunk may be more pervious and as afflux of blood may occur in its special field where certain impressions and motor innervations are stored; the result will then be that the function of the relatively well nourished territory will be excited. If it be a visual perception territory, sights, colors or luminous spectra will be seen, if it be an olfactory territory, odors will be smelt, if a tactile center, crawling, tingling and cold sensation, if a speech center, cries, phrases and songs may be observed. This explains the manifold epileptic aura which is simply an isolated exaggerated limited cortical function. The recurrence of the aura is readily explainable on the ground of the well known physiological law that any nervous process, morbid or normal, having run through certain paths, the same paths will be the paths of least resistance for that process to follow in the future. To an extension of the same conditions are due the

peculiar convulsive equivalent and post-epileptic mental states.

Encephalitic epilepsy while in many cases possibly Jacksonian at the outset but too often becomes an epileptic constitution with all the phenomena of idiopathic epilepsy underlaid by the pathology just enunciated.

After the age of 25 and most frequently between 35 and 40 in persons with no very decided neurotic heredity and in most of whom lines can be excluded, occurs an epilepsy which resembles in many respects the epilepsy from encephalitis. As a rule in these cases, which I have found equally divided as to sex, there has been a precedent period of nervous exhaustion attended by vertiginous states as its later development.

These vertiginous states are often preceded or followed by anomalous sensory disturbances frequently compared by the patient to "waves." They pass into states attended by loss of or dazed consciousness with or without motor explosions. Some of these vertiginous states even when with consciousness are attended by localized jerking of groups of muscles.

All these phenomena are clearly due to toxins resultant on nerve exhaustions which produce the effect that Meynert long ago showed was due to them in ordinary epilepsy. Under normal circumstances, the toxins and ptomaines which are produced in the organism are eliminated by various channels. Some of these products are transformed in the alimentary canal into innocuous substances; gases are eliminated by the lungs, other compounds are intercepted and decomposed in the liver; lastly, certain effete products are eliminated by the kidneys and skin. When any of these emunctories is interfered with in the discharge of its functions the phenomena of auto-intoxication make their appearance. This is observed in certain affections of the alimentary system for example, which are attended by such symptoms as headache, pallor, hypochondriasis, etc. These manifestations which are the result of a chronic auto-intoxication were not improperly attributed by the older writers

to disturbance of the hepatic functions. As Schopfer* has lately shown the liver, by its peculiar intrinsic action due to the specific activity of its cellules, can diminish the toxic power of the alkaloids with which it is brought into contact. Such action is manifested not only in the case of poisons introduced through various channels into the organism, but also in the case of poisons elaborated internally within the organism itself in consequence of putrefactions of the products due to the activity of the tissues. He hence advises intestinal disinfections and special alimentation so as to obviate or to minimize "auto-intoxication in all maladies in which the liver does not perform its functions normally." One therapic great element in preventing the recurrence which constitutes the "epileptic habit" is hence diet. As a rule the epileptic should be limited chiefly to a farinaceous diet. This should be varied in itself and by slight amounts of the more digestible meats, beef or mutton. Berries or small seed fruit, pine apples, bananas, parsnips and turnips should not be eaten and the amount of potatoes should be limited. Large quantities of water should be drunk. In this way the necessity for artificial intestinal antiseptics will be greatly limited.

As Dr. J. M. Soniah remarks: "Recent biochemical researches by revealing the action of toxins, ptomaines, and leucomaines, have thrown much light on the action of a class of remedies which the older therapeutics called alteratives which Headland however denominates catalytics. This class of remedies as Headland points out has the following action. They act in the blood and their effect is permanent. Each of itself tends to work out a peculiar operation in the blood. The diseases in which they are used depend on certain morbid materials or actions in the blood. The result of the action of a catalytic medicine is in some way to neutralize or counteract some one or more of these morbid processes. These medicines are all unnatural to the blood and must at length pass out of the system. These properties indicate their use in incipient sclerotic states.

**American Medico-Surgical Bull* 1894.

The recent development of biochemistry and bacteriology demonstrates that organic compounds produced by bacteria and by metabolism are the origin of secondary pathological tissue change. Scleroses of all types may result from such action. Behind many forms of cirrhosis, renal, hepatic or gastric, is the ptomaine or syphilis.

The foremost metallic alteratives are arsenic, gold and mercury. Gold is an old remedy but early in the seventies came into prominence because of its affinity for nerve tissue when used as a stain in preparation of microscopical sections. These remedies were found to act best in combination with chlorine, iodine and bromine while all of these last had an alterative action chlorine and iodine were long the chief favorites. Bromine widely used in neuroses attracted less attention as an alterative although when first discovered it was chiefly so used. Dr. Jas. S. Jewell* who incidentally noticed through its employment in neuroses that bromine seemed to have a specific action on the formation of connective tissue, remarks:

“Some years ago I called attention to a class of cases in which there was chronic diarrhoea or a tendency toward looseness of the bowels, more or less gastric catarrh, sallow skin but clear conjunctiva, gastric uneasiness, habitual deficiency or absence of bile from the bowel discharges and clearly evident (from palpation and percussion) hepatic contraction. In these cases there is actual hepatic atrophy. In them the persistent use of bromine internally has had good results. Its action is slow and it must be continued for months to be of permanent benefit. The bromine is given in distilled water ten drops of the liquid bromine to the ounce of water. Five drops of this solution should be given thrice daily to begin with. The dose should be increased one drop daily until it is plain the stomach will no longer tolerate a large dose. If the stomach become irritable as a result of the remedy it may be desirable to reduce the dose to one or two drops or even cease its use altogether for a time, to resume when the stomach will tol-

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erate it again. It should be given in a considerable quantity of water as it is likely to irritate the stomach otherwise. Under the use of bromine I have usually seen after a time less disturbances in the gastric zones, less diarrhoea, a reappearance of bile in the discharge from the bowels and a slow but decided improvement in the patient's general health.

The alteratives are hence peculiarly suited for treatment of states due to toxins even antecedent to sclerosis. By destruction of the toxin through stimulus of hepatic action and elimination they tend to prevent its accumulation and the phenomena resultant on this. The alkaline bromides do not seem to exert this influence, hence in no small degree their untoward effects. Of late, metallic bromides have been (it is claimed) united in a compound the liquor arsen, auri, et hydrargyri of Barclay (arsenauro). This compound in the types of epilepsy to which allusion has been made, has given undeniably excellent results. Twenty drops in four doses daily are given gradually increased by two drops daily until slight sialorrhoea or looseness of the bowels occurs when the dose is reduced by two drops. None of the untoward effects of the bromides have been observed and cases stupefied by them have reacted excellently. Like all beneficial affects of alteratives, improvement is at first slight but increases in geometrical progression.

Of course certain symptoms require special treatment and an excellent adjuvant to dietetics and the alterative treatment is nitro-glycerin, which a little less than two decades ago, acting on basis of the morbid phenomena described, was introduced on therapeutical grounds without reference to bromide untoward effects. It was found by neurologists that it had neither the tendency to produce mental symptoms by suppression of the epileptic discharge nor yet the distressing dermic phenomena. Spitzka found it of especial value given at shorter intervals than the bromides in 1-50-grain doses. Trussewitch points out that it should be used when there is a defect in the equilibrium of the vascular tone and the blood is irregularly distributed.

It causes a rush of blood to the anaemic district or unloads the hyperaemic. He finds, as did Spitzka, that after a time there comes a toleration of the drug. It should then be dropped for one or two weeks when susceptibility will be regained. Osler finds that the physiological effects must be apparent before good results are obtainable. It controls, given on the principles indicated, the restlessness, the temper, as well as the motor phenomena of these epileptics. It is best given eight times daily in 1-250 grain doses.

PSYCHOSES OF OLD AGE.

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THE psychology of normal old age, as Clouston remarks, has yet to be written from the purely physiological and brain point of view. Poets, dramatists, and novelists have had much to say of it from their standpoint. King Lear is beyond a doubt a truthful delineation of senility partly normal and partly abnormal. By normal senility Clouston means "the purely physiological abatement and decay in the mental function running *pari passu* with the lessening of energy in all the other functions of the organism at the latter end of life. No doubt, in an organism with no special hereditary weaknesses, that had been subjected to no special strains, all functions except the reproductive should decline gradually and all together, and death would take place, not by disease in any proper sense, but through general physiological extinction. The great function of reproduction stands in a different position from all the other functions of the organism. It arises differently, it ceases differently and it is more affected in character according to the sex of the individual than any other function. It is, as a matter of fact, not entirely dependent on individual organs. It may exist as a desire and an instinct without sexual organs. It is probably an evolution from hunger. It is really an essential all-pervading quality of the whole organism, and to some extent of every individual organ, not one of which has entirely lost the primordial fissiparous tendency to multiply. But the

physiological period of the climacteric has determined and ended it in its intensity and greater power, though many of its adjuncts remain; and in the male sex we have to reckon with it and its abnormal transformations to some extent even in the senile period of life.

„Physiological senility typically means no reproductive power, greatly lessened affective faculty, diminished power of attention and memory, diminished desire and power to energize mentally and bodily, lowered imagination and enthusiasm, lessened adaptability to change, greater slowness of mental action, slower and less vigorous speech as well as ideation, impaired muscularity and co-ordination, a changed tone of voice, fewer blood-corpuscles red and white, lessened power of nutrition in all the tissues, a tendency to disease of the arteries, a lessening in bulk of the whole body, but notably of the brain, which alters structurally and chemically in its most essential elements, the cellular action and the nerve currents being slower, and there being more resistance along the conducting fibres.”

Dr. F. P. Norbury*, like Clouston, finds that the psychological study of old age is rendered difficult by the blending of the normal and abnormal mental states. That it is easy to confound ordinary functional derangements with organic brain disease in its earlier manifestations, we are oftentimes forcibly reminded. This difficulty of diagnosis and classification must be experienced to be appreciated. He has been struck by the heterogeneous symptoms yet similarity of mental affections when modified by the influence of senility, in a study of 196 cases of insanity occurring in men of over 60 years of age. Senility seems to be more or less, a common mould in which the mental disorders of age are cast, for the mark of senile change is on them all. It is because of the modifying influence of senility that confusion arises as to differentiation. While it is true, senile dementia is the only characteristic alienation of mind which in its uncomplicated form, conforms more to a distinctive type than any one form of insanity at any age, yet other

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types occur in the aged as much entitled to consideration both pathologically and symptomatologically as senile dementia.

Chronic cerebral atrophy, often classed as senile dementia, is the most prominent type to be considered. It is seldom, if ever, given in hospital reports as a form of senile insanity having a distinct pathology and recognized symptoms. In fact it is most always classed as senile dementia. Chronic cerebral atrophy is not necessarily confined to what is ordinarily termed the senile period, for it has been observed before the age of thirty. It is however most frequently found beyond the age of fifty. The symptoms are those of despondency with suicidal tendencies, maniacal outbreaks, inhibited intellection, transient paralytic affections of speech, of monoplegia, of vertigo, etc. These symptoms are not unlike those often encountered in parietic dementia or cerebral syphilis, but are distinguished from them by other associated symptoms especially of cardiac and renal origin. Vertigo is quite noticeable and is probably due as Hirt says, "to the atheromatous condition of the arterial walls and the consequent irregularities of the blood supply to the brain substance.

The melancholia is often a prominent symptom dependent alone on these circulatory changes. All have noticed in attacks of acute melancholia of the aged, where cardiac disease was conspicuous, the dependence of mentality upon the stability and regularity of the heart's action. A series of such cases studied during past years has more than satisfied Dr. Norbury of the dependence of melancholia on circulatory changes due to impoverished or inhibited circulation.

The maniacal attacks of chronic cerebral atrophy with their explosiveness, incoherence and destructiveness may be of cardiac origin. Dr. Norbury repeatedly noticed especially in cases complicated with angina pectoris that the mania was very severe and distressing. The fear of impending death, to be noticed in individuals not insane, is in the insane, transposed into hallucinations and delusions destined to create sad havoc as demonstrated in the mental disturbance of the individual.

In the ordinary senile dementia, destructiveness, filthiness and incoherence occur; the physical and mental helplessness being the outgrowth of the progressiveness of the disease. The decline is gradual; the slowness of the atrophic process, producing mental symptoms is at first regarded as the natural result of old age. The amnesia, the sudden changes of moods and emotions, and the appearance of delusions being the evolution of distinct senile dementia. The persistent wakefulness at night and the tendency to wander away from home are trying to home friends, and lead to commitment of the patient to the hospital. Here in his career of helplessness he lingers along until death finally closes the scene.

*Regis is of the opinion that the insanity of old age, or senile insanity, is that which occurs from advance of years. It recognizes for its main predisposing cause heredity especially cerebral heredity; and as its principal exciting causes, alcoholism, syphilis, great excesses, and misfortunes. Furstner, who has made a special study of the psychic disorder of old age classes them in three groups: (1) simple psychoses; (2) senile psychoses with simple dementia; (3) senile psychoses with cerebral dementia.

The simple senile psychoses are those in which the insanity is not accompanied by intellectual enfeeblement. It is then a more or less acute attack of mania, melancholia, or confusional insanity. The maniacal and confusional forms much the least frequent, are essentially curable. The melancholic often due to a homologous and homochronous heredity assumes by preference the anxious type, and almost invariably terminates in the chronic form. The senile psychoses with simple dementia are those in which the insanity is associated with a condition of mental weakness without corresponding somatic lesions. It is a combination of an attack of mania or melancholia with simple dementia. It is generally met with as a sub-acute melancholia with ideas of persecution. These last are necessarily absurd and puerile from the co-existing dementia. The patients almost

always think that some one has a design against them, but especially that they are to be robbed; this is their ruling idea. Under the influence of this fear they rise in the night hide everything they have in places which later they themselves are unable to find, they barricade themselves in their homes and in their rooms, and go so far, so to speak, automatically, as to accumulate in their night vessels, their sheets, blankets and garments.

There may be also hallucinations of sight or hearing, but confused and rudimentary as they always are in demented conditions. There is very little or no sleep; nocturnal noisiness and excitement are nearly constant in these patients. Their actions bear the stamp of dementia. They are: absurd and infantile thefts, like those of parietic dementia but even more foolish; sudden and causeless fits of passion, ridiculous and heedless attempts at suicide; also libidinous actions, obscene exhibitions in public, attempts at rape, unnatural crimes, all resulting from lack of consciousness and absolute loss of the feeling of modesty.

The senile psychoses with cerebral dementia are those in which the insanity is associated, not with simple mental enfeeblement but with the bodily and mental symptoms of loss of power due to a more or less diffuse lesion of the nerve centres, i. e., what is called organic or apoplectic dementia.

In my own experience, aside from the other psychoses occurring in the old, the phenomena of senile insanity properly so-called are of peculiar interest to the family physician. Its miserliness, wandering tendencies, suspicious delusions and morbid tendencies to unfit marriages, constitute a symptom-complex, at once interesting and puzzling to the practitioner who is called on to advise an afflicted family.

The question of senility is, like so many other questions, a relative one. One patient is senile at sixty. Another reaches ninety without the appearance of senile change intellectually. Senile insanity usually begins with marked loss of memory respecting very recent events while events of the remote past are remembered with great min-

uteness and are predominant. The patient is usually irritable in temper. If the mental change proceed no further the patient cannot be called insane. Later on however the emotional and motor faculties are affected. The patients are often greatly but sillily exalted in ideas, given to talkativeness and stupid jokes. Both sexes are often at this stage very erotic. The marriage of old gentlemen to disreputable women or vice versa, has often had its origin in this peculiarity. The patient shows a great tendency to wander about. An old patient may get up at midnight to search for the dead lovers of her youth. As Anstie has pointed out, there is often a phase of mental change in the aged which is inexpressibly trying to the patient, and still more to all brought into contact with him. It consists in a peculiar perversity, a tendency to offer vexatious and frivolous delay and opposition to everything which is suggested by others, however important the occasion. They are just that sort of folk who insist on making perverse and unreasonable alterations in wills when these have been settled long before in a just and convenient manner or who quarrel in their last days upon some frivolous pretext with the friend of a life time.

The first indication in treatment is to meet the waste which underlies the restlessness of senile insanity as it does the restlessness of mental conditions due to other exhaustion states. Frequent feeding at regular intervals of two hours per diem often exercises a decidedly beneficial effect on the restlessness and querulency. Sometimes milk and eggs will quiet when sedatives fail. Conium, sulphonal and cannabis indica act best as sedatives. The patient's tendency to insomnia of an intermittent type often yields to a warm mixture of milk and eggs followed in a couple of hours by conium and cannabis indica or sulphonal. In some cases salix nigra and camphor monobromate act excellently.

Prognosis as regards perfect recovery is bad. The erethism may quiet down and the patient lead a relatively happy life in the insane hospital but such a seemingly recovered patient, "such a nice old lady," often renders home a perfect torment by unreasonable demands. Often

this is due to the lack of regular feeding and sometimes to the patients relations from whom he will take less direction than from strangers. The delusions of being impoverished often aids insane hospital treatment. The patient who believes she is in a poor house takes food frequently because it costs her family nothing. *

As to frequency three per cent. of the patients admitted to the Cook County insane hospital were so demonstrably senile lunatics as to require hospital treatment. A larger percentage went to the poor house. For proper treatment at home, the enurement of regular rest, frequent feeding and careful watchfulness against wandering tendencies are absolutely requisite. If these cannot be secured the patient should be sent to an insane hospital. One such case will often wear out an entire family.

The results of senile insanity in families have not escaped, as Clouston remarks, the attention of dramatists and novelists. A most interesting description of insanity in the senile period appears in "King Lear."

Brigham* (one of the ablest American alienists) half a century ago, regarded Lear as a genuine case of insanity correctly reported. Still he apprehends that the plan or cause is generally misunderstood. The general belief is that the insanity of Lear originated solely from the ill treatment of his daughters while in truth he was insane before that from the beginning of the play when he gave his kingdom away and banished as it were Cordelia and Kent and abused his servants. The ill-usage of his daughters only aggravated his disease and drove him to raving madness. Had it been otherwise, the case as one of insanity would have been inconsistent and very unusual. Shakespeare and Walter Scott prepare those whom they represent to be insane by education and other circumstances of the disease. They predispose them for insanity and thus its outbreak is natural. In the case of Lear insanity is so evident before he received any abuse from his daughters that professionally speaking a feeling of regret arises that he was not so con-

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sidered and so treated. He was unquestionably very troublesome and by his "new pranks," as his daughter calls them, caused his children much trouble and introduced much discord into their household. In fact a little feeling of commiseration for his daughters at first arises in our mind from these circumstances though to be sure, they furnish no excuse for their subsequent bad conduct. Let it be remembered they exhibited no marked disposition to ill-treat or neglect him until after the conduct of himself and his knights had become outrageous. Then they at first reproved him or rather asked him to change his course in mild manner. Thus Goneril says:

"I would you would make use of that good wisdom,
Whereof I know you are fraught, and put away
These dispositions, which of late transform you
From what you are."

showing that previously he had been different. This however caused an unnatural and violent outburst of rage but did not originate his insanity for he had already exhibited symptoms of it and it would have progressed naturally even if he had not been thus addressed. Lear is not after this represented as being constantly deranged. Like most persons affected by this kind of insanity he converses rationally. In the storm scene he became violently enraged exhibiting what may be seen daily in an insane hospital, a paroxysm of rage and violence. It is not until he has seen and conversed with Edgar, the philosopher and learned Theban, as he calls him, that he became a real maniac. After this aided by a proper course of treatment he falls asleep and sleep as in all similar cases partially restores him. But the violence of his disease and his sufferings are too great for his feeble system and he dies and dies deranged. The whole case is instructive not as an interesting story merely, but as a faithful history of a case of senile insanity.

Bucknill* very lucidly points out about the period of improvement that: This is not mania but' neither is it sound mind. It is the emotional excitability often seen in

*Mad Folk of Shakespeare.

extreme age as it is depicted in the earlier scenes of the drama, and it is precisely true to the probabilities of the mind's history that this should be the phase of infirmity displaying itself at this moment. Any other dramatist than Shakespeare would have represented the poor king quite restored to the balance and control of his faculties. The complete efficiency of filial love would have been made to triumph over the laws of mental function. But Shakespeare has represented the exact degree of improvement which was probable under the circumstances namely, restoration from the intellectual mania which resulted from the combined influence of mental and physical shock, with persistence of the emotional excitement and disturbance which is incurable and unalterable because of the malign influence of old age.

Dr. Isaac Ray leans to the opinion that Lear is intended to represent insanity in senescence rather than senile insanity. In Lear, Ray* remarks, Shakespeare has represented the principal character as driven to madness by the unexpected ingratitude of his daughters; or more scientifically speaking, he has represented a strong predisposition to the disease as being rapidly developed under the application of an adequate exciting cause. It is no part of his object to excite curiosity by a liberal display of wildness and fury nor to awaken our pity by the spectacle of a mind in ruins, and unconscious of its wretchedness. He aimed at dramatic effects by opening the fountain of sympathy for a being of noble nature and generous impulses cruelly despoiled of the highest endowment of man, but not so far as to lose all traces of his original qualities or cease for a moment to command our deepest respect. In Lear, we have a man of a hot and hasty temper, of strong and generous passions, of a credulous and confiding disposition, governed by impulses rather than deliberate judgement, rendered impatient of restraint or contradiction by the habit of command with a nervous temperament strongly susceptible to the vexations of life and, moreover, with all these moral infirmities aggravated by old age. With these simple

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elements of character is mingled and assimilated more or less of mental derangement, with equal regard to pathological propriety and dramatic effects. And so nicely adjusted are the various elements of sanity and insanity and so admirably do they support and illustrate one another that we are not surprised in the progress of the action by violent contrast; and we feel at last as if it were the most natural thing in the world that Lear should go mad, and precisely in the way represented by the poet. Mad as he becomes, the prominent attributes of his character are always to be seen. Through the whole play, he is the same generous, confiding, noble-hearted Lear. In short, assuming Lear to be an historical portrait instead of a poetical creation, we should say there existed in his case a strong predisposition to insanity, and that if it had not been developed by the approach of old age, or the conduct of his daughters, it probably would have been by something else. His inconsiderate rashness in distributing his kingdom among his children, his disinheriting the youngest for the fearless expression of her feelings and his banishment of Kent for endeavoring to recall him to a sense of his folly, all indicate an ill-balanced mind if not the actual invasion of disease. This view of the case is confirmed by the conversation between the sisters immediately after the division of the kingdom. Goneril says:

"You see how full of changes his age is: the observation we have made of it hath not been little. He always loved our sister most: and with what poor judgement he hath now cast her off, appears too grossly." "'Tis the infirmity of his age," replies Regan, "yet he hath ever but slenderly known himself."

"The best and soundest of his time," continues Goneril, "hath been but rash, then must we look to receive from his age not alone the imperfection of long engrafted condition but there withal the unruly waywardness the infirm and choleric years bring with them." Regan then adds. "Such inconstant starts are we like to have from him as this of Kent's banishment." With a knowledge of insanity that could hardly have been expected from any but a professional observer, Shakespeare has here and elsewhere recognized the fact that very many of those who become insane are previously distinguished by some of those mental

irregularities that pass under the name of oddity or eccentricity.

The next thing we hear of Lear is his beating one of Goneril's gentlemen. His remarks on learning the fact show that his mental condition has not been improving since his abdication and prepare us for the mournful sequel.

"By day and night he wrongs me: every hour
He flashes into one gross crime or other
That sets us all at odds. I'll not endure it;
His knights grow riotous, and himself upbraids us,
On every trifle."

The development of the early stage of Lear's insanity, or its incubation as it is technically called, is managed with masterly skill, the more surprising as it is that stage of the disease which attracts the least attention. And the reason is that the derangement is evinced not so much by delusions or gross improprieties of conduct, as by a mere exaggeration of natural peculiarities, by inconsistencies of behavior, by certain acts for which very plausible reasons are assigned though they would never have been performed in a perfectly sound state of mind by gusts of passion at every trifling provocation or by doing proper things at unreasonable times and occasions. With his own free will and accord he gives away his kingdom but finds it difficult to sink the monarch in the private citizen. He attaches to his person a band of riotous retainers whose loose and lawless behavior proves destructive to the peace and good order of his daughter's household. Goneril describes them as:

"A hundred knights and squires;
Men so disordered, so debauched and bold,
That this our court, infected with their manners,
Shows like a riotous inn."

Under such an infliction it is not strange that she should remonstrate and had not the divine light already begun to flicker he would have acknowledged the justice of the reproof. As it is, however, instead of admitting some share of the fault, he attributes the whole of it to her, flies into a passion, pours upon her head the bitterest curses, upbraids her with the vilest ingratitude and forthwith proclaims his wrongs to the public ear. Like most cases in real life it would have to a stranger, the appearance of a family quar-

rel springing from the ordinary motives of interest or passion, but where really the ill-regulated conduct resulting from the first influence of disease provokes restrictions more or less necessary and appropriate, that become exciting causes of farther disorder. Another life-like touch is given to the picture, in Lear's attributing all his troubles to filial ingratitude, not being aware of course that he was on the high road to insanity long before he had any reason to doubt their kindness. In fact nothing is more common than for the patient when telling his story, to fix upon some event and especially some act of his friends, as the cause of his troubles, which occurred long subsequently to the real origin of his disorder, and might have had but an accidental connection with it. The conduct of his daughters faithfully exhibits strong tendencies of human nature. No doubt their patience was severely tried—such a trial as only the mildest temper joined with the firmest principle could enable them to stand successfully. Wanting these however, his irregularities are met with reproaches and strictions instead of kind and conciliating measures, an explosion follows and in mutual hate and anger they separate. To their heartless natures such conduct may not have appeared like unmitigated ingratitude toward a father who had loved and cherished them as the very idols of his heart, but to be founded on provocation that seemed to justify their behavior. Such is the ingratitude of the world ever coupled with some shallow pretense of wrong or indignity sustained and often presenting the fair outside show of a worthier feeling in the daughter's treatment of her father. Shakespeare strips off the thin disguise of conventional morality and lays bare that heartless selfishness which is ever ready to sacrifice to momentary ease and gratification the tenderest sympathy of our nature. It is fearful to think how often the case of Lear and his daughters is paralleled in actual life and it is the very commonness of the fact that prevents us from regarding it as a curious monstrosity, fitted to excite but a momentary horror, and which imparts a deep moral interest to the representation of the poet.

When the astounding fact of Goneril's baseness is fin-

ally made so plain to Lear that he can no longer doubt, his senses appear to reel under the shock, and for a moment he questions his own identity. "Does any here know me? Why this is not Lear! Does Lear walk thus, speak thus? Where are his eyes? Either his notion weakens or his discernings are lethargied. Sleeping or waking? Ha, sure 'tis not so. Who is it that can tell me who I am?"

The continued objurgations of Goneril and her barefaced impudence in proposing a diminution of his train soon produced a reaction in his mind and Lear gives vent to his feelings in that blasting curse whose bitterest ingredient was the wish that she might feel:

"How long thou shalt out's tooth it is
To have such foulness on thy tongue!"

Then bursting into tears of which his noble nature is ashamed he quits the presence of a child upon whose affection he had reckoned for the support of his declining years, and resolves to go to his other daughter who had shared his bounties, certain that he would receive from her the hearty welcome and tender regards that he had been scornfully refused by her sister. While pondering upon past scenes he is conscious that his mind has sustained a fearful shock and as is often the case in such circumstances he has a vague presentment of the fatal result.

"O, let me not be mad, not to be sweet Heaven!
Keep me in temper: I would not be mad!"

On arriving at Regan's residence he finds that she refuses to see him, and that his faithful follower has been placed in the stocks. These things excite his suspicion that all is not right and renew the agitation that had been momentarily quieted. Still he is slow to believe what is evident enough to everybody else and fondly hugs the delusion in which his only hope of happiness rests. But when the conviction is forced upon him that Regan even goes beyond her sister in ingratitude, he utters a wail of heartfelt wretchedness and lofty indignation, ending with another foreboding of the impending calamity. "O fool, I shall go mad." Driven with contumely and scorn from that shelter in the affections of his child which he had fondly expected to find, he goes forth at night and braves the pelting of the

pitiless storm. The howling of the wind, the roar of thunder and the flash of lightning are welcome, for at least they lack the sting of filial ingratitude and are in mournful accordance with the tumult in his own crushed and bleeding bosom. One dark overshadowing, all engrossing idea, the cruelty of his daughters is suggested by every object, gives a tone to all his reflections and like the worm that never dies, is gnawing perpetually at his heart. Well might he invoke the fury of the element upon his head for the worst they could do would be mercy compared with the torments his own flesh and blood had inflicted.

"The tempest in my mind
Doth from my senses take all feeling else
Save what foats there."

There is now obviously a degree of incoherence and absurdity in the thoughts that race through his mind though they are never destitute of that grandeur and boldness of expression indicative of his lofty and noble nature. But the idea of the thunder cracking nature's moulds and destroying the germs of the race contained in his invocation to the elements, is a little too fanciful for even a figure of poetry. In a similar strain he charges the elements with conspiring with his daughters against his old white head, and soon after imagines that the Gods have raised the storm for the purpose of finding out their enemies. This is crazy enough no doubt; but his apostrophe to sinners of various kinds that immediately follows, is both correctly and beautifully expressed. He seems to be fully aware that his thoughts are deviating from the right track and exclaims that "wits begin to turn." The predominant idea follows him in the next scene, and ever and anon intrudes upon his reflections though he always recoils from it with a kind of horror, as if conscious it had the power to deprive him of his reason. "O that way madness lies." Unable as the insane are to perceive their own insanity yet this apprehension of its approach so frequently repeated by Lear usually occurs during incubation. While still able to control his mental manifestations the patient is tortured with anticipations of insanity; but when he actually becomes so insane that the most careless observer perceives the fact,

he entertains the most complacent opinion of his intellectual vigor and soundness. And yet this is one of the nicer traits of insanity which the ordinary observer would hardly be supposed to notice. But Shakespeare was no ordinary observer; and this explains the cause of his preeminence in certain parts of his art.

The appearance of Edgar who is feigning madness in order to avoid his enemies, again excites Lear's predominant idea and fixes it permanently in his mind. The former's ragged, wretched, degraded condition, he can attribute to nothing but filial ingratitude and he pours out curses on Edgar's unnatural daughters. He is no longer able to correct the errors of his own judgement; reason exercises but a feeble control over his conclusions and scarcely a gleam of light struggles through the darkness which envelopes his soul. The predominant idea however has not yet relinquished its hold and it still gives direction to his thoughts. The very images of his daughters appear before him in visible forms glowering upon him with looks of scorn and hate. The idea of placing them on trial enters his mind and he proceeds to the business with all due forms and solemnities. Edgar the fool, and Kent are appointed to the bench, his daughters in the shape of joint tools are arraigned before the court; and Lear appears as witness against them. Then, after a brief interval, during which it would seem as if he imagined them to have been convicted and sentenced, he exclaims with touching pathos:

"Let them anatomize Regan, see what breeds about her heart.
Is there any cause in nature that makes these hard hearts?"

The scene on the hearth between Lear, Edgar and the fool, has not its like, in the whole range of dramatic literature. No less a genius than Shakespeare would have ventured to bring together face to face three such difficult characters, one actually mad, one falsely pretending to be so and the third a fool. And yet in the successful management of such discordant and intractable materials, he has given a fresh instance of his wonderful skill. Nothing could have seemed more likely to disappoint and displease than to bring the noble-hearted Lear, staggering under the shock

of his daughter's ingratitude with blasted heart, bewildered reason, into such strange companionship, and yet who can finish this scene without feeling that he has read a new chapter in the history of mental disease of most solemn and startling import. The sight of another in rags and wretchedness reveals to Lear a deeper depth of agony in his own soul. He sees in the stranger only another victim of filial ingratitude, the counterpart of his own case, and Edgar's weak and blighted condition forewarns him of his own approaching fate. Its first effects is to produce a shower of curses on Edgar's unnatural daughters and the next to draw him toward his fellow sufferer by that kind of sympathy which, irrespective of social conditions, is awakened by mutual affliction. In this play of wild and discordant fancies, the fool mingles his humors which fall on the ear like sounds of jollity and mirth ascending from a house of mourning. The successful management of such deep masses of light and shade whether in poetry or painting requires the master hand of Shakespeare or a Rembrandt.

Thus far the progress of Lear's insanity is represented with the closest fidelity to nature. It is not more different from the disease as daily observed, than Lear's normal and intellectual constitution, when in health, is different from that of ordinary men. At every interview reason seems to have lost somewhat of its control. The mental excitement has been steadily increasing until now having reached its height, he goes about singing, dancing and capering through the field, fantastically decorated with weeds and flowers looking, acting and talking like a madman. His perceptive organs are deceived by hallucinations and his discourse though tinged with his natural shrewdness and vigor of thought is full of incoherence and incongruity. In short he is now what is called raving. In the representation of his condition we have another instance of Shakespeare's unrivalled powers of observation. To ordinary apprehension the raving of a maniac is but an arbitrary jumble of words and phases between which no connecting threads can be discerned. But in fact discordant and heterogeneous as they may appear, they are nevertheless subjected to a certain

law of association difficult as it may be frequently to discover it. The phenomenon may thus be physiologically explained. In consequence of the cerebral excitement, impressions long since made, so long perhaps as to have been forgotten previous to the attack are so vividly and distinctly recalled that they appear to be outward qualities. So long as the intellect retains its integrity it is able to recognize the true nature of the phenomenon; but when touched by disease it ceases to correct the error of perception. The impressions are actually considered to be what they appear and the patient thinks and discourses about them as such. In his mind's eye he sees sights and in his mind's ear he hears sounds, imperceptible to others and this is the source of much of our difficulty in discovering the object and relevancy of his remarks.

Another source of our difficulty in discovering the filiation of the maniac's thoughts has been generally overlooked and the fact strongly shows with how little sagacity the operations of the insane mind have been studied. The maniac being restrained by no sense of the propriety or fitness of things, expresses every thought that enters his mind or, at any rate, is governed by no principle of selection. In the sound mind on the contrary a considerable portion of the thoughts never find utterance in words, being suppressed from their want of the connection with one another, or their irrelevancy to the subject in hand. Every one must be aware how often in the course of ordinary conversation, thoughts start up having the remotest possible connection with anything already said. So remote indeed, as to defy any one but himself to discover it. Any person who should utter every thought that arose in his mind in the freest possible conversation would most certainly be taken for a fool or a maniac. The mental defect is far from being confined to the state of raving. In a greater or less degree it occurs in almost every form of insanity. Even those whose delusions are very circumscribed, who conduct for the most part with great propriety and to common observers betray no indication of unsoundness in their conversation, will usually evince it when very talkative and

encouraged to talk without interruption. Their remarks may be correct and even shrewd, not a single word may be uttered "sounding to folly" while there is a certain peculiarity in the association of their ideas never witnessed in the sound mind. Though not easily described it is readily recognized by those who are conversant with the insane and to them it is a conclusive proof of mental disease, though they may be incapable of making the grounds of their conclusion intelligible to others. Courts and juries are not always disposed to make sufficient allowance for the fact and regard with suspicion the embarrassment of the medical jurist, who sees that what is to him the strongest proof of insanity is to others no proof at all. Bearing in mind these facts we readily see how there may always be some method in madness, however wild and furious it may be, some traces of the delicate thread which, though broken in numerous points, still forms the connecting link between many groups and patches of thought. It is in consequence of Shakespeare's knowledge of this psychological law that in all his representations of madness even though characterized by wildness and irregularity, we are never at a loss to perceive that the disease is real and not assumed. Not so however with most writers even of distinguished name who have undertaken to represent the workings of a diseased mind. Unaware of the law in question and governed by the popular notions on the subject they seem to have aimed only at unlimited extravagance and incoherence. Otway, for instance, in "Venice Preserved" represents Belvidera in that state of mental disturbance which results from wounds of the softer affection of the heart. A speech full of those strong and vehement expressions characteristic of deep felt emotion but presenting no trace of delusion finishes with the following jargon, which no insane persons would have uttered in such a connection, though it might very likely proceed from one simulating the disease.

"Murmuring streams, soft shades, and springing flowers,
Lutes, laurels seas of milk, and ships of amber."

In the first scene in which Lear makes appearance after becoming stark mad, his mind is solely occupied with images

formed under the influence of the intense excitement of the internal perceptive organs. He at first fancies himself in a battle and then as engaged in the sports of archery and falconry. Something reminds him of Goneril and then succeeds to one another by a natural association, the ideas of a white beard, of the flattery of his courtiers of the detection of their deception. When Gloster hears his voice and asks if it be not the king's, Lear replies, "Aye, every inch a king." Visions of his royal state then pass before his eyes and he is reminded of the criminals he pardoned and the crimes they committed, and thence, by a natural transition he is led to some caustic reflection on the frailties of women. Another remark of Gloster turns his mind to the examples of self righteousness and self deception, servility and time-serving with which the world abounds and in a strain of bold indignant sarcasm he lashes the vice to which poor human nature is especially prone. All this is exceedingly natural. It is not uncommon to meet with madmen of the most wild and turbulent description mixing up their utterances with the shrewdest remarks upon men and things, and the keenest and coolest invective against those who have incurred their displeasure. The poet perhaps has used the utmost license of his art in the present instance, but if few madmen have exhibited so much matter mingled with their impertinency as Lear it may be replied in justification that few men are endowed like Lear with such a union of strong passions and natural shrewdness of understanding.

Here endeth the madness of Lear. By his youngest daughter he is placed in the charge of a physician whose medicines throw him into a deep sleep from which and his madness together he awakes as from a dream. The manner of his recovery displays the poet's consummate skill that could delineate the most touching and beautiful traits while observing the strictest regard to facts. Lear at first knows not where he is nor where he has been. He scarcely recognizes his own friends and almost doubts his own identity:

"Pray do not mock me,
I am a foolish, fond old man,
Fourscore and upwards; and to deal plainly
I fear I am not in my perfect mind.
Methinks I should know you, and know this man,
Yet I am doubtful; for I am mainly ignorant
What place this is; and all the skill I have
Remembers not these garments; nor I know not
Where I did lodge last night."

A faint idea of recent events now occurs to him and he says to Cordelia:

"Your sisters
Have, as I do remember, done me wrong."

A more faithful picture of the mind at the moment when it has emerged from the darkness of disease into the clear atmosphere of health restored was never executed than this of Lear's recovery. Generally recovery from acute mania is gradual, one delusion after another giving way until after a series of struggles which may occupy weeks or months, between the convictions of reason and the suggestion of disease the patient comes out a sound, rational man. In a small proportion of cases however this change takes place very rapidly. Within the space of a few hours or a day he recognizes his true condition, abandons his delusions, and contemplates all his relations in an entirely different light.

The management of Edgar's simulation strikingly evinces the accuracy and extent of Shakespeare's knowledge of mental pathology. In placing the real and the simulated affection side by side he has shown a confidence in his own skill which the result has perfectly justified. In no other way could the fidelity of his delineations have been subjected to so severe an ordeal. We are left in no doubt as to the views of what is and what is not genuine insanity, and by holding before us an elaborate picture of each, he enables us to compare them together and to judge of his success for ourselves. In these pictures he has availed himself of no equivocal traits; the touches of his pencil are of that strong and decided character that admits but a single meaning. Not more true to nature is the representation of Lear writhing under the stroke of real insanity than is that of Edgar playing upon the popular curiosity with such shams and artifices as would most effectually

answer the simulator's purpose. The one is an exhibition of character as genuine and marked by as distinctive traits as the other; and Shakespeare would have been as unlikely to confound them and mistake the one for the other as to fail to recognize the commonest forms of nature around him.

Edgar's first design is to personate a Tom O'Bedlam beggar, one of a class of lunatics who were discharged from Bethlehem Hospital when restored in some measure, that they might subsist upon the charity of the community. Accordingly he provides himself with their usual dress and appurtenances, repeats their phrases and imitates their practices for exciting the compassion of the charitable. In his anxiety to produce an impression, he falls into the common mistake of simulators who overact their part and thus betray their true character to the practiced observer. We could not commit a greater error than to regard this fact as a fault of the poet who displays in it a power of philosophical discrimination which, when strongly marked, is indicative of the highest order of genius. The subject of the past is to deceive multitudes, not the professional student, and for this purpose nothing could be better calculated than the gibberish which he utters in his double character of a lunatic beggar and a victim of demoniac possession. Had it been Shakespeare's design to represent a case of real demonomania or of chronic mania, we should unquestionably have had something very different from the part of Edgar. If the former, we should not have found the patient talking so clearly about his own case, while indulging in unlimited incoherence and rambling about everything else; and, if the latter, we should not have seen a strain of acute moralizing succeeded more than once by a trait of mental imbecillity. Poetically considered, the feigned madness of Edgar is well calculated by force of contrast to deepen the impression made by real madness of Lear. The abject condition of the former excites our pity as an object of physical distress which we would endeavor to relieve. In the case of Lear, however, all the finer emotions of the soul are aroused by the sight of a noble

nature, crushed to the earth by sufferings which touch the inmost springs of humanity.

We cannot dismiss this play without a passing notice of the fool in whose character Shakespeare has shown that his observation of mental impairment was not confined to one of a few of its forms. He is used like the same character in other plays, his quips and cranks serving as a foil to the humor of his stronger minded companions. They who find fault with the poet for infusing too much wisdom into the folly of his fools may well take a lesson from him in certain branches of psychological study. In the present instance, he knew what is not generally known even now, as we often have painful reason to remark that a very obvious degree of intellectual deficiency is sometimes accompanied by a little shrewdness of observation and practical sagacity. They, who are much conversant with this form of mental impairment, have no difficulty in believing that the very person who is unable to rise to the simplest abstract truth may occasionally utter a shrewd remark and succeed as well as wiser men in "shooting folly as it flies." It was this class of subjects that furnished the domestic fools and court jesters of the olden times. With no sufficient understanding or character to awaken the jealousy of their patrons or exercise any restraint upon their manners they had the sense to discern the foibles and follies of their superiors and ready wit enough to extract from them food for amusement and mirth. The biting jest and timely reproof were good-naturedly received since their acknowledged imbecility rendered them for the most part, quite irresponsible for their sayings and doings. With such characters royalty could unbend without loss of dignity and enjoy a jest even at its own expense.

Dickens in "Old Curiosity Shop" has depicted an even more pathetic instance of a senile lunatic, more demented than King Lear who displays the wandering tendency of old age and its suspicious delusions. These serve as a beautiful foil to the devotion of "Little Nell."

From a forensic standpoint, unjust wills, false accusa-

tions of cruelty against children and relatives, indecent exposure, criminal assaults especially on children of both sexes, illegal and improper marriages and other contracts, and theft are to be expected from senile lunatics.

THE AUTO-TOXIC ORIGIN OF EPILEPSY.*

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WE do not see epilepsy at birth, and not for years afterward may it show itself. It is the predisposition which is transmitted, and not then until some exciting cause presents itself to act upon the susceptible nerve cells do we have the manifestation of faulty inhibition, development, nutrition or whatever the condition may be. The child of epileptic parentage may have an attack of intestinal trouble (perhaps putrefactive, therefore toxic) followed by a convulsion. The nervous centers have shown themselves susceptible to the intestinal irritant and it is reasonable to suppose that upon a subsequent and similar irritation another convulsion will occur. The predisposition, which might be called the epileptic habit, becomes confirmed when the inhibiting influence governing the action of nerve cells is lost, this inhibiting influence being paralyzed by the intoxicating agent. Gowers says: "Epilepsy is a disease because the tendency to what we call 'discharge' is increased each time the tendency has its effect." Thus the epileptic habit is established.

J. S. Bristowe reports cases of epileptiform convulsions apparently produced by extreme slowness of the pulse. In his cases the pulse during the intervals between the attacks was as slow as 20 to 30 beats per minute, and after the attacks reached 70 to 120 beats to the minute. It would seem to me that in these cases the extreme slowness of

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the heart, with the consequent retarded circulation in the veins and lymphatics, allowed the accumulation of toxic principles in the brain, giving rise to an irritation which resulted in convulsive manifestations. Dr. T. Oliver, in reporting a case of "Epilepsy in a Puerpera with Hyperpyrexia," speaks of the imperfect renal action allowing the retention of animal poisons in the blood, "there being no reason why the disordered blood of pregnancy, with its altered arterial tension and plethora should not so influence the cerebral centers as to lead to the nervous explosion upon which the fit depends." In this patient no convulsions occurred until pregnancy was established, and the author excluded kidney disease or any reflex difficulty.

It has been shown in extended observations by Herter and Smith that intestinal putrefactive processes are distinctly related to the epileptic paroxysm. They have demonstrated that intestinal putrefaction is indicated by the amount of sulphuric acid in ethereal combination found in the urine. The degree of intestinal putrefaction appeared to influence the seizures in part of the cases cited, being less during the intervals and increasing up to and after the attacks. Haig claims a relation between uric acid and epilepsy, namely, that grand mal is caused by an excess of uric acid in the blood, while there is a decrease in the amount found in the urine before, and an excess at the time of the paroxysm.

It thus appears that the subject of auto-intoxication in epilepsy as a factor in its etiology has occupied the minds of many acute observers and is the path in which we should direct our work until the subject is at least exhausted. The excretory products found in the urine and fæces have received most attention and been thoroughly investigated, except the substances found in the urine by Bouchard and which he designates "extractive matters," one of which upon injection into animals produces convulsions, another lowers the temperature, and, lastly, one contracts the pupil. To quote from Bouchard: "One kilogramme of man eliminating in twenty-four hours a quantity of urine capable of killing 461 grammes of animal, the proportional

part of the mineral matter in this toxicity may be indicated as follows: potass. kills 217 grammes; soda, 30 grammes; calcium, 10 grammes; magnesia, 7 grammes. The whole of the mineral matter kills 264 grammes. On the other side, urea kills 63 grammes. There remains to be destroyed 134 grammes."

"We may say that one kilogramme of man eliminates in 24 hours organic matter, capable of being fixed by charcoal, which is able to destroy at least 134 grammes of animal. These substances (coloring, extractives or alkaloids) represent 30 per cent. of the total toxicity. It is to these substances, still undetermined, that hereafter the effort of chemistry should be directed."

The writer has formulated the following schedule of work directed toward the solution of the problem of auto-intoxication in epilepsy, which will, as far as possible, be carried out in our laboratory:

- | | | |
|----------------------------|---|--|
| I. Urine. | } | Intervals. |
| II. Blood. | | Before paroxysm. |
| III. Cerebro-spinal fluid. | | After paroxysm. |
| for | } | a. Inorganic principles. |
| | | b. Toxicity as shown by injecting animals. |
| | | c. Organic principles. |
| | | Urea, etc. |
| | | Extractive matters of Bouchard. |

On account of the many changes to which the urine is subjected after expulsion from the body, it occurred to him that an examination of the blood itself would present a more direct and definite evidence of toxic principles existing in the body. This is the work at present being carried out, and this report will be confined to the amount of urea found in the blood serum.

Considerable difficulty was experienced in ascertaining a good method by which the urea could be separated from the blood, but the following description of Haycraft's method from the works of Professor Gamgee appears the most simple. Twenty c. c. of blood is defibrinated and placed upon a parchment paper dialyzer and spread over it so as to form a thin layer. Float in a vessel containing 50 c. c. of absolute alcohol. From time to time add a very little

distilled water to keep the mass on the dialyzer moist—continue the process for twelve hours.

Treat the diffusate with an equal bulk of concentrated solution of oxalic acid and evaporate to dryness. To the residue add some petroleum naphtha to remove fatty matters. Dissolve the residue in a little water and add barium carbonate. Evaporate. Treat the residue with boiling alcohol and filter. Concentrate the filtrate, from which, on cooling, urea will crystallize out. The advantage of this method is that the urea is obtained pure and can be subjected to test. The amount of urea in healthy blood has been variously estimated at from 25 to 35 milligrammes per 100 grammes of blood.

The small superficial veins of the forearm should be selected, as, in case obliteration of the vein occurs subsequent to the operation, collateral circulation is readily established. A bandage should be tied tightly above the elbow, as in the ordinary process of bleeding, and after the arm has been made thoroughly clean with soap and water followed by carbolic acid, alcohol and ether, a small incision is made over the distended vein and parallel to it. When the superficial fascia is exposed, the skin should be drawn to one side so that it is possible to cut along side the vein rather than directly over it. If the vein is not completely bared, the hemorrhage will diffuse beneath the fascia and by pressure cause the flow of blood to cease. A small cut is made in the exposed vein and the fine stream of blood is allowed to flow into a glass graduated in cubic centimetres held by an assistant. I have found it better to take 40 c. c. of blood as the specific gravity can be more readily secured. When the quantity of blood desired is obtained, the bandage should be removed at once and a compress dressing applied to the wound. I have experienced no unpleasant after effects from successive bleedings. This should be attended to by an assistant, as the blood requires immediate attention. After defibrination, which may be done with a glass or wire brush, the specific gravity should be taken. It is then placed upon the dialyzer and the process continued as before mentioned. Care should be

taken to have the parchment fit very tightly to the glass so as to prevent the possibility of the alcohol leaking directly into the dialyzer, which event would render the operation worthless, as no osmosis would occur. The urea, being a crystalloid, separates from the mass on the dialyzer and is taken up by the alcohol which, when treated by the oxalic acid, results in the oxalate of urea. The barium carbonate combines with the oxalate of urea, forming the oxalate of barium, separating carbonic acid and urea. After the final filtration and concentration the liquid is left to cool and urea crystallizes out in rhombic prisms, which may readily be seen under the microscope.

CASE NO. 1.—Male, age 54, single, farmer. Admitted September 12, 1895, suffering from a maniacal condition following several epileptic attacks. His history shows that he had been suffering from grand mal since twelve years of age, the attacks occurring about once a month, and that now he is a confirmed epileptic. Only one examination of the blood could be obtained as patient refused to allow further bleeding.

CASE NO. II.—Male, age 30, single, book-keeper. Admitted December 9, 1892, also suffering from a maniacal condition superimposed upon epilepsy. He had suffered from attacks occurring about once a month of the grand mal form since childhood. Only three examinations were obtained in this case.

CASE NO. III.—Male, age 37, single, waiter. Admitted August 17, 1893. He has suffered from grand mal for sixteen years, and occasionally from psychical attacks. Since admission to the hospital his attacks have continued with undiminished severity. Four examinations of the blood were procured in this case.

CASE NO. IV.—Male, age 32, single, no occupation. Admitted June 4, 1895, with a diagnosis of epileptic dementia. He has suffered since childhood with attacks of the grand mal form which occurred about twice a week. Since admission the attacks have continued with the usual severity and frequency. Eight examinations were made in this case.

For one month previous to the commencement of the blood examination all treatment was stopped and the patient allowed the routine hospital diet. In cases III. and IV. all the urine was collected and examined for the total

amount of urea excreted by the kidneys in twenty-four hours, and attention paid to the variation in the amount before and after convulsions. A convalescent patient was used as a "control" case in the blood examinations. In the following table is a record of the quantity of blood drawn, its specific gravity, the amount of urea found, and the relation of the examination to an epileptic paroxysm is given:

BLOOD EXAMINATION.

| Date. | Case. | Quantity in c. c. | Quantity in grammes. | Specific gravity. | Time of exam- ination. | Urea in grammes found. | Percent urea per 100 grammes of blood |
|----------|-----------------|----------------------|----------------------------|----------------------|--|------------------------------|---|
| June 24 | I | 40 | 42.24 | 1056 | | .03 | .072 |
| July 9 | II | 40 | 42.32 | 1058 | | .005 | .01165 |
| " 13 | " | 20 | 21.12 | 1056 | | .021 | .098 |
| " 16 | " | 40 | 42.32 | 1058 | Ten minutes after fit. | .032 | .0755 |
| " 2 | III | 20 | 21.12 | 1056 | | .02 | .094 |
| " 7 | " | 40 | 42.16 | 1054 | | .015 | .0345 |
| " 9 | " | 40 | 42.16 | 1054 | Three fits from 6:30 to 7:30; blood after 1st | .01 | .024 |
| Aug. 17 | " | 20 | 21.12 | 1056 | Just after fit. [fit. | .015 | .0709 |
| June 24 | IV | 20 | 21.12 | 1056 | | .032 | .150 |
| " 30 | " | 20 | 21.12 | 1056 | | .02 | .094 |
| July 2 | " | 40 | 42.24 | 1056 | Fit, 11 P. M., blood, 11:10 P. M | .118 | 2654 |
| " 7 | " | 20 | 21.08 | 1054 | Fit, 9 A. M., blood, 4 P. M. | .01 | .046 |
| " 13 | " | 40 | 42.24 | 1056 | Just after fit. | .012 | .028 |
| " 20 | " | 40 | 42.00 | 1050 | Just after fit. | .02 | .047 |
| Aug. 16 | " | 20 | 21.20 | 1060 | Ten minutes after fit. | .02 | .0942 |
| Sept. 12 | " | 40 | 42.16 | 1054 | Six hours after fit.] | .021 | .0497 |
| June 12 | Control case | 20 | 21.12 | 1056 | | .005 | .025 |
| Aug. 24 | " | 20 | 20.90 | 1045 | | .003 | .0143 |

In case No. I, the amount of urea obtained in the single examination exceeded the normal of .025 to .035 grammes per 100 grammes of blood—averaging about double this estimate. There was no convulsion in proximity to the examination. In case No. II, the first examination presented a decrease from the normal; the second a considerable increase, being .098 grammes per 100 grammes of blood. There was no convulsion before these examinations. The

third examination was made ten minutes after an attack of grand mal, presenting an increase above the normal to .0755 grammes. This is lower than the result obtained on July 13th, but it may be noted that the fit followed three days later. It will be seen in the examination of July 7th of case IV., that the amount of urea found apparently decreases the longer the interval up to a limited point between the fit and the examination. We find in this case an average for the three examinations of .0617 grammes per 100 grammes of blood, or, in other words, about twice the amount of urea found in normal blood.

Passing on to case No. III: On July 1st patient had a number of severe epileptic attacks of the grand mal form. The examination of the blood on the day following showed .094 percentage of urea. No convulsions occurred before the examination of the 7th, and the percentage of urea fell to .0345 grammes. On the 9th patient had three fits and the blood drawn between the attacks showed in this instance only the normal average, the percentage being .024 grammes. On the 17th the blood taken directly after the fit showed .0709 grammes of urea per 100 grammes of blood. The average amount of urea found in 100 grammes of blood for the four examinations we therefore find to be .055 grammes, which will be seen to exceed the normal.

In case No. IV., the first examination gave a result of less than normal, the second a considerable increase, and the third, which was performed ten minutes after the convulsion occurred, reached the remarkable average of .2654 grammes in percentage amount. These three examinations showed a continued increase up to and just following an epileptic paroxysm. The next examination, made five days later, and seven hours after a convulsion, showed .046 grammes of urea, a marked decrease over the previous result. An examination on the 13th, and after a fit, showed a still further decrease, when the amount again began to rise, and on August 16th reached .0942 grammes in percentage amount following a fit. In this case it will readily be seen how greatly the amount of urea varies and how inconstant are the results as compared with the epileptic

paroxysm. In the control case it will be noted that the urea held to or was below the normal average.

The average amount of urea passed by the urine in case No. III. during the months of July and August was 9.45 grammes per 24 hours; less than one-third the normal amount. An increase in the amount of urea per cubic centimetre before the convulsions occurred was noted and corroborated the results recorded in the writer's previous paper spoken of in the first part of this article. In case IV. the average amount of urea excreted by the kidneys was 11.64 grammes per 24 hours—about one-third the normal amount of 33.19 grammes. A similar increase in amount of urea per cubic centimetre before the fit occurred was noted in this case.

Conclusions: As before quoted, Bouchard states that of the 461 grammes of animal killed by the amount of urine excreted by one kilogramme of man in 24 hours, urea killed only 63 grammes, from which we must infer that urea represents only a small part of the total toxicity of the urine. My results, though meagre, would seem to corroborate this view, for the variability of the amounts of urea found, even when examinations were made under apparently similar physical conditions, would seem to prevent the possibility of placing much importance upon this excretory product as a cause of epileptic convulsions. I do not mean to eliminate it entirely from the list of toxic causes, for it is probable that auto-intoxication is not due to any one toxic principle alone, but to the action of a combination of all the poisons.

We can only conclude that, firstly, there is an average increase in the amount of urea found in the blood serum of cases of idiopathic epilepsy above that of normal man; secondly, there seems to be but little relation between the amount of urea found and the epileptic paroxysm, as in some cases we find an increase directly after a fit, in others a diminution. The increase of urea found in the urine after a convulsion must be accounted for in other ways, possibly by the great muscular exertion during the fit, or by the diuretic action of the urea itself as it accumulates in the blood. This would seem to be proven by the blood

examination, as the amount of urea found was seen to gradually decrease for some time after the epileptic paroxysm occurred. Probably a more fruitful field of research in this direction will be an examination of the toxicity of the blood serum before, after, and during the intervals of epileptic convulsions, as shown by injection into the lower animals.

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SELECTIONS.

NEUROTHERAPY.

EFFECT OF THE X-RAY ON THE CENTRAL NERVOUS SYSTEM.—Some interesting experiments are reported from Russia (*St. Petersb. Med. Woch.*, No. 1, 1897), that tend to show that the X-ray has a quieting effect on the central nervous system. A frog was placed in a small wooden box on which the ray was directed, while the control frog, in a similar box, was protected from the ray by a sheet of lead laid on top of the box. It even counteracted the effects of strychnine, as no traces of intoxication were noticed in the frog after the administration of 0.04 milligrams, and exposure to the ray, while the control frog was found in tetanic convulsions. Half an hour's exposure before administering the strychnine rendered it possible to increase the dose, without intoxication.—*Journal American Medical Association*.

THE TREATMENT OF ATONY OF THE SMALL INTESTINE IN NEURASTHENICS.—Dr. Chalmet (*Journal des Praticiens*), believing that whether the nervous system presiding over the epithelial (secretion and absorption) and muscular functions may or may not play the principal part in this condition, the best method of improving the tone of the nerve is to nourish it better. To improve nutrition he administers during the early hours of intestinal digestion, a salt water enema of a concentration above that of blood serum—e. g.; 1-2 per cent. of salt—in order that he may produce in the large intestine an osmotic current which shall act at a distance upon the small intestine, retarding absorp-

tion and permitting the transformation of food-stuffs to go on for a longer period before absorption of the liquor containing these substances in solution.—*Modern Medicine*.

CONSCIOUSNESS IN EPILEPSY.—The following are the conclusions of a paper by Prof. E. Siemerling on "The Transitory Disturbances of Consciousness in Epileptics in their Forensic Relations," *Berliner Klin Wochenschr.*, Nos. 42 and 43, 1895:

1. In the epileptic psychoses a dream-like, altered condition of consciousness is probable, and not by any means a total or partial amnesia.

2. The most various transition forms occur between the different forms of so-called acute and chronic epileptic psychoses. Epileptic or epileptoid conditions and psychoses must alike be reckoned as symptoms of cerebral disease.

3. The transitory, dreamy states are characterized by the rapidly recurring, apparently orderly, indifferent, and inconspicuous manifestations, and by unusual, unexpected, often, violent acts.

4. There is no epileptic psychosis without epileptic or epileptoid antecedents. Epileptoid conditions are more frequent than is commonly supposed, especially vertiginous attacks.

5. With the lack of epileptic or epileptoid manifestations, all other symptoms, such as amnesia, similarity of the attacks, peculiarities of actions, sensory hallucinations, will serve to make the diagnosis of epilepsy most probable.—*Canada Lancet*.

INTESTINAL ANTISEPTICS IN INSANITY.—The use of drugs intended to prevent or check fermentation and putrefactive changes in the intestinal tract has found extensive application in the treatment of acute insanity. Our usual procedure is to give a laxative or free purge, then some one or a combination of several intestinal antiseptics—B. naphthol, naphthalin, boric acid, bismuth, carbolic acid, calomel, thymol and chlorine solution (yeo). Many cases of melancholia in particular are benefitted. In epilepsy the use of B. naphthol especially has been attended by good

results in improvement in general health and diminution in number of convulsions.—*Bryce Hospital Report.*

NEUROPATHIC HEART—C. H. Brockway, M. D., of Worcester, Mass., has found Cactina Pillets useful in functional disorders of the heart.

INJECTIONS OF OSMIC ACID FOR NEURALGIA.—Dr. Erwin Franck (*Fortschritte der Medicin*) reviews the literature from 1882 and recommends osmic acid, 1; distilled water, 6; glycerin, 4; (Schapiro) to be kept in a closed bottle. Of this one-sixth of a grain of the drug is used, although in one instance the dose was four times this amount. Three cases are reported—right facial neuralgia, sciatica, and tabes in ataxic stage. In the first, cure resulted; in the second, disappearance of the pain for eight weeks, recurrence, which the treatment failed to relieve; in the third, relief of the hyperaesthesia and neuralgia of the ulnar nerve, cessation of the pain during time of observation (one month). The needle is inserted perpendicularly and deep into the muscles or to the bone as near as possible to the most painful point, the overflow on the skin being prevented by a bit of cotton. When injections are made into the face, a smaller quantity should be used to avoid induration, which may be of a dark color.

SALINE SUBCUTANEOUS TRANSFUSION IN THE INSANE.—Dr. James T. Searcy, superintendent and physician-in-chief of the Bryce Insane Hospital at Tuscaloosa, Alabama, gives the following record of his work in this direction:

In some cases of acute mental disease, cases showing auto-infection symptoms, and in cases refusing food, excellent results have followed the employment by hypodermic transfusion of large quantities (one litre) of 0.75 per cent. blood-warm sterilized solution of sodium chloride. The injection is made into the loose areolar tissue of the abdominal wall or gluteal region. The improvement in circulatory activity and arterial tone, increase in urinary secretion, relief of dryness of lips and tongue, clearing of mental faculties, etc., are often quite pronounced, and perma-

ment improvement is sometimes obtained. The injections have not been used oftener than once daily; are sometimes used from one to three times only—sometimes continued for weeks. To the simple saline solution other salts may be added, as magnesium sulphate for its laxative effect, or the fluid may be made nutritive by addition of egg albumin.

The introduction of the needle and fluid is only slightly painful, and under antiseptic precautions no ill result will follow. This treatment has been used in about thirty cases.

THERAPEUTIC VALUE OF MERCURY AND ARSENIC.—

Probably, says *The Times and Register*, no practitioner is doubtful as to the therapeutic value of mercury and arsenic. Probably every physician has encountered grave difficulty in administering these agents for a sufficient length of time or in proper quantities to produce their full therapeutic effect. Before their remedial properties have had opportunity to exert themselves some form of stomachic disturbance or an exhausting diarrhoea accompanied by profound mental depression, have indicated their discontinuance for sufficient time to permit the patient to re-establish such tone as would enable him to again "stand the treatment." This is especially true in its application to mercury, and equally true, though in a lesser degree, with reference to arsenic. That these metals have been rendered more easy of assimilation and their therapeutic value distinctly enhanced by skillful manipulation and combination, recent medical literature leaves little doubt.

In the preparation known as *Arsenauro* we have in solution a combination of the bromides of arsenic and gold, which is certainly an advance in pharmacy.

Mercauro, which is one of the same class, has in addition to gold and arsenic the bromide of mercury in solution.

According to Drs. Stucky, Lydston, Wight, Dumesnil, Ingersoll, Wade, Kennedy and others, these solutions are blood-builders and blood-makers, valuable nerve tonics and vaso-motor stimulants, and in the experience of several,

Mercauro has earned first place in the treatment of the later stages of syphilis, with its accompanying nerve tissue degeneration.

A CASE OF CEREBRO-SPINAL MENINGITIS COMPLICATING GONORRHOEA TREATED BY ANTIKAMNIA.—The concluding remarks from the above article, by G. S. Leggatt, M.R.C.S., England, L.S.A., taken from the *Lancet* (London) are interesting from both therapeutic and physiological standpoints.

Remarks. 1. "This is a rare complication of gonorrhœa, and, as far as I can find, is not mentioned in any of the books which refer to the subject; but bearing in mind the similitude of structure between the meninges and the joints there seems no reason why they should not be occasionally attacked in a manner similar to the latter.

2. "Antikamnia is a remedy said to possess analgesic, antipyretic and anodyne properties. Its dose is three to ten grains, and it will be observed that the doses I gave were large ones; but the symptoms were extremely urgent, and it is interesting to note that there was no depression. During its exhibition the pulse improved in force, and the administration of the drug reduced the temperature to normal, and seemed in this respect to be greatly superior to that of phenacetin.

3. "As to the diagnosis it is difficult to know how the symptoms, which were of a most pronounced kind, could be accounted for on any other supposition than involvement of the fibrous textures of the spine and cranium. That the disease did not more definitely and more permanently attack the pia mater and arachnoid is probably due to the prompt administration of the antikamnia and salicylate combined, which seemed to me to prevent the optic neuritis and other more obvious and serious consequences of an established meningitis."

PSYCHIATRY.

NEUROPATHIC HEREDITY AND ALCOHOLISM, AND VICE VERSA.—Sollier, who wrote the recent Aubenal prize essay on alcoholism, commended and prefaced by Bourne-

ville, gives some clinical records which clinch the proofs beyond all controversy, as to both the neuropathic and the alcoholo-neuropathic heredity of the drink crave, the drink habit and the drink vice, and *vice versa*.

1. Ben—4 yrs. Congenital idiocy. Grandfather and great grandfather inebriates.

2. Maisohn—14 years. Epilepsy and hemiplegia. Father and paternal grandfather inebriates.

3. Deloim—11 years. Idiopathic epilepsy. Father and paternal grandfather inebriates.

4. March—8 years. Complete symptomatic idiocy. Father and paternal grandfather inebriates.

5. Dumas—10 years. Imbecility. Hemiplegia of left side. Father and paternal grandfather inebriates.

6. Assass—6 years. Complete idiot. Father and paternal grandfather inebriates. Paternal grandmother hemiplegic.

7. Lefes—21 years. Idiopathic epilepsy. Maternal grandmother and maternal cousin (german) inebriates.

8. Fan—5 years. Complete epileptic idiot. Maternal grandfather inebriate and idiot, and nephew of grandfather inebriate.

9. Abbad—10 years. Epileptic idiocy. Maternal uncle and grandfather inebriates. Maternal great grandfather nervous affections.

10. Marni—8 years. Cerebral atrophy and imbecility. Father inebriate, and paternal grandfather inebriate and suicide.

11. Porcher—6 years. Epilepsy. Father and paternal grandfather inebriates.

12. Peck—8 years. Slight idiocy. Father and paternal grandfather inebriates.

13. Qué—7 years. Complete idiocy. Father and paternal grandfather inebriates.

14. Amb—10 years. Epilepsy and mental debility. Father and paternal grandfather inebriates.

15. (Same Subject.) Mother and maternal grandfather inebriates.

16. Dur—7 years. Mental instability. Father and maternal grandfather inebriates.

17. Dethan—11 years. Idiocy. Father and paternal great-uncle inebriates.

18. Tanp—8 years. Slight idiocy. Father and paternal grandfather inebriates.

19. Noisen—19 years. Congenital idiocy. Father and paternal grandfather inebriates and apoplectics. Paternal uncle suicide. Paternal grand-uncle, apoplectic, and paternal great-grandmother senile dementia.

20. Ada—14 years. Pronounced imbecility. Father and paternal grandfather inebriates. Paternal grandmother paralyzed.

21. Berg—16 years. Epilepsy. Father and paternal great-uncle inebriates.

22. Bourarl—14 years. Epilepsy. Father and paternal grandfather inebriates.

23. Charpeut—11 years. Idiocy and deafness. Father and paternal grandfather inebriates.

24. Thierr—12 years. Hysteria and epilepsy, homicide. Paternal grandfather inebriate.

25. Comms—17 years. Imbecility. Father inebriate, and paternal grandmother inebriate and idiot.

26. Farg—13 years. Cerebral atrophy and hemiplegy of left side. Father and paternal grandfather inebriates and venereal.

27. Hunsick—16 years. Epilepsy. Mother and maternal grandmother inebriates.

28. Laugl—17 years. Mental instability and epilepsy. Father and paternal grandfather inebriates.

29. Rioch—13 years. Imbecility. Father's uncle and paternal grandfather inebriates.

30. Rami—16 years. Epilepsy. Father and paternal grandfather inebriates.

31. Co—6 years. Epilepsy and mental debility. Father and paternal grandfather inebriates.
32. Bourd—13 years. Symtomatic epilepsy. Uncle and paternal grandfather inebriates, and paternal grandmother died of an affection of the marrow.
33. Ducr—5 years. Mental instability. Sister and father inebriates, and mother insane.
34. Poup—8 years. Cerebral sclerosis. Father and paternal grandfather inebriates.
35. Cahe—17 years. Epileptic hysteria. Father and paternal grandfather inebriates.
36. Dufa—10 years. Idiopathic epilepsy. Father, uncle and paternal grandfather inebriates, and two paternal aunts inebriates.
37. Stem—10 years. Imbecility. Paternal grandfather and paternal great-grandmother inebriates.
38. Hel—18 years. Epilepsy and hemiplegia. Father and paternal grandfather inebriates. Paternal grandmother paralyzed.
39. Parment—16 years. Idiopathic epilepsy. Father and paternal grandfather inebriates.
40. Pen—16 years. Idiopathic epilepsy. Father and paternal grandfather inebriates.
41. Quen—9 years. Idiocy. Father and paternal grandfather inebriates. Paternal uncle suicide by hanging.
42. Riedling—14 years. Hysteria and imbecility. Father and paternal grandfather inebriates.
43. Reméli—14 years. Epilepsy and alcoholism. Father and paternal grandfather inebriates.
44. Rua—42 years. Alcoholic and epileptic. Father alcoholic and apoplectic, brother apoplectic, and cousin feeble.
45. Thei—19 years. Epilepsy. Father and paternal grandfather inebriates.
46. Bont—15 years. Idiopathic epilepsy. Father and paternal grandmother inebriates.
47. Guid—16 years. Epilepsia and dementia. Father ataxic, paternal uncle inebriate, paternal grandfather delir-

ium-tremens, and paternal great-grandfather inebriate.

48. Chambel—13 years. Complete idiocy. Uncle and maternal grandfather inebriates.

49. Min—7 years. Idiot. Father and paternal great-uncle inebriates.

50. Chér—59 years. Epileptic and alcoholic. Father and brother inebriates.

51. Car—34 years. Alcoholic and epileptic. Father alcoholic.

52. Mor—3 years. Epileptic idiot. Mother alcoholic and debauched. Maternal grandmother the same.

53. Led—14 years. Pronounced imbecility and epilepsy. Paternal grandfather inebriate, and two paternal cousins (german) epileptics and inebriates.

54. Lefer—27 years. Epilepsy, athetosis, and hemiplegia. Father and paternal grandfather inebriates, and paternal cousin (german) inebriate.

55. Coq—16 years. Epilepsy. Father and paternal grandfather inebriates.

56. Bar—18 years. Mental debility. Father and paternal grandfather inebriates.

57. Desant—45 years. Inebriate and epileptic. Father alcoholic, debauched and paralyzed, and paternal grandfather paralyzed.

58. Fourn—10 years. Epilepsy, idiocy and hemiplegia. Father and paternal grandfather inebriates.

59. Hug—15 years. Cerebral atrophy and epilepsy. Father and paternal grandfather inebriates.

60. Leqr—16 years. Idiopathic epilepsy. Father and paternal grandfather inebriates.

61. Lamruch—18 years. Idiopathic epilepsy. Paternal great-uncle alcoholic and suicide. Paternal great-grandfather alcoholic and suicide.

62. Lel—14 years. Imbecility. Mother and maternal grandfather inebriates.

63. Ney—37 years. Idiopathic epilepsy. Father and paternal grandmother inebriates and cousin (german) of father insane.

64. Delac—5 years. Idiot. Father and grandfather alcoholic.

65. Coeur—10 years. Idiot and hydrocephalus. Father and paternal grandfather inebriates.

66. Leclu—33 years. Epileptic hysteria. Father alcoholic, and paternal grandfather alcoholic and drowned.

67. Doucer—14 years. Epilepsy and infantile hemiplegia. Father and paternal grandmother inebriates

68. (Same subject)—Uncle and maternal grandfather inebriates.

69. Boyan—6 years. Epilepsy. Father, uncle and paternal grandfather inebriates.

70. Fair—9 years. Half witted in childhood and mental debility. Father and maternal grandfather inebriates.

71. Pica—16 years. Epilepsy. Brother, father, uncle and grandfather inebriates. Paternal grand-uncle alcoholic and suicide. Mother alcoholic. Maternal grandfather inebriate and hung. Maternal grandmother alcoholic and paralyzed. Maternal uncle and maternal great-grandmother inebriates.

72. Hub—19 years. Epilepsy. Father and paternal grandfather inebriates.

73. (Same subject)—Maternal grandmother and great-grandmother inebriates.

74. Hir—18 years. Hysteria and epilepsy. Maternal grandfather, and maternal great grandfather inebriates.

75. Hani—18 years. Epilepsy and mental debility. Father, uncle and paternal grandfather inebriates.

* 76. Alrat—17 years. Mental instability. Father inebriate, suicide, and paternal uncle and grandmother inebriates.

77. Hall—17 years. Epilepsy. Father, two uncles and paternal grandfather inebriates, sister nervous, and a grand aunt (on the mother's side) insane and maternal grandfather paralyzed.

78. Margal—13 years. Epilepsy. Brother and father inebriates, and paternal grand-uncle and grandfather the same.

79. Mige--13 years. Epilepsy and hemiplegia of left

side. Paternal cousin (german) inebriate. Father, uncle and paternal aunt inebriates, paternal grandfather and great-grandmother inebriates, and paternal grandmother insane.

80. Pius—17 years. Cerebral atrophy and hemiplegia of left side. Father, uncle, and paternal grandfather inebriates, hysterical aunt, melancholic great-aunt, and paternal grandmother nervous attacks.

81. Pig—11 years. Convulsions, vertigo, imbecility. Father and paternal grandfather inebriates, and paternal great-grandfather insane.

82. Pil—14 years. Imbecility and hydrocephalus. Father, grandfather, and grandmother inebriates.

83. Sauln—10 years. Imbecility and strabismus. Father, grandfather, and grandmother inebriates, great-grandfather and grandmother (parents of grandmother), inebriates.

84. Brouck—16 years. Idiot and epileptic. Father, paternal uncle and grandfather, inebriates, and paternal great-aunt insane.

85. Chas—4 years. Deaf idiot. Father and paternal grandfather and grand-uncle inebriates.

86. Etien—11 years. Inebriate. Maternal grandfather inebriate, and maternal great-grandmother, paralyzed. Insane cousin.

87. Toff—9 years. Imbecility and epilepsy. Father, paternal uncle and grandfather inebriates.

88. Taut—14 years. Complete idiot. Father and paternal grandfather inebriates.

89. Laumail—9 years. Imbecility and symptomatic epilepsy. Father and paternal grandfather inebriates.

90. Jon—5 years. Congenital idiocy. Brother, father, paternal grandfather, and maternal grandmother inebriates.

91. Lepi—12 years. Imbecility and cerebral sclerosis. Maternal uncle and grandfather inebriates.

92. Clong—3 years. Complete idiot. Mother, grandfather and grandmother, inebriates. Maternal great-grandmother inebriate.

93. Terr—10 years. Imbecility and infantile paralysis.

Paternal grandfather alcoholic and apoplectic. Great grandfather inebriate and great grandmother apoplectic.

94. Mong—50 years. Alcoholic and epileptic. Father alcoholic.

95. Février—20 years. Imbecility. Father inebriate. Paternal grandmother inebriate and insane. Paternal grandfather paralyzed. Paternal great grandmother demented. Paternal uncle insane, and paternal aunt demented.

96. Sorg—20 years. Idiot. Father and paternal grandmother inebriates.

97. Muls—18 years. Alcoholic and epileptic. Mother inebriate.

98. Widm—20 years. Hysteria, epilepsy. Two uncles and maternal grandfather inebriates.

99. Mor—14 years. Alcoholism, epilepsy. Father and maternal grandfather inebriates.

100. Songe—24 years. Alcoholic and epileptic. Paternal grandfather alcoholic. Paternal uncle insane. Paternal cousin-german hysteria.

101. Monneh—15 years. Imbecility and epilepsy. Mother and maternal grandfather, inebriates. Maternal great-aunt and grandmother suicides.

102. Alep—8 years. Alcoholic and epileptic. Father and paternal grandfather inebriates.

103. Bule—14 years. Idiot. Father, paternal grandfather and grandmother inebriates. Paternal cousin-german inebriate, and paternal grandfather hung.

104. Lob—1 year. Hydrocephalus. Father and paternal grandfather and grandmother inebriates.

105 (Same Subject)—Maternal grandfather and great-grandfather inebriates.

106. Caldair—12 years. Epilepsy. Brother, father and paternal grandfather inebriates.

107. Tot—55 years. Epilepsy. Father inebriate, and paternal grandfather paralyzed.

108. Rob—6 years. Symptomatic idiocy. Maternal grandmother alcoholic and debauched. Maternal great grand aunt insane. Maternal great aunt drowned.

109. Gonell—15 years. Epilepsy and hemiplegy of

left side. Maternal grandfather inebriate. Maternal great-grandmother paralyzed.

110. Dop—14 years. Symptomatic epilepsy. Father absinthic. Paternal aunt drunkard, and paternal grandmother apoplectic.

111. Siv—23 years. Idiopathic epilepsy. Father alcoholic, dying of cerebral apoplexy. Paternal grandfather paralyzed. Paternal great-uncle suicide. Paternal uncle epileptic and insane.

112. Bert—3 years. Idiot. Maternal uncle inebriate. Maternal great-uncle spendthrift. Maternal grandfather inebriate.

113. Mehn—17 years. Epilepsy, athetosis and hemiplegy. Father alcoholic and paternal grandfather paralyzed.

114. Masser—6 years. Pronounced imbecility. Father inebriate and paternal grandfather apoplectic.

115. Bruc—13 years. Imbecility. Father inebriate and paternal grandmother senile dementia.

116. Chaut—6 years. Symptomatic imbecility. Paternal grandfather inebriate. Paternal great-grandfather insane.

117. Doist—12 years. Epilepsy. Father alcoholic and paternal grandfather insane.

118. Rochet—12 years. Imbecility. Father inebriate and paternal great-uncle insane.

119. Poins—18 years. Idiot. Maternal grandfather inebriate and maternal great-grandmother paralyzed.

120. Boutr—8 years. Epilepsy and mental debility. Father inebriate and paternal grandfather insane.

121. Drug—16 years. Idiopathic epilepsy. Father alcoholic. Paternal grandmother paralytic.

122. Guinn—5 years. Imbecility (pronounced). Paternal uncle inebriate. Paternal grandfather suicide and asthmatic.

123. Georg—4 years. Symptomatic idiocy. Mother inebriate and maternal great-uncle insane.

124. Buff—16 years. Idiot. Maternal grandfather alcoholic. Maternal great-grandmother paralyzed.

125. Nom—7 years. Idiot. Father alcoholic and hysterical and paternal grandfather paralyzed.

126. Franc—13 years. Idiopathic epilepsy. Father alcoholic and paternal aunt insane. Paternal grandmother childish.

127. Stof—6 years. Complete idiot. Father inebriate. Paternal grandfather suicide (original).

128. Dupu—11 years. Congenital imbecility. Father inebriate and suicide. Paternal uncle inebriate and paternal great-grandfather suicide.

129. Huc—4 years. Alcoholism and imbecility. Father and uncle inebriates. Paternal grandmother cerebral rheumatism.

130. Heur—10 years. Complete idiot. Grand-uncle inebriate. Grandmother exalted. Great-grandmother insane.

131. Spor—14 years. Imbecility. Father alcoholic. Paternal grandfather cerebral apoplexy.

132. Cres—18 years. Epilepsy, loss of intellect. Father alcoholic with general paralysis. Paternal grandfather mysterious. Paternal grand-uncle suicide, persecuted, and insane.

133. Bri—16 years. Hereditary epilepsy. Father and uncle alcoholic and paternal grandmother epileptic.

134. Despaig—15 years. Epilepsy. Father alcoholic and epileptic. Paternal grandmother hysteric and debauched. Paternal grand-aunt insane, and two paternal great-uncles suicides.

135. Mor—11 years. Imbecility, epilepsy and deafness. Father inebriate and paternal grandmother demented.

136. Sim—16 years. Mental instability and alcoholic. Paternal grandfather apoplectic and a suicide. Mother nervous, maternal grandfather apoplectic.

137. Mor—16 years. Alcoholic and epileptic. Father apoplectic. Mother nervous and irritable. Maternal aunt and great-aunt insane.

138. Estes—7 years. Symptomatic idiocy. Father alcoholic, and paternal grandfather paralyzed, and paternal uncle insane.

139. Loi—6 years. Alcoholic and epileptic. Mother nervous and epileptic.

140. Mott—59 years. Epileptic and absinthic. Father died at 81. Mother senile dementia.

141. Hers—17 years. Pronounced imbecility. Father, excessive alcoholic and venereal, grandfather the same. Grandmother epileptic and insane. Uncle inebriate, aunt epileptic. Cousin-german epileptic.

PREVENTION OF INSANITY.—THE DUTY OF PSYCHIATRY AND THE STATE.—The German publicist, Dr. William Hirsch, has observed: "It becomes the task of modern Psychiatry not only to treat individual patients but also to observe society, and especially to guard against that phenomenon which ought to be termed Secular Hysteria, the peculiarity of which is that it attacks not isolated individuals but epidemically entire communities, and in that way influences the development and metaphysical conceptions of whole nations."

Is there not a corresponding duty on the part of the State to deliberately mould its policy so as to render the community less and less susceptible to such attacks, an obligation which, when once recognized, would be fulfilled from considerations of public economy? Such policy of prevention would extend to isolated cases. In our last Annual Report we ventured to refer to the importance of restrictions upon parentage. When congratulated upon the birth of his son, it is related that the father of Nero bitterly exclaimed: "The offspring of me and of Agrippina can only be a monster who will scourge the world." It is a startling thought that society is still content to breed under the laws of Roman degeneracy.

According to the modern doctrine of heredity it does not appear that it is a disease which is inherited, "but a diathesis, a predisposition, a want of resistance to all baleful influences of the direct, exciting causes of disease." This lack of resistance must be overcome by education. We have heretofore urged the extension of free instruction to the adult population by means of the school, the library, the lecture, the training in manual arts. It has been a theory of public instruction that the natural bent or inclination of the pupil should be watched for and developed.

Is it not evident that the theory is erroneous? We respectfully invite the attention of your Honorable Board to the suggestion that the mental point of least resistance is the point of danger, and that our system of public instruction should be so directed as to bring up the laggard faculties of the pupil and set them into harmonious co-operation.—
From Trustees Report, Pennsylvania Hospital for Insane.

PSYCHOTHERAPY.

DANGER OF HOME ATTENTION OF THE INSANE.—

In my report of 1894, I urged upon the citizens of Delaware the necessity of familiarizing themselves with the methods in vogue in caring for the insane and stated that a goodly number of cases were detained at their homes until they became dangerous to themselves and others, and then and then only they consented to allow them to be removed to a hospital. I cannot do better to instil this into the minds of the citizens of this State than to quote from the admirable work of M. Régis on Mental Medicine: "The fundamental principles of the treatment of the insane is isolation. This consists in separating the patient from his habitual surroundings from contact with persons and things familiar to him, amongst whom he lives, and where its disorder had its birth and development. Nothing is worse than the detention of the patient in his own dwelling, and the continuation of his stay amidst his family. There is, in such cases, the influences of the family on the one hand, an influence that is injurious and prevents or delays the cure; and on the other hand the influence of the patient upon his family, which is not less hurtful, and sometimes, where there are children, actually dangerous. Moreover we must take into account the danger from an insane person, either to himself or to society, against which his situation with his family affords only very insufficient guarantees. Isolation is, therefore, a measure of security and a powerful therapeutic agency"—Dr. Wm. H. Hancker, Med. Supt., Delaware State Hospital for Insane.

CLINICAL NEUROLOGY.

HYSTERIA.—A FAVORABLE PROGNOSIS NOT ALWAYS SAFE.—That a favorable prognosis is not always safe in hysteria, has been shown by Fournier and Sollier (*Jour. de Med.*). In some cases expectant treatment will not answer. Death may occur from spasm of the glottis. Fournier had a case with severe asphyxia in a young woman of twenty that was saved by faradism, but who afterwards had another attack, in which she died. Where there are laryngeal manifestations in hysteria it is not safe to leave the patient to herself. Potain had a case of hysterical angina pectoris that died, and the post-mortem revealed nothing to account for the fatal result. In hysterical anorexia, death also has been known to occur, even where artificial feeding has been resorted to. The system in such cases seems to have no power of absorption. Vaginal hysterectomy is particularly dangerous in such cases.—*Periscope, Medical and Surgical Reporter, February 6, 1897.*

KEROSENE IN ALCOHOLISM.—The most recent remedy for alcoholism in Russia is petroleum or paraffin oil, to which the notice of the St. Petersburg medical authorities was called by accident. It appears that a laboring man who had been drinking heavily for four days and nights entered, in a complete state of intoxication, a grocer's shop. Unnoticed by the shop keeper, he staggered up to an open cask of petroleum and began drinking from it. It is related that the petroleum cured him of all the effects of over-drinking; the nausea, unsteadiness of gait and headache disappeared as if by magic.—*N. Y. Med. Times.*

NEURIATRY.

THE TRAUMATIC NEUROSES IN THEIR MEDICO-LEGAL RELATIONS.—Dr. A. L. Hall, in a paper on this subject, concludes as follows:

1. The surgeon should be an equal authority with the neurologist in determining the sequences of trauma upon the nervous system.

2. Neurasthenia is the usual form under which traumatic neurosis expresses itself, and its symptoms are indistinguishable from neurasthenia arising from other than traumatic influences.

3. The actual condition of the patient previous to the accident must be known in order to reach a correct estimate of the damage from injury sustained by the nervous system.

4. The type of symptoms manifested by the neurosis, whether neurasthenical or hysterical, is oftentimes a question of vital importance in the adjudication of a claim for damages.

5. Traumatic neurosis occurs oftenest at the centres of population, but it is by no means a rare affection in the country districts.

6. It is probable that traumatic neurosis is dependent upon some definite—yet unknown—change in the arrangement and structure of the cellular elements of the nervous system, which gives rise to stable rather than unstable symptoms.

7. A stable, well-organized symptom complex indicates damage to the nervous structures; while instability of symptoms and want of orderly arrangement denote trivial injury, —and, if long continued, simulation is rendered probable.

8. The so-called "objective symptoms" depend upon the psychological rather than the physical state of the subject, and are unreliable guides to diagnosis.

9. A correct diagnosis is best obtained from a reliable account of the accident, the history of the previous state of the patient, the presence of surgical troubles, and the existence of a stable, well-defined, organized symptom complex.

10. The term "traumatic neurosis" is an expression for an indefinite condition, and a simplification of the subject is desirable from a clinical stand-point.—*Medical Record.*

THE PUPIL IN PARESIS.—Simerling (*Berl. klin. Woch.*) refers to the Argyll-Robertson phenomenon in the insane. In 3,000 cases of general paralysis (various observers) reaction to light was lost or diminished in 65 per cent. The symptom is an early one and of importance in the diagnosis of general paralysis. Referring to the Argyll-Robertson phenomenon along with the lost knee jerks, he remarks: "the

more advanced the disease the more these symptoms are found together. Permanent one-sided loss of light reflex is rare. The irregularity in the pupil in general paralysis is well recognized. Diminished reaction to light first occurs, then total loss, then paralysis to accommodation". In a few cases of general paralysis without tabes, Simerling has noted the phenomenon recorded by Gowers, namely, the pupil first of all reacts to light, then dilates and ceases to respond. The inequality of the pupils shows considerable variability of the pupils on different days. The pupils are usually stable in general paralysis. The phenomenon was also observed in 19 cases of senile dementia and even in old people of sound body and mind. It was present in 9 cases of syphilis of the central nervous system, but was rare in chronic alcoholism. The loss of this reflex is an extremely important symptom, and even when it does not cause serious misgivings as to the presence of general paralysis, etc., it points to a disturbance in the central nervous system. General paralysis may supervene many years after the loss of the light reflex. The loss of this reflex undoubtedly constitutes one of the chief distinguishing features between epilepsy and hysteria. If the reaction is sometimes present in epilepsy, then, in the author's opinion, there is hystero-epilepsy.

NERVOUS FUNCTIONS OF THE SUPRARENAL CAPSULES.—Dominicis has already published various studies of the functions of the suprarenal capsules, and a recent article by him in the *Gazetta d. Osp. e d. Clin.* of November 22, 1896, throws new light upon their connection with the nervous system. The experiments he describes on dogs and rabbits consisted in the transplantation of one capsule, after ligating its pedicle, to the internal and anterior surface of the kidney, leaving its point of attachment intact. The animal remained in the same health as before. Ten to fourteen days later, he removed the other capsule, and in every case the animal died in three hours with the same symptoms as when both capsules are removed at once. The transplanted capsule showed no traces of degeneration, anatomically nor histologically, and seemed to be perfectly normal. Its func-

tion, however, was evidently suspended, and it was unable to take the place of the other capsule when it was removed, as occurs in the case of glandular organs with an internal secretion, when they are transplanted or ingrafted, the thyroid gland for instance. He adds his experience that section of the spinal cord below the level of the capsules invariably retards death for eighteen to twenty-six hours when both capsules are removed at once. These facts demonstrate that we must look elsewhere than to an exclusively glandular function in ascribing a role to the suprarenal capsules.—*Journal of A. M. A.*

NEUROPATHOLOGY.

NEURASTHENIA AS A TOXIC NEUROSIS.—Experiments have shown that the sense of fatigue is due to poisoning of the cerebrum by the products of retrograde metamorphosis. "The blood of a tired animal is poison, and when injected into another animal causes the phenomena of fatigue." Vigoreaux, in a monograph upon this subject, claims also that all neurasthenics are arthritics, basing this upon the analysis of the urine in one hundred and fifty cases. The urine was invariably found to be highly acid. Bouchard believes that it is due to gastro-intestinal auto-intoxication. Neurasthenia is sometimes a sequel of an acute infectious disease, as influenza or typhoid fever.

In the first place, then, neurasthenia is due to a toxæmia; due not to one, but to a variety of poisons. These are sometimes bacterial in origin, as in cases following influenza or gastric-intestinal fermentations; sometimes the poison is uric acid, but most often the nervous system is poisoned by its own excreta—Dr. John Ford Barbour in *American Practitioner and News*.

[But in the neurasthenic constitution it is the neurasthenia that permits the toxæmia to take place and persist.—Ed.]

EDITORIAL.

[All Unsigned Editorials are Written by the Editor].

Higher Medical Education is being continually sung in our ears by little men in the profession who happen to get onto State Boards of Health and wish to appear great by talking "large" on this subject, as if medical education had not steadily advanced most marvellously during the last few decades and as if the equipment of the leading medical schools were not constantly adding to their teaching facilities since the day when Benj. Rush founded the first medical college in this country, patterned after the best schools of Great Britain, and as if medical men in this country who teach in the best chartered colleges were all incompetent.

It is a strange spectacle to see this everlasting notoriety seeking by medical men "clothed with a little brief authority," assaulting colleges ten fold better than those they graduated in, with facilities twice as great and far better qualified, equipments far more complete and terms of study lengthened to twice the time they spent as students.

The little fellows of some State Boards are the most clamorous for higher medical education, restrictive legislation and discrimination against the diplomas of the best chartered colleges.

The medical profession can not be trusted to exercise chartered rights, like other instructors, when instructors secure charters to teach, but must be subjected to additional espionage by state medical detectors called examining boards, and last comes a new proposition to examine the professors, as if faculties of honorable medical men and boards of trustees controlling our medical colleges required this spying system more than the literary and scientific universities of the land. But if the faculties are to be examined by a board of examiners, who will examine the examiners and attest their qualifications?

Now we are opposed to this whole system of discrim-

inating espionage reflecting on the integrity and qualifications of the teaching element of the United States and it is a shame that it should come only from medical men, too, who are usually of exceedingly slender qualifications themselves and who wish to appear great in their littleness by defaming American medical education, which, considering that it gets no aid from the state or people, and is in no sense a paying business to those engaged in it, is the best in the world and is making more strides to-day in the direction of the very zenith of practical utility than that of any other country. And what country has such institutions of medical teaching as the United States as sole result of personal professional effort, zeal and financial support without state aid?

Rush and Jefferson, the universities of Pennsylvania, Virginia, Minnesota, Michigan, Bellevue, Barnes, Baltimore, California, Tulane and in nearly every city and state are monuments of indefatigable medical devotion and largely disinterested sacrifice of medical time, talent and means, to advance medical education. Every large city on this continent has schools of which Americans may be justly proud, notwithstanding the notes of defamation and puerile cries of suspicion directed from various unhallowed motives against them.

Defamation of American medical colleges by little mediocrities in medicine has about reached the limit of toleration by the friends of medical education in the profession.

The question how to improve and advance is always in order, but late methods of public defamation of American schools is dispicable and disastrous to the welfare of the whole medical profession and should be discountenanced and discontinued.

State boards and schools should arbitrate differences and not antagonize.

Program of the Section on Neurology and Medical Jurisprudence of the American Medical Association.—Tuesday, June 1st.—Chairman's Address, Dr. W. J. Herdman, Ann Arbor, Mich.; History of the Section on Neurology and Medical Jurisprudence, Dr. J. G. Kiernan, Chicago; History of American Neurology, Dr. C. H. Hughes, St. Louis; On the Pathogenesis of Locomotor Ataxia, Dr. L. Harrison Mettler, Chicago; Trunk Anaesthesia in Locomotor Ataxia, Dr. Charles W. Burr, Philadelphia; The Paralysis, by One of the Many Paralytics, Dr. Samuel Knox Crawford, Chicago; Internal Cerebral Meningitis Chronica, Dr. E. S. Pettijohn, Alma, Mich.; The Differ-

ential Diagnosis between Cerebral Syphilis and General Paresis, Dr. Hugh T. Patrick, Chicago; Hereditary Lateral Sclerosis, Dr. Augustus A. Eshner, Philadelphia; A Case of Thomsen's Disease Complicated by Multiple Neuritis, Dr. M. Nelson Voldeng, Des Moines, Iowa; Pain Traumatism, Dr. Thomas H. Manley, New York City; Melancholia and its Treatment, Dr. W. S. Watson, Fishkill-on-Hudson, N. Y.

Wednesday, June 2nd.—Aphasia, Dr. Charles K. Mills, Philadelphia; Discussion, Drs. F. X. Dercum, Hugh T. Patrick, William G. Spiller, Barney Sachs, J. J. Putnam, C. W. Burr and W. J. Herdman; French and Motor Aphasia in a Polyglot, Dr. Frederick Peterson, New York City. The Subconscious Mind, Clark Bell, Esq., New York City; Some States of Disturbed Consciousness, Dr. J. T. Eskridge, Denver, Colo.; Expertism, Dr. S. V. Clevenger, Chicago; A Synopsis of the Duestrow Case, Dr. L. Bremer, St. Louis; The Medico-Legal Aspect of Chorea Insanities, Dr. C. C. Hersman, Pittsburg, Pa.; Insanity and Pulmonary Consumption Among the Negro Population of the South Since the War, Dr. Thomas J. Mays, Philadelphia; Remarks on the Curability of Insanity, Dr. John Puntton, Kansas City, Mo.; (a) Alcohol as a Causative Factor in Disease of the Central Nervous System. (b) Inebriety and Tuberculosis as Allied Diseases, Dr. T. D. Grothers, Hartford, Conn.; The Status of the Present Treatment of Alcoholism, Dr. J. K. Bauduy, St. Louis; Stigmata in Young American Degenerates, Dr. Eugene S. Talbot, Chicago; Some Affections of the Sympathetic Nervous System, Dr. Jas. Hendrie Lloyd, Philadelphia; Subject un-announced, Dr. Henry W. Coe, Portland, Oregon.

Thursday, June 3rd.—Neurasthenia Essentialis and Neurasthenia Symptomatica, Dr. F. X. Dercum, Philadelphia; A Study of the Symptomatology of Neurasthenia in Women, Dr. Louis F. Bishop, New York City; Clinical Evidences of Neurasthenia as an Abdominal Neurosis, Dr. G. Betton Massey, Philadelphia; Function of the Nerve Cell, Dr. Wm. B. Hall, Jr., Sewanee, Tenn.; The Causative Factors in Disease of the Central Nervous System, Dr. Geo. H. Rohe, Sykesville, Md.; The Use and Abuse of Electricity in the Treatment of the so-called Neuroses, Dr. L. Harrison Mettler, Chicago; The Rest Cure, Dr. Landon Carter Gray, New York City; Discussion: Drs. Chas. K. Mills, E. S. Pettyjohn and C. H. Hughes; Rest and Northern Lake Air for Neurotics, Dr. E. S. Pet-

tyjohn, Alma, Mich.; Treatment of Graves' Disease, Dr. Herold N. Moyer, Chicago; Discussion: Drs. A. A. Eshner, and C. H. Hughes; Habit Spasms of Children, Dr. Samuel J. Fort, Ellicott City, Md.; A Study of the Development of Some Common Psychoses of Childhood into Permanent Criminal Tendencies, Dr. J. Francis Calif, Middletown, Conn.; Subject Unannounced, Dr. H. O. B. Wingate, Milwaukee, Wis.

Friday, June 4th.—*Tumor of the Spinal Meninges, Drs. Charles K. Mills and Aloysius O. J. Kelly; *(a) Fibroma of the Dura, (b) Syphiloma of the Dura, (c) Glioma of the Thalamus, Drs. Chas. W. Burr and Aloysius O. J. Kelly; *Tumors of the Cerebellum with the Report of a Case, Dr. Aloysius O. J. Kelly; *A Clinical and Pathological Report of a Case of Chronic Progressive Non-Specific Dementia with Arterio-Sclerosis, Drs. Charles K. Mills and Mary Alice Schively; *A Case of Paretic Dementia with Autopsy, Dr. Charles W. Burr and John H. W. Rhein; *Tumor of the Basal Ganglia, Drs. Charles W. Burr and Carl Ohnesorg; *Tumor of the Spinal Meninges, Drs. Samuel W. Morton and A. Ferree Witmer; Bilateral Psychomotor Myo-Synchrony, Dr. C. H. Hughes, St. Louis; Meningo-myelitis with Special Reference to the Tubucular Form, Dr. William G. Spiller, Philadelphia; (a) A Contribution to the Pathology of Myelitis, Acute and Chronic, (b) Lesions of the Spinal Cord Due to Tubercular Disease of Column, With Microscopic Specimens, Drs. John K. Mitchell and John H. W. Rhein, Philadelphia; Ruminantion in Man, Dr. Wharten Sinkler, Philadelphia; Tremor in Chorea, Dr. John H. W. Rhein, Philadelphia; Hypnotism in the Treatment of Disease, Dr. U. O. B. Wingate, Milwaukee.

Typhoidous States.—After Woodward receded from his attitude on typho-malarial fever and Da Costa objected to the term typhoid-pneumonia, etc., American medical teachers and authorities began to drop the use of the term. We think this was a mistake. There are states of nervous exhaustion like those which accompany typhoid fever, without the coexistence of this fever with its characteristic enteric feature, for which we need a descriptive term. These are real typhoidous states without the implication of Peyer's patches. They are nervous typhoid conditions minus involve-

*From the Second Report of the Neurological Laboratory of the Philadelphia Polyclinic which is established in connection with the Department for Diseases of the Mind and Nervous System, and in charge of Professors Charles K. Mills and Charles W. Burr.

Members of the Section are invited to visit the Laboratory.

ment of the elliptical plates. They are true typhoidous states, as much entitled to be so regarded because of the exhaustion resemblance to the typhoid fever accompaniment, as true typhoid is to the typhus, after which it is named because of its symptomatic resemblance, and from which it is differentiated because of its distinctive intestinal pathological contrast. Then let us have a typhoidous pneumonia, a typhoidous malarial fever, and a typhoidous nervous exhaustion or a typhoidous malarial neurasthenia, with the understanding that the true typhoid sign is not a factor in the cases. We need such a term for descriptive papers, because such states are clinical facts.

Kleptomania and the Case of Mrs. Castle.—

The *Humanitarian* comments with some justice on this case, though we by no means go to the extent of considering crime as "generally a form of insanity."

"The case of Mrs. Castle is one of those which illustrates every now and then the crying need of reform in our criminal law. Her case was one for the psychologist rather than the bribed juryman; for the doctor rather than the judge. The Home Secretary recognized this, by promptly commuting her sentence, which was tantamount to a confession that she never ought to have been sent to prison at all. The whole question of crime and criminal tendencies needs overhauling from a scientific point of view. To treat it merely from the Old Bailey aspect is brutal, ignorant and ineffective. Half the unhappy beings who are hauled before our Police Courts should be dealt with by scientists rather than by lawyers. Crime is generally a form of insanity. And this is especially true of kleptomania, which is far more widespread than most people imagine. There is no need to mention names, but it would be easy to call to mind many eminent personages who have been afflicted with this disease, which numbers its victims largely among women."

In this case the inconsistency appears of a bail fixed at 40,000 pounds as an equivalent for three months' deprivation of liberty.

The Medico-Legal Journal of New York has an interesting abstract on this subject from Prof. Lacassagués before the Congress of Criminal Anthropology in whose views however we do not fully concur.

There is a definite line between normal theft and abnormal stealing or kleptomania, and that is in the volitionally regulated promptings of healthy but wrong motive and the resistless impulsions of disease. The disease is often

inferable in the character and motive of the thefts and almost always provable in the physio-mental disease of the victims of kleptomania.

Lacassagués makes a move in the right direction in his resolution recommending that the large stores exert greater surveillance and place less temptation in the way of those mentally and neurotically weak creatures who under great temptation may develop into either thieves or kleptomaniacs, for there are both, and both may be found among the rich and the poor.

The National Medical Review very justly expressed its surprise that some of its exchanges have inclined toward *London Truth* in its discussion of the sad case of Mrs. Castle. It says: "As our readers know, this London journal took the position that it was only the rich who were ever afflicted with kleptomania, while the poor were always regarded as thieves. Both *Truth* and some American journals appear to forget that one of the strongest evidences is that the party committing the theft has no need of the things stolen. If the person who takes the goods is poor this would not be the case, for even if the goods could not be used they could be readily disposed of at a good figure. So strong are the temptations connected with poverty that it would be difficult to imagine that a person in need would store away in her room a large number of goods which could be readily sold or pawned and the proceeds devoted to satisfy comfort and hunger. We do not remember ever having heard of an instance where a person in need of food and clothing stored away quantities of goods in this way. On the other hand, we have one who is supplied with every need, and is surrounded by everything which money could purchase in order to make life happy and pleasant. Such a person has no possible use for a large number of articles of one kind. Well fed, richly clad, surrounded with luxury, there can be no temptation to take articles of small value, either for use or in order that they may be sold. We think there is every good reason to believe that kleptomania is a disease which affects the rich more than the poor."

Tri-State Medical Society of Iowa, Illinois and Missouri, held a well attended and successful meeting at St. Louis, on the 6th, 7th and 8th of the present month.

The following officers were elected: Dr. Emory Lanphear, President; Dr. C. E. Ruth, of Keokuk, Iowa, First Vice-President; Dr. E. Wyllis Anderson, Chicago, Second Vice-President; Dr. J. W. Fowler, Dubuque, Secretary;

Dr. C. S. Chase, Waterloo, Iowa, Treasurer. Dubuque was selected for the next place of meeting.

New Pathological Department.—The Indiana Hospital for the Insane announces, with ground plan and elevation, the finishing of its elegant and complete pathological department, whereon the superintendent, Dr. Geo. F. Edenharter, justly remarks: "It is a great credit not only to the State, but reflects the greatest wisdom on the part of the Board of Control. The benefits to the people will be very great."

This is not only a great credit to the State but a great credit to science and the welfare of the insane, promising more light on the dark processes of cerebro-mental disease and opening the way further for the lifting of the cloud that hangs over mental aberration.

National Confederation of State Medical Examining and Licensing Boards.—The seventh annual meeting of this Confederation will be held in the small banquet hall of the Hotel Walton, at Philadelphia, Monday, May 31, 1897, at 10 o'clock, A. M.

The object of the confederation is to consider questions pertaining to state control in medicine and to compare methods in vogue in the several states; the collection and dissemination of information relating to medical education, and to consider propositions that have for their purpose advancement of the standards in the United States. A cordial invitation is extended to all members and ex-members of state medical examining boards, and to physicians, sanitarians and educators who are friendly to the objects named, to attend the meeting and participate in its proceedings.

Officers: President, Wm. W. Potter, Buffalo, N. Y.; Vice-Presidents, Chas. A. L. Reed, Ohio, J. N. McCormack, Kentucky; Secretary and Treasurer, A. Walter Suiter, Herkimer, N. Y.

Hobart A. Hare.—Messrs. Parke, Davis & Co. announce the complete equipment of a Pharmacological and Bacteriological Laboratory for the careful testing of all their drugs and antitoxic serums, and that they have retained the services of Dr. Hobart A. Hare, Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, as Consulting Therapeutist for their house. Dr. Hare will undoubtedly prove an invaluable acquisition, as this firm believes, to its Medical Staff as all questions relating to the practical value of new and old remedies, and to the relative merit of various preparations, will be referred

to him for an opinion. The profession may congratulate itself that its interests will be well looked after with Messrs. Parke, Davis & Co. The gentlemen in charge of their Biological Department are Dr. Charles T. McClintock and Dr. E. M. Houghton, formerly of the University of Michigan. They will continue to supervise the manufacture of their bacteriological agents, test their pharmaceutical products, and investigate the physiological action of new remedies. Though the laboratory worker is not in position to speak the last word on the remedial value of therapeutic agents, such researches, supplemented at the bedside and in the hospital by searching study of the clinical behavior of drugs and the indications for their use, is what the profession requires from its therapeutic caterers.

Parke, Davis & Co. are keenly mindful of this vital connection between scientific research and actual bedside results, and appear to profit by every resource which may contribute to the potency, the uniformity and the reliability of their products.

The Profession will recognize the earnest progressive spirit of this great northern firm.

Aphasia Medico-Legally Considered.—*The Medical Press* remarks that, "it is quite possible that in due course of time the question of whether aphasia constitutes a legal disability in the case of a patient making a will, will be brought forward for decision. Dr. Mantle, of Halifax, has just recorded a case in which an aphasic patient of his made a last will and testament under certainly unusual circumstances. The patient formed the outline of the letters on the bed-sheet with his finger, and then explained to his solicitor and wife that when they meant "yes" they were to squeeze his hand, and when they meant "no" to tap it. In this manner the testator was able to have his wishes incorporated in a will, which he subsequently signed with his left hand. Of course the point upon which the legality of the document will depend is, whether there is sufficient evidence to show that the mental condition of the patient was satisfactory at the time that the will was drawn up and signed. As such point has never been raised before, the matter is one of no little interest."

A similar point has been raised before and affirmatively settled in the courts of St. Louis in the case of Wm. T. Bevan, reported by the editor of this journal, which we reproduce, wherein the writer, with other physicians, maintained the affirmative of the proposition and they were sustained by evidences before the jury and the jury's

decision. The subject of aphasia was then comparatively new, and its literature far less than at present, while the knowledge of this subject was less extensive, definite and elaborate than now appears from the later researches of Bartholow, Mills, Eskridge and others in this country, to say nothing of European contributors, which, however, have not equalled those of American writers, if we except the physiological experimentations of Heitzig, Ferrier and others.

Change of Address.—*The Columbus Medical Journal* has removed from 150 E. Broad Street to its new quarters, 58 Buttles Avenue, Columbus, Ohio.

A Study in Morbid Egoism.—Under an entirely different caption and not for a purpose wholly different from this editorial, our esteemed seaboard contemporary, the *Boston Medical and Surgical Journal*, thus discourses:

"From time to time the enraged practitioner, or the statistically inclined editor of a medical journal, raises his voice in melancholy plaint and inveighs against the dread evil of Hospital and Dispensary into whose hungry maws, ever insatiable for material, he sees disappearing day by day the last remnants of the 'general practitioner's' *clientèle*. To him no words are strong enough to express his condemnation of 'misguided charities'; and in the blindness of his rage he totally overlooks a far more formidable antagonist, who stands between the public and himself and takes more dollars from his pockets than any hospital clinic that ever existed. We refer to the wily patent-medicine man. Backed by the testimonials of a host of so-called 'cures,' both male and female, selected from the most prominent walks of life, he probably accumulates more money in a month than the average medical practitioner does in a year, for at no time within our memory has the craze for exhibiting their photographs with a neatly-worded and convincing testimonial appended as the virtues of this, that or the other quack nostrum, been so rife among people whose names are household words all over the country and whose influence among the masses is widespread. The unblushing manner in which women disclose to the general mass of readers of the daily papers the pathological workings of their genito-urinary apparatus and the marvelous relief which they obtain—as evidenced by the redundancy of mammary tissue exposed in the accompanying wood-cut—by merely purchasing a bottle of Mrs. Allslop's Ovarian Stimulator, after they have been for months exposed to the ruthless fingers of all the best-known gynecologists, is enough to bring a

flush to the cheek of a pernicious anemic—but it doesn't, it simply sends hundreds of other suffering females in search of this wonderful remedy for their self-diagnosed complaints.

"Not a day passes but the lay press contains a villainous reproduction of the face of some well-known divine, accompanied by a testimonial overflowing with exuberant gratitude for the remarkable manner in which Dr. Charcoal's Tablets have enabled him to overcome the ravages of a deadly disease whose nature was so obscure that it defied the skill of the most renowned specialists even to determine. Cheek by jowl with him will be imprinted the philanthropic features of some famous temperance advocate who testifies in language whose sincerity is beyond a doubt, that it is only through the constant use of Brown's Nervine Invigorator (mainly proof-spirit with a dash of gentian and nux) that he is able to withstand the strain upon his nervous system incident to his vigorous onslaughts upon the demon Rum.

"Next to the pulpit, the stage furnishes the greatest number of promising wrecks who have been snatched from an untimely grave—or from the lunatic asylum, more's the pity!—solely by the use of Someone's Malt or So-and-So's Wine, the secret of whose virtue is beyond the chemist's art to discover, but which probably owe their wonderful therapeutic value to the fact that they are a little more stimulating than beer and a trifle less paralyzing than absinthe. It will not be overstepping the narrow bounds of truth to say that there is hardly an actor or actress, singer or songstress of any repute to-day, for whose power to entertain we are not indebted to the magic influence of some patent nervine or reconstructive.

"Even the legal profession is not loth to lift its voice to swell the chorus of praise for services rendered by the various prominently advertised nerve-foods and panaceas: and not a few eminent law-makers unconsciously—but clearly—explain, in the exhaustive symptomatology which they detail of their sufferings previous to their use of one of these panaceas, that peculiar flavor of general paresis so characteristic of certain statutes governing the practice of medicine.

"Now that athletics stand so conspicuously before the public, we are everywhere confronted by the beautifully portrayed musculatures of crack athletes who owe their wonderful powers of endurance to an occasional nibble at Blank's Comatogenous Biscuits washed down by two or

three drops of Somebody's Kola Preparation to whose superiority as a preventive of undue tissue waste, the lavish supply of muscles in which the athlete rejoices abundantly attests.

One cannot sit down in an electric car without being confronted by a galaxy of lithographic beauties singing the praises, in rubricated rhyme, of coal-tar products or cold cream; and beside them one beholds the smiling and scorbutic countenance of a banker's or a merchant's child—money no object—whose once feeble frame was coaxed into vigorous activity by some patent food, after it had nearly succumbed to the misdirected onslaught of the best-known pediatricists.

"The effect of all this upon the general public can be easily imagined. If the Rev. Dr. This or the Hon. That has been cured by somebody's nostrum, or if their babies are able to thrive vigorously on a patent food, why shouldn't the humblest of these gentlemen's admirers and their babies do the same? They try one bottle—and keep on buying just as they keep on buying lottery tickets, until their money is exhausted, and then—too poor to employ even the general practitioner, they turn in desperation to the dispensary and hospital clinics where they faintly hope that they may come in contact with some specialist who will, by mere bull-luck, be able to stumble upon a remedy for their complaint. Let the general practitioner be content!"

With the addition of certain obscure proprietary medicine enthusiasts who tell the most wonderful and unguarded stories of remarkable success with impossible *clientéles* and often impossible dosages compatible with continuing lives to imaginary patients, the above picture of notoriety egotism (to use no harsher term), is complete. The egotism that prompts many of the improbable statements attending the (unpossessed) powers of some of the numerous *ines*, etc., on the medical market, when not positively venal and mercenary, is often absolutely morbid, and a prelude in some cases to mental doom, as the certificates themselves are *prima facie* evidence of that mental weakness which is precursory of cerebral softening.

The Rights of the Insane in State Hospitals.

—Since the foundation of this Government, when the divine prerogative of kings to oppress their people was denied and it was declared that all Governments among men derive their just powers from the consent of the governed, declarations in state bills of rights have been made and statutes have been framed for the protection of the governed against

the executive and other official oppression. State after state, our own Missouri among them, has reiterated the affirmation of the fathers of the Declaration and the Constitution, until now the rights of sane people are pretty well secured, except the steady encroachment on individual rights to liberty of business by combined capital, which, like the usurers among the money-changers of old, should be and will be similarly restrained and regulated by law. We have, in the main, as a people, made good the declaration of our fathers, that men have precious rights, and Governments and Governors are created among men to protect and defend these rights. So much for the rights of the rational.

But how about the rights of the insane? When a citizen, who in his best estate, has helped to sustain the eleemosynary institutions of his commonwealth by faithful exercise of his franchise and the payment of his taxes, falls mentally maimed in the battle of life, is carried to the rear and is placed in the hospital for the insane, he has helped to provide; if he belongs to that large army of men, who, for himself and his household, employs one or more of the 5,000 regular physicians of the state to minister to his health, when he or his wife or child, or other kindred, becomes insane, must he have forced upon him medical service which, in his sane estate, neither he nor his family would have approved? Has he lost his rights with his reason? The state stands in his stead as though he were sane, and has no more right to force upon him obnoxious medical service than to force food upon him which he could not tolerate when rational. The state and the law should guard his rights to life and happiness according to his sane ideas.

The curator or guardian of an insane man, who accepts for his insane ward the medical attention of the votary of sectarian medicine, homœopathist, eclectic, Thompsonian, vitapathist, osteopathist, mind or spirit healer, which his ward would not have accepted for himself if sane to choose, violates the right of that man, even though he be now insane. It is not necessary to quarrel over the claimed merits of the isms and pathies in medicine. The question of sectarian medical aid to non-sectarian insane people is not a question to be entertained in the premises.

Another right belonging to the insane is the right to receive at the hands of the state every aid promotive of the speediest possible recovery of this mind. To this end the statutes of many states now provide that the physician

whom the Governor may select as medical chief of state asylums shall not be a tyro or a novice in psychiatry. The rights of the insane require, and in the name of those helpless wards of the state who by grave affliction are incapacitated from maintaining their rights, a Nineteenth Century humanitarianism demands, as their friend, that their rights in this regard be respected by their guardians, the state and its executive. It is a crime against their rights in the premises to place them under the medical care of men without adequate special experience in this most intricate branch of medical practice. These rights of the insane the state should be bound to respect, and it seems to me that the courts could enforce them. The superintendent of a hospital for the insane should be a man who has lived among them and learned well how to treat them.

"The treatment of insanity," says a great authority, "is now so much confined to the heads of extensive establishments in which its subjects are congregated, that opportunities for studying it are comparatively limited in ordinary practice, so that a physician may be justly celebrated in the knowledge and treatment of other diseases, and at the same time be poorly qualified in matters pertaining to insanity."

Again he says: "Physicians are frequently unwilling to believe it" (as we see every day by the way they rush into court with these crude unsustainable theories) "and are disposed to act on the popular notion that all medical subjects are equally familiar to them."

These rights of the insane are but the golden rule applied, and if you but reflect upon them, most excellent Governor, your heart will approve them. If you wish to understand this question look into your own heart and you will see that justice demands the recognition of these rights. Your official oath demands of you to guard, and not to violate, to protect, and not to invade, them."

The statutes of Missouri say "the superintendent shall be a physician of knowledge, skill and ability in his profession and of special skill and experience in the care and management of the insane."

This article is inspired by an attempt on the part of the Governor of Missouri to turn over an old institution under regular management to the homœopaths. It concedes all it asks, namely, the political right of people of the homœopathic faith having a separate hospital if any considerable number of that faith ask for such an institution.

The Semi-centennial Meeting of the American Medical Association, which will be held in Philadelphia on the 1st, 2nd, 3rd and 4th of June, 1897, bids fair to surpass in the character of the entertainment, the scientific papers and the number in attendance, any meeting which has heretofore been held. The Committee in charge has been able to obtain large and roomy places of meeting for the general meetings and the section meetings, all within a single block, and within very short walking distances or immediately adjacent to the largest and most comfortable of the Philadelphia hotels.

For the week preceding and following the meeting the Committee of Arrangements have also arranged for clinical courses which will be open without charge to all physicians who may visit the city at that time. These courses cover every branch in Medicine and its specialties and will afford visitors the opportunity of seeing the active clinical work of all the great teachers of Philadelphia, which is now, as it has been for so many years in the past, in every respect the medical centre of the United States.

Poetic Therapy.—It is seldom we find poetry and physic blended. Dr. Frederick B. Sutton has "set on" Frank Ruf's Antikamnia in the following poetic fashion:

A-ll the nerves gone on a bender,
 N-ot an organ is exempt,
 T-eeth and scalp and muscles tender,
 I-cy chills, the bones pre-empt;
 K-aleidoscopic are the symptoms legion.
 A-s they over-run the system,
 M-aking life a weary region,
 N-o one able to resist them.
 I-s there nothing that will cure?
 A-ntikamnia will. I'm sure!

Bi-Lateral Psychomotor Myosynchrony.—A case of this kind atavically descended from a grandfather has fallen under our observation in the person of a girl about sixteen years who cannot move the fingers of one side without the corresponding fingers of the other being similarly moved, and who could not learn to play the piano in consequence.

We think Erb has somewhere described a case or cases of this kind, but do not know when or where, or what he called them. For want of a better name, we designate this condition bilateral psycho-motor myosynchrony, the muscles moving in synchronous manner when a psycho-motor impulse

is directed to but one side. The patient is not ambidextrous.

American Public Health Association, comprising the United States of America, the Dominion of Canada, and the Republic of Mexico, will hold its twenty-fifth annual meeting at Philadelphia, Pa., October 26th, 27th, 28th and 29th, 1897.

Medico-Psychological Association of Great Britain and Ireland.—The next annual meeting of this association will be held in Newcastle, at the College of Medicine, in the latter part of July. Notice of the dates and other particulars will be issued in due course.

A considerable part of the time of the meeting will be devoted to discussions, papers, and demonstrations, on subjects connected with insanity and the structure and functions of the brain and nervous system. The president, T. W. McDowall, M. D., Northumberland County Asylum, Morpeth, and Hon. R. Percy Smith, M. D., Gen. Secretary, 11 Chandos Street, Cavendish Square, London, W., will be glad to receive at an early date the title of the paper which any member proposes to read at the meeting, or subject he designs to bring before it.

Gayety and Gloom.—A visitor to a lunatic asylum, seeing therein a former friend and noted wit, expressed his surprise that one formerly so jovial should now appear so depressed, for his friend was a victim of profound melancholy. Thereupon the victim of melancholy replied: "It was then my business to make people laugh. My business exhausted me and I am tired of it and of life."

The daily press has not failed to note that excessive wit making may exhaust the brain, as well as excesses of other sorts. The people of the gay French Capitol have lately noted the fact, and their newspapers ask: "Where are the leading French humorists of the last twenty years? Gil-Perez, an eccentric comedian on and off the stage, died mad; Andre Gill, a caricaturist of undoubted genius, went the same road, as did also Charles Desteuque, one of the liveliest spirits of the boulevards. Rioul Foche, who delighted Paris with his comic dramatic criticism, committed suicide, and the same fate cut short the famous practical jokes in society of Lemice Terrieux."

The *Globe-Democrat*, of St. Louis, commenting on this, thinks absinthe has something to do with this dire result, but the brains of men break under the excessive strain of

wit as well as wisdom, of worry and wrong, without remission, as well as vice. Respite and rest betimes, constitute one of the laws, at least, of physiological integrity.

Meeting of American Medical Publishers' Association.—The Fourth Annual Meeting of the American Medical Publishers' Association will be held in Philadelphia, on Monday, May 31st, 1897.

Tennessee Centennial and International Exposition, Nashville, Tenn.—The Centennial and International Exposition to celebrate the one hundredth year of statehood by the citizens of Tennessee is now open. A separate and special building for medical and surgical appliances and hygiene has been provided, for everything pertaining to these sciences and arts. This building will be specially attractive to the many medical men who will be in attendance from all parts of the world at some time during the season. A dozen or more prominent medical organizations have signified their intention of meeting in Nashville during the Centennial, as well as many doctors who are in affiliation with other orders, societies and organizations that will meet here.

DEERING J. ROBERTS, Chairman.

The Medical Staff of the Illinois Eastern Hospital for Insane has given a course of instruction to the Training School for Nurses throughout the winter months, with an intermission of two weeks for Christmas holidays.

Charles VI., of France, was afflicted with melancholia and was, in fact, almost incurably insane. To interest and amuse him, the game of cards was introduced at court in 1392.

Illinois Eastern Hospital for Insane.—During the winter, W. O. Krohn, Ph. D., Professor of Psychology, University of Illinois, Champaign, lectured once a week to the Medical Staff of this institution on Physiological Psychology, illustrating his lectures with laboratory experiments.

Physical Rest Versus Gymnastics after Study.—Baum in a recent number of the *Therapeut. Woch.* maintains that mental fatigue is increased by muscular exertion and that such fatigue is best dissipated by both physical and mental rest, and we are in full accord with him in his assault on muscular gymnastics of school children now so much in vogue in our public schools immediately after books

are laid aside, and maintain on principles of cerebro-therapy after mental strain, that the practice is bad hygiene. Brain fatigue is best dissipated by giving the psycho-motor centers, as well as other portions of the cerebral cortex, a proper period of rest immediately after great mental labor.

The Physician as a Citizen.—There is no doubt that medicine requires not only close and constant devotion to study, but that the physician shall be within ready call of those to whom he has undertaken to minister. It is quite evident, therefore, that close and continuous devotion and engrossment in public matters and the undertaking of a large share of the direction of political movements is incompatible with the active practice of the profession. So much being granted, however, it is also quite evident that a physician may, without detriment to his professional studies, and without neglect of his patients, give a portion of his time and thought and action to the public welfare; how much and how applied, circumstances and individual discretion must determine.—*Philadelphia Polyclinic.*

Meeting of the Missouri State Medical Association.—Present prospects are that the meeting of the Missouri State Association this year will prove very satisfactory. The committees have all gotten to work early which is a good indication. The committee on scientific communications is already in receipt of titles in numbers and character sufficient to insure the programme scientifically attractive. The executive committee is enabled to announce the following programme, the details of which only remain to be completed. The association will meet in St. Louis May 18th, 19th and 20th. All the first, the second and the third day until noon will be devoted to the scientific programme. On the evening of the first day the association will as a body attend a session of the Illinois Society in East St. Louis. On the evening of the second day the Illinois Society will attend as a body a session of the Missouri Association, after which there will be a banquet and reception. On the third day both bodies will adjourn and join a steamboat excursion on the river.

Toxic Neuriatry promises to become an interesting and fruitful source of light in neuropathic states and symptomatic expressions of nervous disease. The microbean view of tetanus and some forms of the neuritides, alcoholic polyneuritis and insanity, the paralysis of saturnism, the venereal, rheumatic and gouty neuroses, and the ancient atra-

biliary theory of melancholia, have paved the way for the later theories of autotoxine epilepsy, melancholia, insanity, etc. Dr. Von Geisen, in the *State Hospitals Bulletin* of New York, has taken up this subject and is now investigating the toxic condition of the cerebral cells in insanity, the cytoly-sis or disintegration of the cell. Clytothesis, or the rebuilding of the cell for the cure of neuropathic states, is what, in conditions of auto-toxicity, bacterio-toxicity and extrinsic poisonings of the nerve centers, Dr. Van Giesen proposes in the therapy of insanity and other psycho-neuroses and in the neuropathies in general and in all such conditions so fast as they may be found out. "So say we all of us."

Female Escort for Insane Women.—Since August, 1895, the law of Connecticut has required that in every committal of an insane female beneficiary to the Connecticut Hospital, the probate court "shall, unless such female is to be accompanied by a member of her own family, direct that at least one adult female shall accompany her." This is an excellent legal safe-guard and should be the law of every state.

University of the State of Missouri.—A bill has been introduced into the House and Senate giving the University at Columbia an additional endowment of two millions of dollars bearing interest at five per cent. a year. The general revenue fund is now not large enough to provide for all the public institutions of the state. Hence, at the suggestion of Governor Stone, seconded by Governor Stephens, and endorsed by all the officers of state at Jefferson City, a bill has been introduced providing for the needs of the University by adding to its endowment two millions of dollars. The interest will be paid out of the interest fund, which is amply able to bear the expense, and not out of the general revenue fund, which is not now sufficient for the institutions of the state. We are in favor of the above but not the rate of interest. Long time bonds bearing $2\frac{1}{3}$ to 3% , say fifty year bonds, could be placed and would be as desirable as British consols, for dependent and helpless and untrustworthy beings, etc. This Journal will favor no 5% interest in the future for state indebtedness. The times have changed.

Association of Assistant Physicians of Hospitals for the Insane.—The fourth meeting of this association was held December 3d and 4th, 1896, at the Eastern Michigan Asylum, Pontiac.

The following papers were read: Five Cases of Hys-

terectomy in the Insane, Dr. Isabel M. Davenport; Static Electricity in the Treatment of Nervous and Mental Diseases, Dr. H. R. Niles; Delirium Grave, Drs. A. S. Rowley and Robert Howell; Bone Marrow in Anæmia, Dr. William C. Mann; A Series of Cases of Erysipelas in Insanity, Dr. George Boody; A Classification and Table for Practical Use, Dr. R. M. Phelps; The Examination of the Insane, Dr. William G. Stearns; Pubescent and Adolescent Insanity, Dr. Jason Morse; Paranoia, Dr. J. H. Gahagan; Some Modern Agents in the Treatment of Insanity, Dr. Irwin H. Neff.

International Medical Congress.—Section on Nervous and Mental Diseases.—Presidents, Profs. A. J. Kojewnikow, S. S. Korsakow, W. K. Roth, Moscow. Members of Committee, Prof. J. A. Amfimow, Kharkow; Prof. B. M. Bekhtérew, St. Petersburg; Prof. L. O. Dark-chevitch, Kazan; Prof. P. J. Kovalevsky, rector Varsovie University; J. P. Merjéevsky, academician, St. Petersburg; Prof. O. O. Motchoutkovsky, St. Petersburg; Prof. J. G. Orchansky, Kharkow; Prof. M. N. Popow, Tomsk; Prof. N. M. Popow, Kazan; Prof. Runeberg, Helsingfors; Prof. J. A. Sikorsky, Kiev; Prof. Soelan, Helsingfors; Prof. W. F. Tchige, Iouriew; Prof. A. E. Stcherbak, Varsovie. Secretaries, L. S. Minor, agrégé, Moscou; W. P. Serbsky, agrégé, chief of the clinic of mental diseases, Moscou.

Atropine Versus Quinine Tinnitus.—A writer, M. Aubert, in the *Lyon Médicale*, January ultimo, relates three cases of neuralgia in which he attenuated and even suppressed this disagreeable symptom by adding a small dose of atropine sulphate. From five to seven grains of quinine were given at a dose and to each the author added 0.007 of a grain of atropine sulphate. In one case this prevented and in the two others greatly moderated this disagreeable symptom. The pains were allayed and no atropinism followed.

A favorite formula in sciatica and facial neuralgia of suspected malarial origin with us for the past twenty-five years has been as follows:

℞ Quiniae Bisulph. ʒ ij.
 Ext. Belladonna gr. iij.
 Ext. Nucis Vom gr. jss.
 Liq. Potass. Arsen., ʒ j.
 Ext. Tarax. et Olei
 Ment. Pip., q. s., ft. mass.
 Ft. Cap., No. XXIV.
 Sig.:—Two capsules after each meal.

P. S.—Latterly we have added twelve grains taka-diastase or scale pepsine to the above; sometimes both and a duodenal digestive.

We think susceptible patients tolerate the quinine better perhaps with the atropia, but we have not discovered that the idiosyncrasy against quinine in some persons has been truly overcome or that the tinnitus of the drug is entirely destroyed by the atropine. Hydrobromic acid or sodium bromide act better in this direction.

American Medico-Psychological Association.

—Preliminary programme of the fifty-third annual meeting of the American Medico-Psychological Association, to be held at the hall of the Medical and Chirurgical Faculty, 847 N. Eutaw Street, Baltimore, on May 11, 12, 13 and 14, 1897, at 10 a. m.:—

The President's Address, Theophilus O. Powell, Milledgeville; Annual Address, The Relations of Neurology to Psychiatry, B. Sachs, New York; The Medical and Material Aspects of Industrial Employments for the Insane, G. Alder Blumer, Utica; The Constructive Forces, Ralph L. Parsons, Greenmont; Insanity Following Surgical Operations, Richard Dewey, Chicago; General Questions of Auto-Infection, Charles K. Clarke, Kingston; The Historical Development of the Conception of Auto-Intoxication, August Hoch, Waverly; The role of Auto-Infection in Melancholia and Epilepsy, Charles G. Hill, Baltimore; Clinical Aspects of Auto-Intoxication, Arthur W. Hurd, Buffalo; Another Chapter in the History of the Jurisprudence of Insanity, Daniel Clark, Toronto; Nursing in State Hospitals and Training of Nurses, Peter M. Wise, Albany; The Development of the Higher Brain Centers, Stewart Paton, Baltimore; The Private Hospital for the Insane, Carlos F. MacDonald, Pleasantville; An Unusual Case of Meningitis, C. B. Burr, Flint; Commitment of the Insane, Edward N. Brush, Towson; Sporadic Cretinism in the Negro, Henry J. Berkley, Baltimore; Hospital Records, R. L. Parsons, Greenmont.

Congrès International de Médecine Moscou, 7 (19)—14 (26) Aout 1897. Section des maladies Nerveuses et Mentales.

COMITE D'ORGANISATION:—Les gérants: Prof. A. Kojevnikoff, Prof. S. Korsakoff, Prof. W. Roth (Moscou). Membres: Prof. J. Antimow (Kharkow), Prof. W. Bechterew (St. Pétersbourg), Prof. L. Darkschewitz (Kazan), Prof. P. Kowalewski (Varsovie), Académicien J. Mierzeiewski (St. Pétersbourg), Prof. Motschutkowsky (St. Pétersbourg), Prof. J. Orchanski, (Kharkow), Prof. N. Popow (Kazan), Prof. M. Popow (Tomsk), Prof. Runeberg (Helsingfors), Prof. Selan (Helsingfors), Prof. J. Sikorski (Kiew), Prof.

V. Tschisch (Juriew), Prof. Stecherback (Varsovie). Secrétares: Priv.-Doc. L. Minor (Moscou), Priv.-Doc. W. W. Serbski (Moscou).

PROGRAMME PRELIMINAIRE.—A. Maladies nerveuses. Thèmes de programme.

1. Pathologie de la cellule nerveuse (Anatomie fine et lésions pathologiques). Rapport Prévu.—Prof. V. Gehuchten (Louvain): "L'anatomie fine de la cellule nerveuse." (Communications Annoncées,⁷)—Prof. Ch. Dana (New York): "The Pathology of acute Alcoholism and alcoholic Oedem of the Brain with special Reference to Changes in the Nerve Cells." Prof. Ira van Gieson (New York): "Normal and pathological Cytology of the Ganglion Cells."

2. Pathogénie et anatomie pathologique de la syringomyélie. Rapports Prévus.—Prof. Fr. Schultze (Bonn): "Pathogenese der Syringomyelie." Priv.-Docent Dr. H. Schlesinger (Wien): "Ueber einige Kapitel aus der Pathogenese und der pathologischen Anatomie der Syringomyelie." Priv.-Docent L. Minor (Moskau): "Klinische und anatomische Beobachtungen über traumatische Affectionen des Rückenmarkes, centrale Haematomyelie und centrale Höhlenbildung."

3. Pathogénie et traitement du tabes dorsalis. Rapports Prévus.—Prof. H. Obersteiner (Wien): "Die Pathogenese und das Wesen der Tabes." Prof. Pierret (Lyon): "La Pathogénie du tabes en y comprenant ses localisations cérébrales." Prof. W. Erb (Heidelberg): "Ueber die Therapie der Tabes." Prof. J. Grasset (Montpellier): "Le traitement du tabes." Communications Annoncées.—Dr. Althaus (London): "Pathogenesis and Treatment of Tabes." Prof. M. Benedikt (Wien): "Die Theorie der Tabes dorsalis." Prof. L. Darkschewitsch (Kasan): "Ueber die Natur der Rückenmarksveränderung bei Tabes." Prof. Borgherini (Padoue): "Quelques observations sur l'étiologie et la pathogénie du tabes." Prof. Eulenburg (Berlin): "Ueber die Behandlung der Tabes." Prof. Benedikt (Wien): "Blutige Nervenlehnung bei Tabes." Dr. Frenkel (Heiden): "Behandlung der tabischen Ataxie." Dr. A. Raichline (Paris): "Quelques considérations sur le traitement du tabes dorsalis. Indications et contre-indications." Dr. R. Hirschberg (Paris) 1. "Sur le tabes dorsal juvénile." 2. "Sur une forme réputée rare du tabes dorsal." Outre les trois thèmes de programme énumérés ci-dessus,

⁷) Dans la disposition des communications annoncées nous avons suivi l'ordre chronologique de réception.

la question suivante, qui en fait également partie, sera discutée dans une séance, que tiendront en commun les sections des maladies nerveuses et de chirurgie.

4. Traitement opératoire des maladies du cerveau. Nous indiquons ci-dessous les travaux qui seront présentés par les adhérents de notre section. Rapport Prévu.—Prof. H. Oppenheim (Berlin): "Ueber die durch Fehldiagnosen bedingten Misserfolge der Hirnchirurgie." Communications Annoncées.—Prof. B. Sachs (New York): "Surgical Treatment of Epilepsy." Dr. A. Voisin (Paris): "Un cas d'épilepsie Jacksonienne traité avec succès par la craniectomie." Communications annoncées sur d'autres thèmes.—Prof. Cesare Lombroso (Turin): "Les nouvelles formes des épilepsies." Prof. B. Sachs (New York): "Hereditary spinal Affections." Dr. A. Raichline (Paris): "Communication sur un sujet de neuropathologie clinique." Prof. J. Crocq (Bruxelles): "Un nouveau symptôme des maladies du cerveau." Priv.-Docent A. Korniloff (Moskau): Thema vorbehalten. Dr. Holst (Riga): "Ueber die Anstaltsbehandlung der Neurosen." Dr. Alex Robertson (Glasgow): "Some newer Methods of Treatment in Diseases of the Central Nervous System."

B. Maladies mentales. Thèmes de programme.

1. Obsessions et idées fixes: Rapports Prévus.—Prof. Pitres (Bordeaux) et Dr. Régis (Bordeaux): "La séméiologie des obsessions et idées fixes." Communications Annoncées.—James Shaw, M. D. (Liverpool): "The Pathogenesis and Differentiation of Verbal Obsessions and Pseudohallucinations."

2. Pathogénie de la paralysie générale des aliénés; délimitation de cette maladie des formes morbides voisines. Rapports Prévus.—Prof. Otto Binswanger (Jena): "Die Pathogenese und Abgrenzung der progressiven Paralyse der Irren von verwandten Formen psychischer Erkrankungen." Communications Annoncées.—Dr. J. Althaus (London): "Delimitation of general Paralysis." Prof. Homén (Helsingfors): "Nouvelles contributions sur une singulière maladie de famille sous forme de démence progressive." Priv.-Docent W. Muratow (Moskau): "Zur Pathogenese der Herderscheinungen bei der allgemeinen Paralyse der Irren."

3. L'hypnotisme et la suggestion dans leurs rapports avec les maladies mentales et la médecine légale. Rapports Prévus.—Prof. Bernheim (Nancy): "L'hypnotisme et la suggestion dans leurs rapports avec la médecine légale et les maladies mentales." Communications annoncées.—Priv.-Docent A. Tokarsky (Moscou): "De l'application de l'hyp-

notisme et de la suggestion au traitement des maladies mentales." Dr. Alex. Robertson (Glasgow): "Hypnotism and Suggestion in their Reference to mental Diseases." Dr. Gorodichze (Paris): "La psychothérapie dans les différentes variétés du délire émotif." Communications annoncées sur d'autres thèmes.—Prof. Jolly (Berlin): Thema vorbehalten. Prof. Cesare Lombroso (Turin): "Chaque dégénération a-t-elle un type?" Dr. Morel (Gand): Thème réserve. Prof. Fuerstner (Strassburg): Thema vorbehalten. Prof. Xavier Francotte (Liège): "Le délire généralisé (Confusion mentale, Verwirrtheit)." Dr. G. E. Shuttleworth (Richmond, England): "Hereditary neuroses in Children." Dr. E. Christian (St. Maurice, Seine): "Sur l'hébétéphrénie." Prof. Meschede (Kœnigsberg in Pr.): "Ueber Geistesstörung bei Lepra."

En outre nous ont annoncé leur participation aux discussions sur différents thèmes du programme M-rs les Professeurs: E. V. Leyden (Berlin), S. Henschen (Upsala), G. Ballet (Paris), Dr. A. Voisin (Paris).

REVIEWS, BOOK NOTICES, ETC.

THE LEADING ARTICLE in the April *Monist* is on "Hegel To-Day" by Prof. Rudolf Eucken, the Dean of the old University of Jena, and portrays in vivid, intelligible style the rise, heyday, and decline of Hegel's system, together with the impress which it has left upon thought for all time, and especially the powerful fascination which it exerts to-day upon English and American minds.

In the second article on "The Genesis of Social Interests," the Princeton psychologist, Prof. J. Mark Baldwin, analyses the relations which the individual holds to society and society to the individual, showing how the individual absorbs and incorporates into his personality his environment, and throwing additional light upon long established facts of the psychology of the ego.

Suggestive and important, too, is the article on "Some Points in Intracranial Physics" by Dr. James Cattie, a prominent physician of Edinburgh, Scotland. Dr. Cattie examines the geography, or rather the physiography, of the skull, and seeks to discover what influence its architectural structure and the consequent forced circulation of the blood may have upon mental action.

The fourth article on "The Conflict of Races, Classes, and Societies" is by the eminent Italian sociologist Professor G. Fiamingo of Rome, and will be found to be of the utmost interest to all classes of readers. Professor Fiamingo goes to the bottom of many grave social questions which are now crying for solution, and he handles his subject in a masterly, yet popular manner.

In his essay on "The Mythology of Buddhism," the editor, Dr. Paul Carus, treats of the symbolism and parables by which the philosophy of Buddhism was brought home to the popular mind of Asia. It is an interesting study of comparative religion, particularly of demonology, and is illustrated with many cuts of Buddhist saints and devils. There is also a section on Buddhist art with corresponding illustrations, showing how the world-view of the Buddhists was represented in such pictorial designs as the wheels of life. Unrecognized points of contact of Buddhist demonology with Chaldean thought are touched upon, and the problems of evil as a factor useful in the working out of good is considered.

Finally, we have a discussion of "Mathematical Form" by Mr. A. B. Kempe, Fellow of the Royal Society and Ex-President of the London Mathe-

matical Society. In the *Literary Correspondence* and in the *Book Reviews* the main philosophical and scientific literature of France, England, Germany, and Italy, is analysed, affording a complete survey of contemporaneous thought in these departments. Single copies, 50 cents; yearly, \$2.00. The Open Court Publishing Company, Chicago.

La Nouvelle Iconographie de la Salpêtrière entre dans sa dixième année d'existence. Elle vient en même temps de changer d'éditeur.

Nous venons de recevoir le premier numéro de la dixième année et l'examen de ce fascicule nous prouve que chez M. M. Masson et Cie, la partie matérielle de cette intéressante publication ne peut encore que gagner en perfection. Le No 1 ne comprend en effet pas moins de 18 figures dans le texte et de 9 planches hors texte dont 1 en couleurs, 6 en phototypie et 2 en photogravure.

Parmi les articles contenus dans ce No nous relevons les suivants; Un cas d'hémisection traumatique de la moelle, par le Professeur Raymond; Les rapports de la station hanchée avec la scoliose primitive des adolescents, par le Dr. Paul Richer; une étude sur l'Amélie, par Henry Meunier; un cas d'hémimélie chez un fils de syphilitique, par G. Gasne; applications médicales, sur la méthode de Rontgen par A. Londe et Henri Meige comprenant: la description d'un nouvel interrupteur à mercure pour bobines d'induction, et une étude sur les extrémités d'un sex-digitaire avec 5 radiographies.

Enfin une large part a été faite à la partie artistique. M. Henry Meige continue sa série, d'études sur les peintres de la médecine par un mémoire sur les pédicures du XVII^e siècle d'après les peintres des Ecoles flammande et hollandaise. Cette étude est accompagnée de 3 planches reproduisant des tableaux de David Teniers et d'Andrien Brouwer.

La Nouvelle Iconographie de la Salpêtrière a bénéficié de la glorieuse renommée de son illustre fondateur le professeur Charcot. Sous sa direction et grâce à la collaboration des représentants les plus autorisés de la science française et étrangère son succès ne peut que s'affirmer dans l'avenir, car elle ne s'adresse pas seulement aux médecins et chirurgiens, mais encore aux artistes, aux historiens, aux érudits et aux critiques, en un mot à tous ceux qu'intéressent les manifestations de la science et de l'art sous toutes leurs formes.

MANUAL OF STATIC ELECTRICITY IN X-RAY AND THERAPEUTIC USES.
By S. H. Monell, M. D., Founder and Chief Instructor of the Brooklyn Post-Graduate School of Clinical Electro-Therapeutics and Roentgen Photography; Fellow of the New York Academy of Medicine. 614 pages, octavo, cloth, gilt. Price, \$5 net; postage, 35 cents. Now ready for delivery. William Beverley Harison, Publisher, 3 and 5 W. 18th St., New York.

This treatise is designed to convey practical information to the physician or surgeon employing static electricity in either X-ray or therapeutic uses, and no references to obsolete apparatus and early discoveries are inserted.

As a practical clinician, writer and teacher, the author of this book tells

what to do and how to do it in both X-ray work and the treatment of patients.

This manual practically covers the medical uses of the Holtz apparatus, and is accordingly a necessity to every physician or surgeon who seeks information on the subject.

Five chapters are devoted to Crookes tubes, X-ray operative methods and X-ray photography. These chapters are original and contain complete practical instruction, much of which is not in print elsewhere.

In the therapeutic chapters the clinical indications for different methods of treatment are set forth with precision and clearness.

Certain of the chapters possess unique value in connection with static electro-therapeutics. The chapter on Pain discloses the exactness of known indications for special methods of treatment. The chapter on Morbid Mental States is instructive and valuable. Rheumatoid Arthritis receives full consideration. The chapter on Writer's Cramp illustrates the author's originality of method in the study and treatment of this disease.

The medical library will scarcely be complete without this book.

CLOUSTON ON MENTAL DISEASES. New Edition. CLINICAL LECTURES ON MENTAL DISEASES. By Thomas S. Clouston M.D., F.R.C.P.E., Lecturer on Mental Diseases in the University of Edinburgh. Fourth edition, thoroughly revised. Octavo, 736 pages, 15 full page plates. Cloth \$4.75. With Folsom's Laws of the United States on the Custody of the Insane (\$1.50,) \$5.50 for the two works.

The wide dissemination of Mental Diseases, and the greatly increased difficulty of treating them successfully in advanced stages, render it advisable for every practitioner to inform himself concerning their first manifestations and appropriate measures for their cure or control. The recognition of these facts is perhaps the cause of the demand for four editions of Dr. Clouston's authoritative work. He has skillfully chosen the form of lectures to secure the facility which a narrative style affords in the vivid picturing of this especial class of diseases, but each lecture is arranged on a systematic plan, opening with an exceedingly instructive resume of the special subject and following with the detailed description of the clinical picture, the characteristics, varieties, treatment and prognosis. Typical illustrative cases are aptly introduced. This edition is enriched with fifteen instructive full page plates. In connection with Folsom's "Laws of the United States on Custody of the Insane," prepared to accompany it, Clouston's "Mental Diseases" will furnish the American practitioner all needed assistance in the care of his curable cases and the disposal of the others.

MERRELL'S DIGEST OF MATERIA MEDICA AND PHARMACY is a very concise, practical and valuable work for a ready reference treatise on the subject, for physicians, druggists and students. It gives full prominence, especially to those indigenous nervines and other agencies, extensively employed and in some instances first brought into practical bedside use by the school of medicine in which the author began practice, the Eclectic. The author, Dr. Albert Merrell, was professor of Materia Medica, Pharmacy

and Toxicology in the American Medical College of St. Louis and member of the State Board of Health of Missouri at the time the book was first published in 1883. It is a good ready reference book for those for whom it was designed. P. Blakiston, Son & Co. are the publishers.

DISEASES OF THE EAR, NOSE AND THROAT AND THEIR ACCESSORY CAVITIES. A condensed Text-book. By Seth Scott Bishop, M. D., LL.D., Professor in the Chicago Post-Graduate Medical School and Hospital; Surgeon to the Illinois Charitable Eye and Ear Infirmary, etc. Illustrated with 100 Colored Lithographs and 168 additional illustrations. One volume, royal octavo, pages xvi—496. Extra Cloth, \$4.00, net; Sheep or Half-Russia, \$5.00, net. The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty Second Street, New York; 9 Lakeside Building, Chicago.

A good book by a good writer.

CLINICAL LESSONS ON NERVOUS DISEASES. By Dr. S. Weir Mitchell. Lea Brothers & Co. send us this entertaining and instructive brochure. The well-known name of its distinguished author and the ability of his clinical collaborators. Drs. Taylor, Burr, Hinsdale, J. K. Mitchell, Rhein, Pearlcel Eshner and Tally, tully commend it to the student of neurological phenomena without further comment.

INEBRILITY—ITS SOURCE, PREVENTION AND CURE. By Charles Follen Palmer, published by the Fleming H. Revill Company, 1897, New York, Chicago, and Toronto.

Two Cases Bearing Upon the Diagnosis Between Ruptured Tubal Pregnancy and Ruptured Pus Tube. By M. Rosenwasser, A. M., M. D., Professor of Diseases of Women in the Cleveland College of Physicians and Surgeons; Fellow of the American Association of Obstetricians and Gynaecologists, etc., Cleveland, Ohio.

Physical and Natural Therapeutics. By Georges Hayem, M. D., Professor of Clinical Medicine in the Faculty of Medicine of Paris. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Lea Brothers & Co., Philadelphia, Publishers.

The Voice of the People *versus* The State Board of Health of Missouri. This document is well worth the considerate attention of the profession, the public, the Executive and the people of the state. It is from the pen of an unknown layman. The subject deserves even more careful treatment.

Report of a Case of Gastrostomy, Read Before the Kentucky State Medical Society, 1896. By Martin F. Coomes, A. M., M. D. Professor of Physiology, and Clinical Lecturer on Ophthalmology and Laryngology in the Kentucky School of Medicine, Louisville, Ky.

From Demoniacal Possession to Insanity. Review and Abstract of the Above Chapter from Andrew D. White's Warfare of Science with Theology,

By Warren L. Babcock, M. D., Second Assistant Physician, St. Lawrence State Hospital, Ogdensburg N. Y.

Diseases of the Rectum as a Cause of Auto-Infection, with Report of Cases. By J. R. Pennington, M. D., Professor of Diseases of the Rectum and the Principles of Gynecology in the Jenner Medical College, etc., Chicago.

The Professional and Technical Schools, Especially those of Medicine, in their Relation to the College Course. By J. T. Eskridge, M.D., Neurologist to Arapahoe County and St. Luke's Hospitals, Denver, Colo.

Catching Cold—Its Cause and Prevention. By Fayette C. Ewing, M. D., Late Senior Clinical Assistant, Central (London) Throat, Nose and Ear Hospital, and at the London Throat Hospital, etc., St. Louis.

Surgical Clinic at St. Mary's Hospital, Detroit, September 23rd, 1896. By H. O. Walker, M. D., Professor of Rectal Surgery, Genito-Urinary Diseases, and Clinical Surgery, Detroit College of Medicine.

D'un Faisceau Spécial de la Zone Latérale de la Moelle Epinière. Par le Dr. Alexandre Bruce, Médecin assistant de l'Hopital Royal. Conférencier de pathologie au Surgeon's Hall d'Edimbourg (Ecosse).

Mouth-Breathing Caused by Adenoids and Its Relief. By Hanau W. Loeb, A.M., M.D., Professor of Diseases of the Nose and Throat in the Marion Sims College of Medicine, etc., etc., St. Louis.

The Palliative Treatment of Hernia. By Jacob Geiger, M. D., Professor of Principles and Practice and Clinical Surgery in the Ensworth Medical College and Hospital, St. Joseph, Mo., etc.

Detachment of the Retina; Sarcoma of the Choroid; Sympathetic Phenomena; Enucleation. By William B. Meany, M. D., Member of the American Medical Association, etc., St. Louis.

Hysteria in a Man; Tumor of the Brain; Locomotor Ataxia and Dementia Paralytica. By Hugh T. Patrick, M. D., Professor of Neurology in the Chicago Polyclinic, etc., Chicago.

The Relation of Visceral Disorders to the Delusions of the Insane. By W. P. Manton, M. D., Gynecologist to Harper Hospital and the Eastern Michigan Asylum for the Insane.

De l'action du Streptocoque et de ses Toxines sur les Nerfs, les Ganglions Spinaux et la Moelle Epiniere, par M. le professeur E.-A. Homen, d'Helsingfors (Finlande).

Hypnotism and its Application to Practical Medicine. By Otto George Wetherstrand, M. D., translated by Henrick G. Petersen, M. D. Published by Putnam's Sons.

The Ideal Medical Society. By Marcus Rosenwasser, M. D., Professor of Diseases of Women in the Cleveland College of Physicians and Surgeons, Cleveland, O.

A Few Paragraphs on Affections of the Lachrymal Apparatus. By William B. Meany, M. D., Member of the American Medical Association, etc., St. Louis.

Resection of Arteries and Veins Injured in Continuity—End-to-End Suture; Experimental and Clinical Research. By J. B. Murphy, M. D., Chicago.

A Contribution to the Clinical History of Non-Suppurative Acute (Haemorrhagic) Encephalitis. By James J. Putnam, M. D., Boston, Mass.

Bubonic Plague—Malignant Polyadenitis. By Walter Wyman, A. M., M. D., Surgeon-General, U. S. Marine-Hospital Service, Washington, D. C.

Simulation of Nervous Disorders Following Accidents. By Pearce Bailey, M.D., Consulting Neurologist to St. Luke's Hospital, etc., New York.

Results of (Chemical) Electrolysis Versus Divulsion or Cutting in the Treatment of Urethral Strictures. By Robert Newman, M. D., New York.

The Pathology of the Blood in the Insane. By Wm. H. Harrison, A. M., M. D., Ph. D., Pathologist of the State Lunatic Hospital, Harrisburg, Pa.

Intrabronchial Medication. By Joseph Muir, M. D., Physician to the Lung Department of the New York Throat and Nose Hospital, New York.

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Mental Automatism in Epilepsy: A Psychological Study. By L. Pierce Clark, M. D., First Assistant Physician at Craig Colony, Sonyea, N. Y.

Has the Physician Ever the Right to Terminate Life? By Clark Bell, Esq., LL. D., President Medico-Legal Congress, New York City.

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Modern Method of Treatment of Diseases of the Intestines. By Fenton B. Turck, M.D., Chicago.

The Legal Aspect of the Maybrick Case. By Clark Bell, Esq., of the New York Bar.

How Long is Syphilis Contagious? By C. Travis Drennen, M.D., Hot Springs, Ark.

Our Need of Philosophy: An Appeal to the American People. By Dr. Paul Carus.

Anti-Diphtheritic and Anti-Streptococcic Serums. By C. C. Fite, M. D., New York.

The Practical Application of Trusses. By C. H. Guibor, M. D., Topeka, Kansas.

State Suppression of Inebriety and Cure of Inebriates. By Dr. Orpheus Everts.

On the Evolution of Hypnotic Theory. By Dr. J. Milne Bramwell.

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ORIGINAL CONTRIBUTIONS.

NEUROLOGICAL PROGRESS IN
AMERICA.*

By C. H. HUGHES, M. D., St. Louis.

AMERICA has contributed much to the creation of modern Neurology, especially to Neuriatry or Clinical Neurology. By the term Neurology I include normal neurology, and abnormal neurology, which I term Neuriatry, and Psychology and its opposite morbid aspects, psychiatry. In this great historic city one of its most honored names in medical and political history, Dr. Benjamin Rush, was the pioneer psychiatrist and neuriatrist[†] (if you will permit the coinage of this word) of the century. The consideration of mental aberration received much attention at his hands. It was here that insanity first had a hospital set apart to its victims, and inebriety was treated as a disease under the name of Oinomania. This great physician and statesman made a study of Alcoholism, its causes and consequences, and boldly

* Read before the Section on Neurology and Medical Jurisprudence of the American Medical Association, at Philadelphia, June 1st, 1897.

† I certainly think the time has come for the invention and use of this term. A term I have employed for many years in my lectures, explaining its derivation and necessity.

proclaimed it the drink disease in advance of all the world, just as Ephriam McDowell, in Kentucky, had boldly cut into the abdominal cavity and made the first successful laparotomies, thus opening the way to the greatest of the present life-saving triumphs of modern surgery. So Rush opened the way here as he did for that great declaration of principles which made this a free, independent and invincible nation.

No record of American medical progress, no tribute to American medical glory is complete without Pennsylvania, and no literary monument commemorative of the profession's grandeur and honor could stand whose pedestal is not placed in this city of medical greatness and brotherly love. He not only took a seat in the Continental Congress and made a preliminary draft of and signed the final Declaration of Independence, but he laid the foundation, with his eminent colleagues, broad and deep for the first, and still living and vigorous, American medical college. But he did more in Neuroiatry than I have mentioned. He recognized the neuropathic diathesis which he called the "phrenitic predisposition, a union of diffusive morbid irritability involving the nerves and that part of the brain which is the seat of the mind," and he notes the disposition and capacity of certain lunatics to simulate sanity for a purpose. He also notes how the incipient delusions of the insane are mistaken for the cause and relates a case of delusional mental infidelity in a woman; "*of great medico-legal significance*" (*op. cit. p. 44*). He recognized and named a phase of affective or moral insanity before the term had been invented in what he called the "lying disease."

Rush's definition of illusion, "a waking dream," is the

*Though not germane it is a source of professional pride to note the historic fact as a "member of the provisional conference of Pennsylvania and chairman of the committee to which was referred the great question whether it had become expedient for congress to declare independence," he made a "report which was adopted and sent to the congress the same day." This was "a most animating document, most probably written by Rush, as he was chairman of the committee and ever ready with his pen." The whole committee consisted of himself and Col. James Smith, and included "all that has been so much praised in the Declaration" (attributed to Thomas Jefferson,) "of which it might appear to have been the protocol" (Stone's Eminent American Physicians and Surgeons, page 437). Rush also went into the Continental Congress, knowing he was to vote for independence, for he was elected to fill a vacancy created by the resignation of a member who declined to remain and vote for separation.

briefest on record and his amplification of it, as "a false perception, in the waking state, from a morbid affection of the brain," is perhaps the best on record. His presentations of the morbid aspects of love, grief, joy, fear, anger, reverie, the moral faculties, and, in fact, of all the passions and of the morbid state of the sexual appetite, are unique and advanced for his day; described in 1793 a sexual pervert who answered the doctor's question as to desire and excess thus: "*Dixit per annos tres, quinque vices, se coitum fecisse in horis viginti quatuor, et semper semine injecto,*" antedating the records of Arnold, Krafft-Ebing and others on this subject.*

He was familiar with sexual tabes dorsalis, hypochondriasis, etc., and from 1804 to 1807 records four cases of madness due to onanism. He took the psycho-somatic view of insanity, such as the best alienists hold to-day, saying that, "did cases of madness reside exclusively in the mind, a sound state of the brain ought to occur after nearly every death from that disease," whereas he knew of "but two instances upon record of the brain being found free from morbid appearances in persons who have died of madness."

Here is sound modern psycho-pathology and a correct psycho-somatic conception of the nature and definition of insanity such as we hold to-day. He denied that insanity was "an ideal disease" and asserted that "epilepsy was a bodily affection."

He had a correct conception of Aphasia as a brain trouble though he neither knew its precise seat or its name as we call it to-day. Although he believed too much in venesection, as we believe too little, his therapeutics for acute violent mania, viz., venesection, solitude, seclusion and rest, acts of justice and a strict regard for truth, "everything necessary to their comfort and every promise made to them faithfully performed," is good *fin de siècle* psycho-therapy, except that we have therapeutic substitutes for blood-letting not known to this archiater in psychological medicine. He was the American pioneer in the modern manage-

*Vide p. 348, Diseases of the Mind, Philadelphia, 1812.

ment and treatment of the insane and the world's pioneer in correctly understanding and providing for the inebriate as a brain-damaged man. He was the world's champion of the morbid inebriate's rights and demanded for him, hospitals for treatment like other sick persons. "They are as much objects of public humanity and charity as other people," he said (*vide op cit.*, p. 267). He invented the tranquilizing chair as a more humane substitute for the straight jacket, and his law of kindness with his patients is now the modern rule of action in all hospitals for the insane. Rush's record might be further extended, but enough has been said to name him among the immortals in medicine and philanthropy as he is among statesmen. His name was not born to die whether Congress adorns or neglects to honor Washington with his statue.

Surely the profession of America and especially of this great city should be proud of having had in its ranks this far seeing philanthropic physician.

Before leaving this subject, we here note the fact in parenthesis that Robley Dunglison, also a Philadelphian, in earlier editions of his classic Medical Dictionary, has informed us that such a nervous condition as nervous debility existed and even gave us the name Neurasthenia with the long accent on the i.

The first systematic treatise devoted exclusively to the medical Jurisprudence of Insanity in any language was written by the friend and the benefactor of my youth, Doctor Isaac Ray, of Philadelphia, a work still recognized as high authority in American and foreign courts. Ray's exposition of the clinical features of insanity are clear and concise. His delineations of its affective forms have never been surpassed, while his pleas for justice to the insane have been so masterly and forceful as to markedly modify the practice of American courts in the direction of greater humanity and justice to the mentally maimed than prevailed before his day. He so amplified and emphasized the definition of Andrew Combe, "A prolonged departure without adequate external cause from the natural modes of thought, feeling and action of the individual," as to make it plain and

effective in many celebrated cases of lunacy inquiry before American courts and juries. His clear cut description of morbid mental character as shown in the Parish and Angell will cases, the Hinchman and Bernard Cangly cases, and the trials of Rogers and Winnemore, won him undying forensic fame as a faultless psychiatrist in court, while his analysis of Shakespeare's delineations, his illustration of the insanity of distinguished writers and of King George, the Third; in short, every chapter in his contributions to mental pathology, prove him to have been the peer in power of psychological analysis of the mind diseased, of any alienist of his day. His treatise on mental hygiene for youth further confirms this high opinion, and I had opportunity in his later lifetime to personally observe his clinical ability as a very Corypheus in practical psychiatry as I, as a guest, walked the corridors of Butler Hospital with him while he filled the place of my friend, Dr. Sawyer, of Butler Hospital, then absent in Europe. Both are jewels in psychiatry's crown. Ray was the author of "The Propositions," a set of rules and regulations for the government of hospitals for the insane, which, like his little treatise on the good superintendent and the good attendant, were never equaled before and have not been surpassed since.

Since Ray, Galt, Stearns, Awl and Gray, Godding, Spitzka, Hammond, McLane Hamilton, Fisher, Webber and Folsom have made valuable contributions, also Storer and Mann, and I myself have added a few monographs, but none have surpassed or even equaled the great leader whose mortal remains lie buried in Greenwood, while immortal memories stretching over the world of psychological science, center at his tomb.

Before passing on I stop to note the most philosophic treatise on pseudopia since "Dendy's Philosophy of Mystery" or "Brierre de Boismont's Hallucinations" appeared, and far more scientific, namely, "Visions: A Study of False Sight" (pseudopia), by Edward H. Clarke, M. D., of Boston, written, like the memoirs of General Grant, Napoleon and Thomas H. Benton, while fighting malignancy marching remorselessly and resistlessly to inevitable victory. In this

little book, written in 1877 and dedicated to Dr. Oliver Wendell Holmes, the author's anatomical, physiological and pathological basis of cerebral visions still holds to a very considerable extent with the profession and though not wholly novel at the time, no work up to that date, with which I am familiar, had so fully or so clearly presented the subject.

We go back now to an earlier date to find in neurological annals the distinguished name of Dr. Amariah Brigham, first of Vermont, later and finally of New York, and his two treatises, the one on "Mental Cultivation and Excitement" in 1845, the other on "The Brain and Nerves", show how early and forcibly American attention was drawn to neurology as a proper and imperative study. In an inquiry of two hundred and twenty-seven pages, "Concerning the Diseases and Functions of the Brain, Spinal Cord and Nerves," published by George Adlard, New York, in 1840, by this author, is contained a great many valuable clinical contributions to psychiatry and neurology, which have not been duly credited to him. He was the first Alienist to look upon masturbation in certain cases as the result and not the cause of insanity, contrary to Rush.

The power of expectant attention and self introversion is most intelligently presented by him under the head of "Effects of Mental Attention on Bodily Organs," giving clinical illustrations of dyspepsia, melancholia and fever thus induced and of cures effected. His original view of dyspepsia as a nervous breakdown, I believe to be the most tenable view of the subject in the face of extensive clinical observation, as I have elsewhere noted.* He noted cases of hysteria in the male and elucidated the subject, as well as of chorea, tetanus, hypochondriasis, delirium tremens, etc. His conceptions of the nature and causes of neuralgia were nearly up to the present date. He understood epilepsy about as well as we do to-day and enjoined that "the brain and nervous system of those who die of epilepsy should be examined with great care, and whenever opportunity presents

**Ide* Address on Medicine, American Medical Association, at San Francisco, 1894.

should be compared with those who have never been affected with that disease." He had advanced knowledge respecting the relationship of the vagus nerve and sympathetic systems. Discussing a case of suicide in a case of recurrent delusional insanity, which, on post-mortem examination, showed "upon the nervus vagus, or pneumogastric nerve, of the left side, just before the recurrent is given off, a fixed, hard jaggy body about the size of a kidney bean or small wart composed of calcareous matter," he says: "When we consider that the nervus vagus rises in the medulla oblongata, but is chiefly distributed to the great organs not under our control, and that it communicates with almost the whole of the ganglionic nerves, we may form some idea of the irritation and disturbance produced in the digestive, sanguiferous and sanguific organs by a jagged, calcareous mass implanted, as it were, into one of the most important nerves of the great vital vicera!"* How like a modern neurologist he speaks! But hear him further. Concluding an article on the great sympathetic nerve and diseases and autopsic morbid appearances connected therewith, with regret at the paucity of knowledge of its functions, he says: "We know * * * enough to convince us that they (its functions) are important" and "we can not but lament its condition is so little regarded in disease and in post-mortem examination."† Tilt could talk no better. He discusses focal lesions of the brain and of all of the cranial nerves in a most intelligent manner for his time; gives a case of traumatic aphasia without, of course, having a name for it, and a case of bullet wound of the corpus collosum, from Hennan, with apparent recovery but subsequent death from a bout of drinking with the wounded soldier's comrades. But we cannot follow this interesting American pioneer in neurology further. From what we have thus far taken from this author we are well prepared for such up-to-date expressions as appear in the preface to Brigham on the Brain, notwithstanding they were

*P. 222.

†P. 189.

:Pp. 197.

spoken fifty-seven years ago: "The study of the human brain yields in utility and dignity to no other. It is the study of the most important part of the organism, of that portion for which all the others seem to be created. It is of the highest philosophical interest from the connection of the nervous system with the manifestation of mental phenomena. From the general diffusion of this system and its known uses we should expect it to have great influence in disease and that, as intelligence and mental cultivation, the excitement of the feelings and passions, all of which affect this system, increase, that an increase of nervous diseases and new affections of this system should be observed." And this we find to be true. Apoplexy, palsy, inflammation of the brain, dropsy of the head, insanity, etc., are far more common now than in past ages and are most observed in countries where there is the most mental excitement. We also now witness forms of nervous diseases or affections of the brain and nerves that were nearly unknown half a century since. Enjoining a more accurate knowledge of the anatomy of the brain and its connections, he regrets that "generally diseases of the nervous system are not thus investigated," and complains that "attempts to elucidate the diseases of the spinal marrow by autopsical examination are quite rare and those of the ganglionic system still more so." "Every one knows," he continues, "that certain symptoms indicate disease of the brain, or its membranes, or nerves; but until quite recently, and now almost generally, physicians rest satisfied with merely knowing that disease is located somewhere in the skull, but we should certainly strive to know more than this. * * * Few physicians are satisfied with merely knowing that a patient has some disease within the abdomen or thorax; they seek to know what particular organ is affected and what tissue or portion of the organ is diseased. * * * We have but to pursue the same course as regards diseases of the nervous system," etc. "This field of investigation is indeed very great and will require for a long time many laborers, but ultimately, I apprehend, will richly reward those who cultivate it."

The object of his work, he tells his readers in his preface, "is to call attention of practitioners of medicine to the importance of the nervous system; and to persuade them to embrace every opportunity to study its functions and diseases," which have "vastly increased with the increase of civilization and now constitute a far greater proportion of the diseases of mankind than in past ages and consequently demand far more attention."

Here was the neurological pathfinder who blazed the way through the unknown forests of Neuroiatry for an army with torches and banners whose bright lights have since illumined the world. By these early lights we now see why it is that American Neurology has so many brilliant and sturdy devotees and contributors, like its emblematic statue of Liberty, to enlighten the world. If nervousness is, as our neurologic cousins across the water assert, the American disease, it had American discoverers, and the name of George M. Beard is immortal as a later pathfinder in neurology and neuroiatry. His untimely death was indeed a great loss to the world and that part of the world's work in which we delve.

His treatise supplemental to "Neurasthenia" entitled "American Nervousness," and the "Scientific Basis of Delusions" and other contributions which go to make up the pedestal of his fame, are noted in the bibliography of this paper.

M. Gonzalez Echeverria, whose work on epilepsy with anatomico-pathological notes, original plates and engravings, first appeared in 1870, had about as thorough a clinical knowledge of epilepsia as any writer of his time, and basing his views on clinical observation and the experiments of Kussmaul and Tenner, "that sudden arterial anaemia of the brain, as also Faradization of the cervical sympathetic nerves which determines permanent spasms of the blood-vessels, gives rise to epilepsy", he maintained that epileptic convulsions are likewise induced, as well as "when the blood rapidly assumes a venous character."

Kussmaul and Tenner's experiments, in addition to those of other physiologists, establish the chief share which

the sympathetic has on the determination of spasms and confirm Brown-Sequard and Vander Kolk, and E. maintained that the "seat of epilepsy," the *nodus epilepticus*, "is in the medulla oblongata, with a material modification in every case." The over excited action of the "ganglionic cells of the medulla controlling the vasomotor elements and nutrition," were to him the seat and cause, the invariable and necessary element, of the epileptic paroxysm which he says, "may well occur without muscular spasms." Notwithstanding the exception taken by Vander Kolk to Echeverria, "cerebral anemia is among the very initial phenomena of the epileptic paroxysm."

Though the exclusive medulla oblongata *locus origo epilepticus* is not now tenable and cortex or Jacksonian epilepsy is a proven fact, yet the vaso-motor spasm view of this author has not yet been overthrown and his "Discussion of the Modern Doctrines of Epilepsy" is still critical and classical in the light of further and later discovery.

Next upon the scene appear in paths to American Neurological glory William A Hammond, Weir Mitchell, H. C. Wood, Seguin, E. C. Spitzka, McLane Hamilton, James G. Kiernan, Chas. K. Mills, J. J. Putnam, Isaac Ott, Charles L. Dana, R. W. Amidon, M. Allen Starr, J. K. Eskridge, S. V. Clevenger, B. Sachs, Daniel R. Brower, Harold N. Moyer, Frederick N. Peterson, William Fuller and a host of others whose names may come to us as we proceed and their work appear in the supplement to this paper and in the future historian's pantheon of America's neurologic gods.

Hammond, by his indefatigable zeal and captivating style of writing, gave an impetus to neurological medicine whose wave is still felt in the profession. In 1867, shortly after his retirement from the Surgeon Generalship of the United States Army, he founded and for many years, maintained the *Journal of Psychological Medicine and Medical Jurisprudence*, a high grade quarterly periodical which was promptly accorded, and always held, front rank in the literature of neurology.

In the second volume, the dynamometer and dynamograph are for the first time, in this country at least, illus-

trated and elaborately described by Dr. H. In this volume, Hammond maintains that chlorosis is a disease of the nervous system. In this volume also appears a unique presentation of the subject of Carnomania by Charles F. Taylor; the Microscopical Appearance of the Brain and Spinal Cord, by J. G. Webber, of Boston; Historical Considerations Concerning the Properties of the Roots of the Spinal Nerves, by Austin Flint, Jr.; Roberts Bartholow, then of Cincinnati, and E. C. Seguin have separate articles on Aphasia; T. Edwards Clark handles the subject of Animal Magnetism; Hammond, The State of the Mind During Sleep; Organic Infantile Paralysis, S. Henry Dickson; The Legal Consequences of Insanity, Horatio R. Storer; The Law of Rape, Suicide and Insanity, by T. Edwards Clark; Hammond, Epilepsy Due to Cerebral Anæmia; Nathan Allen, of Lowell, The Law of Human Increase, or Population Based on Physiology and Psychology; Statistics of Opium Poisoning by Alonzo Calkins, of New York; An Improved Pocket Aesthesiometer, by Hammond, besides an interesting chronicle in each number of the world's contributions to Psychiatry, Neuro-physiology and Neurology. This ably conducted and invaluable journal was continued for years.

Hammond's classical works on Diseases of the Nervous System, Insanity, etc., are too familiar to the neurological world to require elaborate portrayal here, even if we had the space and you the time for the record.

Hammond's early impress on American Neurology, as it is upon the literature of Medicine, is indelible. His original description of Athetosis alone is an addition to neurological discovery, as are Weir Mitchell's on Erethromelalgia and the cremaster reflex that have stood the crucial test; and I think I may likewise modestly claim something for the virile reflex and its clinical and medico-legal value, when it shall have been further studied. The difficulty of eliciting it is its chief obstacle to acceptance, but it is an undoubted clinical fact of great value in diagnostic neurology.

Hammond inspired a host of younger men to follow his footsteps. In January, 1854, under his inspiration, the first number of the *Chicago Journal of Nervous and Mental Diseases*

was started by the lamented and talented J. S. Jewell and his able associate, H. M. Bannister; the first article of the first volume being an original lecture on the Pathology of the Vaso-motor Nervous System by Jewell who had produced the same at a lecture in the Chicago Medical College. These lectures were continued through this volume. The articles, selections and annotations were of a high order. This journal was temporarily suspended at the death of its talented and cultured senior editor, but soon revived again and brought out in New York where it continues to appear as a monthly of no mean merit under the editorial management of Dr. Charles Henry Brown and an able corps of well-known collaborators.

In January, 1880, my own journal, the ALIENIST AND NEUROLOGIST, first appeared in St. Louis. It has never missed an issue since its first number and we continue to do business at the old stand and on the same principles of progress; regarding a proper understanding of the nervous system, anatomical, psychiatric and neuriatric, as the chief end of man in medical research and practice.

Following this was McBride's *Review of Insanity and Nervous Diseases*, a meritorious, but now suspended, periodical of the specialty.

Antedating all of these periodicals, we must not omit mention of that staid and valuable old neurological periodical, limited in its scope, however, to the psychiatric side of neurological medicine, the *American Journal of Insanity*, which, under the editorial management of Richard S. Dewey, of Chicago, continues the good work so well begun over a half century ago. In its earlier issues may be found the records of American clinical and forensic psychiatry of most of the old masters, especially of the original thirteen who founded the Association of Superintendents of American Hospitals for the Insane, from which has descended the present American Medico-psychological Association. Their names were: Samuel B. Woodward, of Connecticut, first president of the association and originator of the Hartford Retreat; Samuel White, of the same state, and late Professor of Obstetrics and Surgery in the Berkshire Medical Institute, founder in 1830 of a private institution for the insane on the Hudson, and president of the New York State Medical Society; Isaac Ray; Luther V. Bell, of New Hampshire;

Charles H. Stedman, of Massachusetts, a graduate of Yale and Honorary, of Harvard; John S. Butler, of Hartford; Amariah Brigham; Pliny Eagle; Kirkbride; William M. Awl, of Pennsylvania; Francis T. Stribbling, of Virginia; John M. Galt, of Virginia; Nehemiah Cutter, of New Hampshire—all men who made their mark well for the welfare of the insane and the advancement of American Alienism.

No country ever had so enthusiastic, united and powerful a phalanx to fight for the rights of the insane. Following in the footsteps of Chiarugi, Pinel, York and Tuke, they bravely fought the foes of psychological advance to overwhelming defeat and won a lasting triumph of humanity and science in the treatment of American insane.

Weir Mitchell's work is likewise too familiar to us all to need recalling here. He is known out west as "rest cure Mitchell," and "Fat and Blood" Mitchell, though he himself at the time he was so christened was as lank and lean as hungry Cassius. But his fame rests on more enduring laurels, though these were enough. His views of the cerebellum as a re-enforcing ganglion, first offered in 1869, have lately been re-affirmed by Italian physiologists.* Besides what I have already referred to, his scientific, to say nothing of his literary, work, beginning in 1852 with an investigation into the "Various Forms of Uric Acid Crystals and their Alterations in Highly Acid Urine," and not yet ended, we hope, in his instructive clinical lessons of the present year, is a rich heritage of inestimable value to America's and the world's contributions to Medicine. Hysteria, Mental aberration, Sciatica, Neuralgia, Neuritis, Sleep Jerks, Ataxia, headaches and apparitions, blood pressure, double consciousness, the reflexes and too many other subjects to here enumerate, make up a volume of titles alone for the instruction of the student of neurology, that will perpetuate his name forever.

The Elder John K. Mitchell, father of Weir, is claimed by the latter to have ante-dated Sir William Gull in the description of spinal arthropathies, and the present John K.

* *Vide American Journal of Medical Sciences*, vol. 57, p. 320.

Mitchell, grandson of the senior, is walking wisely in the footsteps of his father. His recent book, "Remote Injuries of Nerves," is a valuable presentation of the subject highly creditable to modern American Neurology. The younger Mitchell has added something worth considering to the classic work of Bowlby to the study of section and injuries of nerves and made valuable contributions on ascending and migratory neuritis and the knowledge of contusions and commotions of nerves, and degeneration and regeneration thereof has been advanced in his recent work, "Remote Consequences of Injuries of Nerves."

No history of Neurasthenia would be complete without record of the writings of my much esteemed friend, Dr. E. H. Van Deusen, of Kalamazoo, Michigan, whose observations on this subject made public in 1867, I called renewed attention to in the initial volume of my journal, the ALIENIST AND NEUROLOGIST, in 1880. Dr. Van Deusen was at the time Medical Superintendent of the Michigan Asylum for the Insane, and under the caption, "Observations of a Form of Nervous Exhaustion (Neurasthenia) Culminating in Insanity," wrote as follows: "Our observations have led us to think that there is a disorder of the nervous system, the essential character of which is well expressed by the term given above, and so uniform in development and progress that it may, with propriety, be regarded as a distinct form of disease."

A reference to the article introducing the subject will show also the essayist's view on that subject.

Neither would the subject of Inebriety be justly treated without reference to the many American contributions to its literature by Mason, Crothers, Wright and others. Dr. T. D. Crothers having contributed since 1875 over a hundred articles on this subject, his chief elucidations being of alcoholic trance states and the medico-legal aspects of inebriety.

Alcohol and drug addiction and their psychical and physical causes have been studied by Crothers, Mason, Matteson and many contributors for the *Journal of Inebriety*, a quarterly periodical which has long held the uncontested field as the only journal of the world devoted exclusively to this

subject. While some of its editor's views have been regarded as too radical, others have undoubtedly been held as advanced. Its clinical records give it just claim to a prominent and permanent sharer in neurological progress. Valuable contributions by Gurdon W. Russell, T. L. Wright, Mason, Crothers and others, may likewise be found in the earliest numbers of my own journal. Wright's Treatise on this subject had its inception in the earlier contributions to the ALIENIST AND NEUROLOGIST as Geo. T. Steven's later book on Eye Strain in Nervous Diseases did. In 1877 Stevens enucleated an eye-ball and cured a case of diabetes and in 1888 another for epileptiform disease with diabetes. Both recovered.* The subject of oculo-neural reflex irritation also first appeared in the (*vide supra*) ALIENIST AND NEUROLOGIST.

The foundation of the American Medico-Psychological Association which was begun by the original thirteen as the Association of American Hospitals for the Insane, with the organization of the American Neurological Society, was the beginning of the diffusion of correct conceptions of mental and nervous diseases and their real clinical and medico-legal significance among the general profession and the people. This work has also been greatly promoted by the New York, Philadelphia and American Medico-legal societies, and sections and societies of Psychical research. The clinical lectures of E. C. Seguin gave the world new light on the spastic paralyses and paraplegia, the excellent work of Spitzka takes rank with that of Golgi and others abroad on the fine anatomy of the brain. While Sepilli was working on cerebral thermometry in Italy, Amidon and Carter Gray were engaged in the same work in New York, and Bert Wilder has overwhelmed us with an almost entire recast of the nomenclature of cerebral anatomy, some of which has been already and much more is destined to be finally, accepted by anatomical cerebrology.*

*See ALIENIST AND NEUROLOGIST, Vol. 1, No. 1.

*The old world and ourselves may make wry faces at having to swallow the new nomenclature, as chemistry did a few decades ago, but I think we shall have to come to Wilder's terms, not all of them, but most of them in time. Wilder schemes than his have been made practicable in science.

B. Sachs, besides his timely translations, has made valuable contributions to our knowledge of the cerebral palsies, cerebral and spinal syphilis, progressive muscular dystrophies, and from my own observation, I am inclined to believe he has described a hitherto undescribed form of disease under the caption, amaurotic family idiocy. I have seen two cases within a recent period, of amaurotic idiocy with epilepsy. Sach's book on the "Nervous Diseases of Children" is a valuable addition to the literature.

The late contributions of Wm. Fuller of Grand Rapids, Michigan, to the objective study of course cerebral anatomy by his unequalled sectional models and book of plates, as well as his contributions to Neuro-surgery, tapping the lateral ventricles and exploration for cerebral abscess, the differentiation between coma of compression and reflex arteriole spasm coma, in 1897, his enunciation of the Anemia theory of convulsions, his arteriole spasm theory of the treatment of cerebral convulsions and his cranial sections for certain forms of idiocy at an earlier date, certainly entitle him to honorable mention in any record of neurological progress. He also maintains that Keloid is of the nature of neuroma and caused by injury or disease of nerve endings, and he drained off the subarachnoid in a case of convulsions, embarrassed respiration and cerebro-spinal fever in 1880.

In 1879 C. H. Hughes read before the Missouri State Medical Association a paper entitled, "A Clinical Inquiry Into the Significance of Absent Patellar Tendon Reflex," showing at that early date that the knee phenomenon was absent in many cases other than Locomotor Ataxia. Subsequent or simultaneous observations of others, including Landon Carter Gray, Bannister, Erb, Westphal and Tschirjeu, have confirmed the fact. The paper maintained that the diagnostic value of the patellar tendon reflex sign was rather in its having been lost in connection with other ataxic symptoms. Dr. Gray was the first to maintain that the nerves involved in the tendon reflex phenomenon belong to a variety not hitherto recognized, viz.: voluntary nerves with involuntary fibres distributed to voluntary muscles, while Gowers at the time objected to characterizing the

phenomenon as periphero-central. But it is quite probable that all voluntary muscle innervation has also latent involuntary nerve fiber tracts and that the involuntary muscles have also latent voluntary fibers, else how are we to explain the phenomena of convulsions and the control of the heart in certain persons, as in the case of Col. Townsend who could at will arrest his, and the control of the ears, scrotum, etc., in others?

Peripheral nerve tissue is readily reproduced. Dr. S. Weir Mitchell, in speaking of the pathological results of neuritis after injury to nerves, long ago noticed an enormous development of connective tissue elements, and Herdman has made some confirmatory observations the present year on nerve repair after injury. But the reproduction of brain substance has been doubted. Al. N. Vitzov* (Bucharest) found in the brain of a monkey a new formation occupying the back part of the skull, after incision of the occipital lobes two years previously, which he proved to be nerve cells and neuroglia exactly comparable in appearance to those present in normal tissue. Theodore Simon, in the earlier editions of Virchow's "*Archives*" reports some cases of what he denominates additional brain growth where new formations were found superincumbent upon the gray matter of the convolutions. In these new growths the gray and white matter were normal in their relations and proportions. But Dr. John B. Gray as early as 1875 (transactions of the New York Academy of Medicine) records two cases of reproduction of brain tissue after brain injury, the length of time in reparation of tissue corresponding with reparation of nerves after injuries. The brain was some twenty days in completing its structure and the convolutional character of the surfaces was distinctly marked.

The case of Phineas P. Gage who had a part of his left brain destroyed by a premature quarry blast in Vermont, and the projection of a tamping iron through his head, Sept. 13th, 1848, subsequently dying on a farm near San Francisco, May 20th, 1861, is the most remarkable contribution

* *American Journal of Medical Science*, Oct. '65.

to the subject of brain tolerance of violence and the possibility of brain repair, on record. The iron that went through his head was a cylindrical bar one and one quarter inches in diameter, three feet seven inches in length, and weighing thirteen and a quarter pounds. The bar tapered to a quarter of an inch and was chisel shaped at one end. It entered the brain in front of the left lower jaw, small end first, and out through the anterior-superior part of the left parietal, destroying the anterior part of the left hemisphere, thence through the corpus callosum anteriorly to the opposite side, extensively involving the margin of the right hemisphere, lacerating the anterior and middle lobes, Falx and the longitudinal sinus. Gage recovered by the sixty-second day so that he walked half a mile and by the seventy-third day, so that he went home thirty miles away, the wound being closed on the one hundred and twentieth day. This man traveled, exhibited himself and the bar, acted as a hostler, drove a stage coach in South America and worked as a farm hand, dying of epileptic convulsions after an irregular life, in which intemperance played a part, but without paralysis or mental impairment, nearly thirteen years after, that is, he had neither paralysis nor mental impairment in the beginning. I was told by Dr. Warren or Dr. Rowditch, at the Boston General Hospital, by whose courtesy I saw the skull and tamping iron in 1868, that Gage was actually intellectually a brighter man after, than before the accident. We all know that the skull of this remarkable case is now in the Warren Anatomical Museum and that the man was never lost sight of by American devotees of psychological and neurological science from the time of his remarkable recovery until head and history were secure in the depositories of science for the good of mankind. It will always be regretted that the brain could not have been examined microscopically. But psychiatry owes to Boston a debt of everlasting gratitude for what it has preserved in its archives of this case under such difficulties, as it likewise is indebted to the labors of C. E. Brown-Sequard for his contributions to the duality of the brain, and the bromide treatment of epilepsy, though an

English surgeon timidly antedated him before he took up his abode in Paris, and America antedates the world on the subject of brain and nerve repair and on the subject of neuritis. Kiernan, in 1882, and myself have contributed something to the literature of the duality of the hemispheres of the brain. I saw at the same time another remarkable case in the Boston General Hospital, from Finley, Ohio, I think. It was a young man who had blown through his head through the parietal region a piece of gas piping about $\frac{3}{4}$ of an inch in diameter.

Since Hammond, Allan McLane Hamilton, Landon Carter Gray, Wood, Dana, Ranney, Starr, Mills, Dercum and others, have given us treatises that compare with the best foreign authors. Dercum has marshalled in his treatise a galaxy of bright particular stars of the neurological firmament, and Chas. K. Mills has in preparation a volume which we predict will be unsurpassed in any language. These, with Fuller's "Architecture of the Brain" already referred to, Shaw's *Diagnosis*, Clevenger and Morton, would seem almost to have amply supplied the demand for neurological literature without the many excellent translations. But the "Twentieth Century Practice," an international encyclopedia of modern medical science by leading authorities of Europe and America, edited by Thomas L. Stedman, M. D., New York City, is before us and here is what an able reviewer* says of one of its volumes to the credit of American Neurology:

"Volume ten is devoted to 'Diseases of the Nervous System.' With the exception of Dr. Féré, of Paris, who furnishes articles on hysteria, epilepsy, and the spasmodic neuroses, the contributors to this volume are all our own countrymen—the international element is less in evidence than in the preceding volume."

"Dr. Joseph Collins, of New York, has a long article of 300 pages on the important subject of diseases of the brain, and another on diseases of the meninges. Dr. B. Sachs, of New York, deals with tumors of the brain, and is sanguine enough to predict even far greater success in the

**Boston Medical and Surgical Journal.*

diagnosis and surgical treatment of intra-cranial neoplasms during the next decade than has been achieved in the recent past. Dr. Charles L. Dana, of New York, writes on neurasthenia; Dr. H. T. Pershing, of Denver, on disorders of speech, and Dr. Sanger Brown, of Chicago, closes this volume of 859 pages with a short article on disorders of sleep."

Treatises like those of Wilks, Ross, Maudsley, Bevan Lewis, Obersteiner, Hirsch, Erb, Westphal, Edinger, Mendel and others, with Charcot, Sepilli and a host of other German, French and Italian confreres, will ever be esteemed in America, but it is now plain that if cut off from them, American neurological medicine would not starve for neurological nutrition in its psychic centers.

But let us proceed. The first medico-legal differentiation between Aphasia and Aphasic Insanity in this or any other country, so far as I can discover, was made by myself in 1879. The first contribution on the "Simulation of Insanity by the Insane" was also written by myself in 1876. In 1880 I wrote on Nitrite of Amyl in differential diagnosis, on reflex cardiac gangliopathy, in 1881 on consciousness in epilepsy, in 1882 on hyoscyamine and something new on the diagnosis of neuratrophia or neurasthenia. I proved the vaso-motor contractile power of cephalic galvanization in 1883; maintained and established the curability of certain hitherto hopeless types of epilepsia and showed that the lesion of haemophilia and malarial hema-turia is in the sympathetic system and have continued to make up to date contributions to which the reader is referred in the appended bibliography. While it is perhaps true that,

"To observations which ourselves do make,
We grow more partial for the observer's sake,"

and that we do not wish our work, real or fancied, for the weal of the world, forgotten, we must not overlook the fact that we have but meagre space here for detail record of any one's work, so I pass over a few dozen of my own contributions to further notice those of your distinguished

conferes in Neurology, noting some of their work in the context and the remaining in the appendix.

Let us make a short trip to Chicago and dwell a few moments with that living neurological and psychological encyclopaedia, James G. Kiernan. Next to Kohlbaum, he has thrown more light on Katatonia than any other writer of any country. His first contribution on this subject appeared in 1877. His next subject was Shakespeare's psychiatric characters, while his psychology and psychiatry of the prominent characters of history have not been exceeded by John C. Bucknill or William W. Ireland. His contributions to the study of psychology and psychiatry of genius and the neurology, as contradistinguished from the neuriatry, of genius, have been numerous and instructive. Insanity in nearly all of its various forms and in many novel features has been described by his fountain pen of neurologic truth. In the appendix are classified eighty-four themes in our line of research bearing his name as author, from the ataxic paranoiac of genius, the trophic disturbances of insanity to the insanity of gout and the insanity of quinine. In 1882 he wrote on the duality of the cerebral hemispheres.

The relation of insanity to crime has been instructively studied by Harold N. Moyer, Kiernan and others in this country; Insanity proceeding from the colon by the former and by the lamented Jewell; the Medical Jurisprudence of Railway Surgery and Shock by Moyer, Clevenger and Outten; the Nervous Sequellæ of Influenza, by Moyer, myself and others; A Rare Form of Occupation Neurosis, by Moyer; also paranoia, nystagmus, acromegaly, infantile chorea, neuritis with knee jerks and nystagmus, exophthalmos with nephritis, etc., etc. [See Appendix].

In an inaugural thesis before the American Neurological Society, entitled "A Study of Nerve Cells and Their Functions," Clevenger appears to have anticipated the later neuron theory.* Fry has made some recent studies on the same subject. Clevenger's contributions being too numerous for detail here will, as already said, be referred to again in the Appendix.

* *Vide Chicago Medical Review*, March 11th, 1881, and *Comparative Physiology and Psychology*, 1885.

Frederick N. Peterson, in 1879, made valuable studies on the posterior cerebral lobes in an inaugural thesis, and has kept up his search for new neurological light steadily ever since. Among his later contributions are; his prize essay on "Morbus Basedowii," the Principles of Craniometry, the study of muscular tremor, cataphoresis, electro-thanesia, the colonization of epileptics, deformities of the hard palate in degenerates, the new phrenology, Katatonia (with Dr. C. H. Langdon), chapters in Starr's Familiar Forms of Nervous Disease, Starr's Children's Diseases, Loomis' and Bigelow's Treatises, and the American Text Book of Diseases of the Nervous System.

The State Hospitals Bulletin, of New York, conducted by Wise, Brown and Reeves, has thrown a flood of new light over the pathward of our progress, Ira Van Gieson having made some startling revelations from the State Pathological Institute, of which he is director, on the relation of the auto-intoxications to neural diseases, which Nelson Teeter has followed up and elaborated on the autotoxic origin of epilepsy. Teeter's clinical studies in cerebral tumors and Courtney's, on pachymeningitis, also grace the first number of the first volume.

While trephining for cerebral pressure by fluid was first suggested abroad by T. Clay Shaw in 1889 and performed by Harrison Cripps in July of that year, it was done in this country in the following March by Wagner, of Utica.

In 1891 Quincke first performed paracentesis spinalis for hydrocephalus. In May, '96, Turner performed this operation for general paralysis, and in this county Dr. Warren L. Babcock, in July of same year; and these bulletins contain a record of his work. Here, too, we find Hutchings following up the discovery of Huchard on Cerebral Meiophragias with valuable researches on this condition of arteriosclerosis associated with certain mental symptoms.

In truth, these bulletins reveal a bewildering scope of work creditable to American clinical psychiatry and neurology, and we cannot name all the works save in the bibliography. Here Somer's case of general paresis in its post mortem showing coincides with those of the West Riding Asylum's

early reports, and Babcock's moral insanity confirms the contentions of our own earlier days.

Syphilitic hypochondriasis was presented in 1888 by Allen McLane Hamilton, and Carter Gray has lately added to the diagnostic signs of melancholia and intracranial syphilis, while Frank C. Hoyt, of St. Joseph, Mo., pathologist to State Lunatic Asylum No. 2, gives us post mortem light on this subject.

Hugh T. Patrick, who is no more of a saint than my friend who dreams over the Hookah, though he hails from the Saintly City of Chicago, maintains that he has knocked out the Bryson symptom in exophthalmic goiter, showing by a study of forty cases that the diminished chest expansion frequently found in Graves' disease is in no sense pathognomonic, but is simply an expression of the general myelasthenia which he maintains is always present in this affection. An experimental and anatomical study of the course and destination of Gowers' tract by this writer, established the fact that Gowers' antero-lateral tract extends as a separate bundle as high as the corpora quadrigemina and then passes in a retrograde direction to the middle lobe of the cerebellum.

The intimate relation between asthenic and bulbar paralysis and polio-myelitis, has been shown by this author in a recent report of a case of so-called poli-encephalitis superior and inferior, with microscopic demonstrations. Dr. Patrick's studies in trunk anaesthesia in locomotor ataxia and syringo-myelia reveals a novelty in symptomatology, and he maintains that "spinal irritation" is psychic and not located in the spine.

Frank G. Lydston and Eugene S. Talbot have made valuable contributions to the study of the stigmata of degeneration especially in criminology, including regicides, me-
briates and aristocratic degenerates. Records of their work is appended. Chicago is a good place in which to study criminology and degeneracy, and these gentlemen are well qualified for the work.

M. Allen Starr's *Atlas of the Nerve Cells*, with the co-operation of Strong and Leaming, though published abroad,

is highly creditable, like Fuller's plates and casts, to American neurological industry, ability and ingenuity. Starr's work on brain surgery has been complimented by translation into the German and French languages. His contribution to the study of tumors of the spinal cord, '95, and diagnosis of cerebral abscess, '97, are valuable additions to cerebrolgy and spinology.

We are indebted to Daniel R. Brower, of Chicago, for a new surface thermometer, and many studies in medico-legal and traumatic insanity, electro-therapy and spinal neurosis; to Brower, Andrews and Hughes for separate clinical studies of hyoscyamine; to Brower, Clevenger, Kiernan and many others, for records of traumatic insanity; to Brown for the case of Mark Gray (concealed insanity) and Pendergast as a paranoiac, and too many other records and monographs for our space.

Progress in the knowledge of the localization of sensations has been made in this country especially through the studies of Dr. Charles L. Dana, and the diagnosis of intracranial hemorrhage and acute softening, vertigo in temporal lobe lesions; apoplexy, the apopleptic pulse, the cause of perforating necrosis of the spinal cord, its continued sclerosis, the pathology of chorea and paralysis agitans, and studies in alcoholism, acromegaly and the pathological anatomy of Tic Douloureux, besides his text book on nervous diseases now going into the fourth edition which has features unexcelled in any book published abroad.

The literature of multiple neuritis, paramyo-clonus multiplex, the neuron conception of the nervous system, chorea, and Raynaud's disease, have been written upon by Fry, of St. Louis. Bauduy has given us a book that ought to be revised; Bremer has added to the literature of microscopical blood states in disease and Shaw's Diagnostic Neurology and contributions to morbus Thomsenii, are valuable additions to the literature of Neurology, and my own work which appears mainly in my journal, the ALIENIST AND NEUROLOGIST, founded in 1880, I offer to your critical consideration. If I have accomplished but little, it is not because my intentions have not been good. In addition to what

has already been cursorily referred to, I claim the introduction of chloral hydrat per rectum in puerperal eclampsia, infantile convulsions and obstetric practice, besides early articles on the dual action and vicarious functions of the cerebral hemispheres and lobes of the brain, aphasia, hyoscyamine in psychiatry, moral and other forms, and the definition, of insanity.

If we take the wings of the morning and fly to the uttermost parts of the earth we shall find the Neurologist there, so rapid has been the progress of neurology within the short time since it began to take rank as a medical specialty, almost within the average life of a generation of men. But we read and go beyond the confines of our own country to be satiated with the richness of neurological contributions. An examination of the psychiatric and neuriatric bibliography here appended would make one feel, after what we have thus far gone over, like "gnawing a file and fleeing unto the mountains of Hepsidam" for rest, "where the lion roareth and the whangdoodle mourneth" for our diversion, but we will stop awhile at the Rockies and here we find Pershing perched on the heights of Denver, Thombs lower down in Pueblo, and Jeremiah T. Eskridge, the lion of the tribe of Judah, who went out to Denver with one lung and developed a voice that has been heard in highest and strongest neurological notes around the world. He has been so active there that the festive bacillus tuberculosis could not find further lodgement on his never resting cerebral anatomy. I have before me a record of 103 contributions to the literature embracing every aspect of neurological inquiry from diagnosis, pathology, physiology and treatment to the neural therapy of climate. His articles on retro-antegrade amnesia, temporary abulic agraphia, symptoms of speech disturbances as aids in cerebral localization, on brain tumors and glioma, and chapters on insanity and feigned diseases, the latter in the American System of Medical Jurisprudence, have attracted much attention. But the full list is close at hand and I refer you to it.

Since American medical literature had its birth here and

since we started our incursion here, it is mete that we return. There are neurological giants in Philadelphia whose measurements we have not yet taken. The contributions of James Hendrie Lloyd embrace Brain Tumors, Syringomyelia, Diseases of Occupations, and the Spinal Cord in Pernicious Anæmia. Friedreich's Ataxia has received intelligent attention in several valuable monographs by Chas. W. Burr, of Philadelphia, and its pathology has been especially elucidated by this author. Prof. Burr has also reported a case of hysteria with ataxia confined to one leg, discussed the frequency of ataxia in negroes, thrown some new light on the causes of hysteria, added a case of tactile amnesia and mind blindness to the literature, elucidated the pseudo-paralysis of childhood, the spinal cord lesions and symptoms of anæmia and conjointly with Weir Mitchell, given us a record of some unusual cases of chorea, possibly involving the spinal cord.

Wharton Sinkler's contributions to neurological medical literature include the Relations of Lead Palsy to Paralysis, to Mechanical Injuries of Nerves, Infantile Paralysis and Paralysis of Children, Adult Spinal Paralysis, Chorea in the Aged, Friedreich's Disease, Painless Facial Spasm, the Toe Reflex, Observations on Migraine, Brain Tumors, Syringomyelia, Lesions of the Thalamus, Athetosis, Tremor, Paralysis Agitans, Poliomyelitis Anterior, etc.

But these are not all the giants of Philadelphia. Though you will find among them, Ajaces, Boanerges and several Corypheuses in neurological medicine, here are some of the blows another giant (of this peaceful city), Charles K. Mills, has struck in opening the way to the high pinnacle on which American neurology stands to-day:

"The Relation of Infectious Processes to Mental Disease," "The Naming Centre," "The Localization of Lesions in the Pons and Pre-oblongata," "Phases of Syphilis of the Brain," "The Diagnosis of Intracranial Tumors," "Aphasia and Disorders of Pantomime," and "Treatment of Diseases of the Brain."

Dr. Mills has nearly completed the first part of a Practical Treatise on the Nervous System and its Diseases, a

volume of about one thousand pages, which will be issued by the J. B. Lippincott Company of Philadelphia, about the first of October of the present year, and every American neurologist will be proud of it. He is the author of too many neurological monographs to be here enumerated; his articles, clinical and pathological, include reports on many cases of brain tumor; numerous clinical lectures and reports on the affections of the nervous system; articles on hypnotism; medico-legal papers; the Toner Lecture on Mental Overwork and Premature Disease among Public and Professional Men, published by the Smithsonian Institution; articles on Hysteria, Hystero-Epilepsy, Catalepsy and Ecstasy, in the *American System of Practical Medicine*; and in the same work, "Tumors of the Brain and its Envelopes" (with Dr. J. Hendrie Lloyd); numerous reports on cases of insanity and papers on cerebral and spinal localization, and "Cerebral Localization in its Practical Relations." Besides these names, those of Spiller and Marineso come to me, but a record of the work must now be deferred to the Appendix.

As I close this report I note that the leading articles in many of the latest issues of the leading journals of the country are on advanced neurological subjects. Lewellys F. Barker, in the *New York Medical Journal*, continues his interesting contributions on the Nervous System and its constituent neurons; Allan Bonar, in the *Record*, gives us new light on many disturbances in locomotor ataxia, and Henry Hun, who has contributed much in years gone by, gives an instructive study of analgesia, thermic anaesthesia and ataxia, from focal softening in the medulla oblongata and cerebellum, due to occlusion of the left inferior posterior cerebellar artery; further enlightening us on the course of the sensory and coordinating tracts in the medulla, and Henry M. Lyman, of Chicago, in the *Journal of the A. M. A.* for May 22nd, elaborates the subject of Nervous Dyspepsia with proofs of the position taken on this subject (though he does not name them as such) by Brigham seventy years ago and referred to in the beginning of this essay.

During the past year there has appeared in my journal

alone advanced neurological articles on the following subjects: "The Anastomoses Between the Spinal Accessory and the Vagus," by Drs. D. Mirto and E. Pusateri; "Some Current Errors Regarding Insanity," by Dr. Arthur E. Mink; "A Case of Chronic Chorea, with Pathological Changes Similar to those of General Paresis," by Dr. E. D. Bondurant; "A Note on the Treatment of Sexual Inversion," by Havelock Ellis; "The Advancement of Psychiatry in America and the Relation of Psychiatry to General Medicine," by Dr. Edward Cowles; "Abuse of the Bromides," by Dr. Harriet C. B. Alexander; "An Ataxic Paranoiac of **Genius**," by Dr. J. G. Kiernan; "Hysterical Analgesia," by Dr. C. C. Hersman; "State Care and State Maintenance for the Dependent Insane in the State of New York," by Dr. Carlos F. MacDonald; "Nervous Shock and Disease of the Nervous System as a Cause of Pernicious Anæmia," by Dr. James B. Herrick; "Differential Diagnosis of Insanity," by Dr. C. B. Burr; "Observations on the Histological Development of the Cerebellar Cortex in Relation to the Faculty of Locomotion," by Dr. Aurelio Lui; "Scrivener's Palsy not Solely Pen Fatigue," by Dr. C. H. Hughes; "Are Americans Degenerates?" by Dr. Jas. G. Kiernan; "Sociology and the Realistic Novel," by Dr. Ingeborg Tautstrom; "The Surface Thermometry of the Head in Diseases of the Brain," by G. W. McCaskey; "Syphilis as an Aetiological Factor in the Production of Locomotor Ataxia," by Dr. C. Travis Drennen; "The Psycho-Neural Factor in Medical Practice," by Dr. C. H. Hughes; "Psychical Hermaphroditism," by Dr. William Lee Howard; "Preputial Reflex Epileptiform Convulsions, with Report of a Case," by Dr. Alex L. Hodgdon; "Intemperance, Consanguine Marriages, and Educational Overpressure, as Factors in the Genesis of Nerve Disease and Degeneration of the Race," by Sir Frederick Bateman, M. D.; "What is Meningitis?" by Dr. W. S. Christopher; "The Case of Sturgeon Young, a Question of Hypnotic Injury and Death," by Clark Bell, Esq.; "Encephalitic and Late Epilepsy," by Dr. J. G. Kiernan; "Psychoses of Old Age," by Harriet C. B. Alexander; "The Auto-Toxic Origin of Epilepsy," by Dr. J.

Nelson Teeter; "Insane Heredity," Dr. H. P. Stearns; "Analgnesia of the Ulnar Nerve in the Insane," by Dr. Arrigo Giannone; "Report of a Case of Brain Syphilis Heroically Treated with Mercury, Followed by a Mercurial Neuritis and Recovery," by Dr. William C. Krauss; "Interaction of Somatic and Psychic Disorder," by Dr. James G. Kiernan; "Imperative Conceptions," Dr. C. H. Hughes; "Defence of Modern Psychiatry," Dr. Wm. Hirsch; "Cyclone Neuroses," Dr. C. H. Hughes; and "The Effects of Extirpation of the Parathyroid Glands," by Prof. G. Vassale and Dr. F. General; while the list for the past ten years is a complete record of neurological progress.

Following our own protest in 1882 against reckless oöphorectomy,*because "the neuropathic diathesis could not be obliterated with the removal of an ovary," and condemning that "gynecological reasoning which discerns through the speculum special and exclusive channels of communication with the brain, not revealed by physiological or anatomical research and never dreamed of in regard to the other sex," as untenable; Geo. J. Preston, of Baltimore, in a monograph just from the press, emphasizes anew this past condemnation of the unduly meddlesome and murderous gynecological surgical attempt "without perceiving it * * to remove by the knife an hysterogenic zone." His book is entitled, "Hysteria and Certain Allied Conditions."

It is thus that American Neurology and Psychiatry moves up to the mountain top. If you don't concede that it is already there, you see we are getting there. The labors of the past three decades, as well as the work of the pioneers, have won for us a place at least beside our worthy brothers abroad in the world's neurological progress. We at least are lending a helping hand, of which we need not be ashamed, in making its history. We are moving up with the world and moving the world up with us.

Addendum. As I do not wish to repeat in this report on Progress it should be read in connection with my address as President of the section on Neurology and Psychiatry of

**Vide* ALIENIST AND NEUROLOGIST, Vol. III, No. 1.

the first Pan American Medical Congress, at Washington, in 1883, to which the reader is referred in the ALIENIST AND NEUROLOGIST and *Journal of the American Medical Association* of that year.

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NOTE.—It is obvious in a paper like the present, that at most a very few distinctive illustrations of each man's work can have place in the context, but work which will live forever in the world's record of neurological progress has been done by each and all, and to these names as many more could be added. We may in a subsequent paper enlarge this subject to limits to include all.

THE LIMITS OF PSYCHOLOGY.

Extract* from the Inaugural Address of the Academic Year
1896-1897.

By PROFESSOR EUGENIO TANZI.

THE current philosophy of pantheism and of spiritualistic monism, the conception of the world as will and representation—the unhappy nucleus of a system not devoid of genial modernity—the animism not yet formulated but already active, of William Wundt, and the seductive theory of unconscious cerebration, prelude to the absurdity of an unconscious *psyche*, have prepared the soil for panpsychism, creating innumerable misconceptions in regard to the significance of intelligence which tends to become lost in the undeterminateness of a metaphysical abstraction. A physiologist, Pflüger, claims there is consciousness in the spinal cord of a decapitated frog. Then the protisti are discovered and to them also is assigned intelligence, certain of their automatic reactions with a semblance of spontaneity being interpreted as voluntary. Science teaches daily in chemistry and physics how very small differences in cause may give rise to great differences in effect, and how, from a simple isomeric dislocation of atoms may arise new properties in the molecule, which is the seat and object of them. The formula of struggle for existence understood as a conscious and active combat of all living things, individuals and species, one against the other, becomes a coefficient to the universalisation of mind, because, applied unreasonably it is made to serve to define the fatal biological relations existing between pluricellular organisms, on the one hand, and

*Translated by Dr. Susanna P. Boyle, Toronto, Canada.

pathogenic micro-organisms on the other, so that, in the white blood corpuscles, under the warrior guise of phagocytes, and in the bacteria as assailants, we are required to see so many intelligent combatants engaged in a voluntary warfare. The metaphor is pernicious; it entered into scientific circulation as a word, and has remained as an idea, and we find the picturesque simile of a war, chosen wisely by Charles Darwin, assuming in the impatient fancy of his followers, the exact value of a universal formula.

And in the same way panpsychism has been turned from the trenches of theoretic philosophy into a domain of its own, under the guise of popular science. We find a physiologist, Hering, attributing memory to muscles; and botanists, scouting the healthful examples of Charles and Francis Darwin, interpreting as acts of sensibility, choice and will, certain reactions of vegetable organisms, which certainly do not show the faintest spark of consciousness. And the will, which can only in the abstract be separated from sensibility and intelligence, becomes a synonym of energy, so that, even were we deprived of consciousness of the act, and prevision of its aim, we should still have its proper determining characteristics, and, it may be, even more than these.

The progress in the study of the protisti, making known certain peculiarities of their lives due to the action of natural forces such as gravity, sunlight, electricity, chemical affinity and contact with solid bodies, while they prove always more forcibly the universal empire of mechanics, on the other hand, by the very abundance of the facts collected, and the great multiplicity of their mechanical causes, permit under the impression of surprise and almost admiration, of seeing in certain reactive movements, the manifestation of intelligent will. The railway train which passes swiftly along impelled by an internal force, and the comet whose appearance was foreseen and is verified, represent the one a triumph, the other a confirmation of mechanical laws, though to the savage who does not understand them, they nourish the superstitious mysticism of which they are a direct confutation. On this misapprehension was founded

the old idol of vitalism which with the convenient *vital force*, was successful in solving in an instant all the problems of physiology, either pretending that they were resolved mystically, or proclaiming them irresolvable mechanically; in both cases scientific research, being either superfluous or insufficient, lost a great deal of its value.

Then the habits of the arthropoda studied with a new vigor from the Darwinian standpoint, succeeded if not in inventing more, at least in exaggerating the intelligence of these animals, and in strengthening illusions concerning that of the lower animals. Also historical studies, being modelled on the theory of evolution, and abusing the analogical method, tended to regard society as an organism endowed with a mind of its own, to which were assigned laws and organs. The arts have not escaped the contagion and in pictures and literature we find symbolism flourishing.

In order to destroy modern panpsychism from which have been evolved these philosophic theories, these scientific chimeras, these literary omens—to clear the air of this cloud which obscures truth, we must decide from a scientific point of view exactly *where intelligence begins and where it ends*; that is to say in what consist its required conditions and what are its limits in the living world and in the universe.

All psychic phenomena are reduced to sensations or to conscious *distinctions*. Mill truly says that there is in psychology only one fact, sensation; only one law, association. This principle holds good not only for concepts but also for the emotions, which are facts built from the same materials and naturally it is applicable also to the will, inasmuch as this is the prevision of a concept, as desire is the forerunner of the emotions. Without these elements already very complete we can imagine only the semblance of consciousness. A sensation must exist in the consciousness; otherwise it might be presented as light, sound, mechanical force, a chemical phenomenon, a biological fact, or as chemical or physical energy itself, this being made possible by the reciprocal convertibility of energy, but it would still not be a sensation. Unconscious sensations, unconscious psychic

activity, says Ardigo, are contradictions in terms which lead to the strangest errors.

Now, since sensation exists in the consciousness it is necessary that it be able to individualize among a crowd of other sensations and especially among similar sensations, or in other words, that it assumes the form of a distinction. This takes place as the result of a confronting event in two ways, either among different sensations which awaken the consciousness simultaneously, or from different sensations modifying the consciousness successively. In the first case the consciousness is multiplied into so many simultaneous sensations, which are more or less clear, and we have a mosaic of partial consciousnesses; in the second case it is transferred *en masse* from the sensation which loses sight of it (but the memory remains) to a successive sensation and we have a magic-lantern slide of general consciousness. In the latter, as in the former, the consciousness differentiates, assumes a special state, *i.e.*, *distinguishes*—and it distinguishes objects only inasmuch as it feels in different ways. This, its special and necessary faculty, the consciousness would have no means of exercising were it not that it possesses in itself some elements of variety. The external world is the perennial source of this variety, either because it projects its different energies on the body, which receives them in all its parts, or, because in the vicinity of the body, it acts incessantly and successively. In fact, though it seems almost superfluous, we may say that the mind is sheltered always by a body which has an extension into space and a duration in time.

The necessity that the elementary terminus of the psychic fact shall be *distinction*, springs from the biological office which belongs to the functions in general of an organism, the utility of the individual or the species, and in the particular case of psychic processes, consists in the verification of a systematic correspondence between internal phantasms and external realities. Thus there arrive at the consciousness, the necessary conditions for those practical and supreme manifestations of intelligence, the voluntary actions. This systematic correspondence between what goes on out-

side of us, and that which takes place within us, is not merely a particular instance of adaptation, it is the great animating and perfecting law of life. It is a passive adaptation inasmuch as intelligence is representation and feeling; and active in that it is manifested by the will which is capable of modifying to our advantage our environment, but which, in so far as it demands consciousness of the act and prevision of determinate and desired consequences springs passively and necessarily from an accumulation of distinctions, sometimes indeed from a conflict of them.

If the correspondence between the subjective and objective be lacking, all the long series of visions and actions which constitute, between birth and death, the cycle of a psychic life, would be reduced to a dream devoid of analogy with the real world; man himself, a pilgrim without a destination would traverse reality as if asleep, carrying on his back a burden of pure illusions. If, however, the correspondence were there, but without the characteristics of regularity or constancy, the psychic processes would constitute so fallacious a guide, so poor an armor for life's battle, that it would be only an additional risk, a sign of weakness, a monstrous function, the apparition of which in philogenesis and ontogenesis would have no biological reason and would conduce to a fatal inaptitude for life. A slight aberration from this correspondence, insanity, leads to separation from society and extinction of family.

Thanks to this superior adaptation we are able to recognize things for what they are and at their true value, to classify similar objects and separate dissimilar, arranging them in a logical sequence which is neither a copy nor a literal translation of the real order, but takes into consideration the intercurrent objective relations between external phenomena, in order to register them in a certain way, and according to certain laws, as the subjects are arranged in a table of contents. In fact, in every intelligent act there intervenes, besides the sum of the actual impressions, also a certain number of simultaneous and successive impressions, of internal origin, which are the products of previous experiences, and which, awakened by the arrival of an

actual impression, join with it to form an act of perception or of recognition. Besides those qualities which we really see in an object, there are those which we do not perceive but divine by virtue of memory and experience. In other words the intelligence is not a mere mirror, neither is it an automatic safe. External occurrences are not transmitted directly to the consciousness, but are first subjected to a process of elaboration, i. e., to an analysis and a synthesis.

In what does the analytic examination consist? The organism collects from objective phenomena some minutiae which objectively are *differences*, and subjectively become *distinctions*. Thus from numerous distinctions we can recognize (in the case of a cap for instance) the existence of a multitude of differences, or of a new object. Position, volume, consistency, weight, form and color would not be sufficient to make us recognize in that object a human head-covering were it not that at the sight of it pale memory opportunely recalls the numerous and varied caps we have seen during our life, and that it responds promptly, constantly and systematically to the call of each newcomer and this fusion of similar mnemonic images with actual impressions, determines the synthetic reconstruction which from a dark-colored, round, light, felt object, large as a head, and attached to a peg, permits us to recognize a cap, because it is presented to our consciousness not only with the few attributes immediately perceived by our senses, but also with many others already known, and more characteristic, as they connect and complete it by the generic attributes which they instantly furnish, called forth from memory's archives.

The organs of sense constitute the analytic apparatus, the central nervous system, (brain and ganglia) the synthetic. A mere nothing—a swinging pendulum suffices to set in action, sight, hearing and muscular sense, each bringing in its train a throng of varied differences, which in their turn give origin to a multitude of distinct sensations, that crowd the shadow-army of mnemonic phantasms. If, however, the phenomenon presented to us, is something more, if it is, for instance, the person of some one we know,

the impressions produced are innumerable (sensory, representative and emotional) provoked by his present apparition and re-evoking past appearances. All this is only a work of integration, constructed from analytic data, direct and indirect, which are furnished by the sense; the direct are drawn from the object at once, the indirect (memory) from other objects and more or less similar occasions. The syntheses are the wider and more efficacious, as the number of indirect analytic data increase while the direct are limited by the material reality of the object and the capacity of our senses.

Until now we have considered the intelligence without regard to the living organism which is its real and inseparable atmosphere or at least the only one in which we see it operate. In order to judge correctly we must take into consideration the organic conditions which render distinctions possible. Since, from a subjective point of view, *distinction* requires as a necessary condition the establishment of multiple, precise and constant relations between the various sensations, so that an isolated distinction is impossible, so from the objective point of view, the dynamic processes which constitute its substratum must present the same characters of *multiplicity*, *precision* and *constancy*; nor will they give origin to distinctions if they be simple, inexact or inconstant. External actions, in order to be recognized as different, or in order to become internal differences, must provoke different dynamic processes. These dynamic processes, numerous and simultaneous as the external phenomena, and the differentiation of which proceeds *pari passu* with the onto-philogenetic development of the organs of sense, must flow into a more or less extensive central basin and there assume well-defined respective positions, so as to permit a definite combination between the elementary dynamic processes.

But, in order that all this may occur, that is in order that the elementary dynamic processes may preserve their proper individuality, they must reach the centre by separate paths. A system of centripetal paths is necessary, along which, if they are numerous and close together, we

can postulate the theory of isolated transmission; further the actual dynamic processes in order to accomplish the identification of objects, must join innumerable and varied other traits, the remains of antecedent processes, and, hence it is necessary that these latter shall have behind them something definite, durable and localized either in one place or in an extensive system of central receivers. And these central receivers, open to dynamic processes which the senses bring to them incessantly on all sides, must possess the power of changing other dynamic processes with these receivers—near and far—which are not employed in the act of distinction, but which, awakened by the collateral commotion, aid the actual distinction with a similar series, more or less long, compact and vivacious of mnemonic distinctions.

All these conditions, without which the psychic activity could have been only rudimentarily developed, are found realized only in the nervous system. There we find the fasciculi abundant, the fibres numerous whether it is the canals which carry to the consciousness, sensorial impressions or which discharge voluntary actions to the muscles; and like knights, there stand between the centripetal fibres of sensibility, and the centrifugal of motility, the receivers, viz.; the nerve cells.

The physiological action of external energy, the object of consciousness is favored by the different structures which the nervous system assumes in the organs of sense and wherever the surface of the body is exposed to external changes. Each of these structures, differing widely from each other, is extraordinarily appropriate for a given purpose, is very circumscribed in energy, reacting differently to the slightest variations in that kind of stimulus, but remaining mute and inert to all others; for light we have the rods and cones of the retina, exquisitely sensitive to the chemical influence of various colors, and extended over a large surface like a photographic plate; for sound the ciliated cells of Corti, prompt to vibrate in unison to various notes, and probably graded in dimensions like a musical instrument; for touch, simpler terminations of fibres with-

out cells, just sufficient to respond to quantitative differences in compression.

Where the fibres are very closely packed and crossed, distinct transmission along these paths of distinction is secured in more highly developed organisms by an isolating substance, the myelin, which sheaths the functioning and conducting axis-cylinder, as do the turns of silk round an electric wire. But this is not enough; among the elements of the central nervous system we find, in vertebratæ, a new sustaining and isolating tissue, which becomes more and more perfect as we ascend in the scale of life and intelligence, viz.; the neuroglia. Composed also of fibres and of cells which are characteristic in form, and which in microscopic investigations can be stained independently of the nerve tissue proper, this tissue although extraneous to the psychic processes, is not without relations to them, inasmuch as it seems to trace out the paths for the nerve fibres, which from the dawn of life develop in definite directions, and with a determinate goal; it winds round the nerve cells as if to protect them from injury, and, above all, to prevent dispersion of energy, and acquiring here a delicacy in its corpuscles and a peculiar ramification of fibres which is not found in that which surrounds the nerve fibres.

In order to better individualize the objective differences which the intelligence must translate into distinctions the nervous system is not only divided into fibres for separate transmission, but each fibre, and the essential part of each fibre, the axis-cylinder, is subdivided into fibrils. This fibrillar structure, prophesied by Max Shultze and to-day verified by others with the same methods, continues into the protoplasm of the cell, which therefore seems susceptible to partial stimuli, capable of deviating in various ways the nerve wave which arrives, traverses, and is discharged, transformed.

While this delicacy of microscopical subdivisions, combined with a rigorous separation between nerves, fibres and fibrils, as indeed between different portions of the same cell, demonstrates that extreme precision of connections which is required for the exact and distinct localization of

the innumerable dynamic processes which correspond to the indeterminate number of our representations, on the other hand the fine feathery branches of the nerve cells, the collateral fibres which arise at short intervals from an axis-cylinder, and the bundles of associated nerves connecting distant cells, appear to be for the purpose of rendering possible that multiplicity of anatomical relations which we have established as another of the necessary factors of intelligence. Its processes, analytic as they originate from the objective reality, and synthetic at the moment that they take conscious form, comprehend whole constellations of cells, and pass, not only from cell to cell, but from system to system, in graven combinations, and microscopically are most extensive—a kaleidoscope of intelligence? The most careful localization of single processes is not hindered, on the contrary is rather aided, by the rank abundance of the fibres and cells, because the abundance of the elements is counteracted by their minuteness and most exact relations. This harmony of the morphologically small and the numerically great is without a parallel in any other tissue, including the connective where the fibres and cells live, if not in nutritive, certainly with much functional autonomy. The association, not in casual continuity, but as a systematic union between near and distant elements with intermediary expansions, and evidently designed to maintain a functional solidarity, is a property characteristic of the nervous system.

At this point we are brought face to face with another problem. Is this systematic association, the anatomical basis of intelligence, a general attribute of the nervous system in all its parts and throughout all its forms? We answer promptly no. The spinal cord has no consciousness, nor is it true that echinodermata and cœlenterata possess it. The biological end of the nervous system as a whole, as of every other organ indeed, is not consciousness alone, but simply and principally utility, or the preservation of the organism, which aim may be attained without intelligence or consciousness. In life's daily battle the survivors are the fit or the fitted, those, namely, who have had the fortune (rarely indeed the prudence) to conform to the changing

conditions of their environment. Selection between the fit who survive, and the unfit who succumb, perpetuates, as is known, the advantageous adaptation of certain stable formations, which become characteristics of the species. Among these formations is the nervous system, inasmuch as it is rendered capable of responding to external events by adequate and advantageous reactions which assume the form of movements, being drawn towards favorable agents and repulsed from hurtful influences. In the evolution of the nervous system this organization is at first of the simplest; to a given stimulus and only to that, there succeeds a certain reaction. For this consciousness a system of association is not at all necessary. It is sufficient that a group of cells or neurons as we shall call them, anthropomorphically sensitive, receptacles of mechanical or chemical force in a state of tension, should be distributed throughout the external tegument, and that the terminations of these be applied to a group of motor neurons, and we have those simple and unconscious movements of retraction and prehension, of flight or approach, of which the animal stands in need for purposes of self-preservation and nourishment. When the accumulation, in time and space, of external events always becoming more varied, demands more and more adequate adaptations, or more differentiated and numerous reactions, the organization of the nervous system becomes multiplied and complicated, giving origin to so many *special mechanisms*, that one acts without the knowledge of others, and ignores them. If, however, the special mechanisms continue to increase, they must cease to be separate and autonomous, and there will become necessary the formation of a single governing organ, general and complex. The function of this mechanism will be the resolution of different external events, which are so many problems presented to it, no longer answering by stereotyped reactions but with responses which vary according to circumstances, bringing into co-relation, and, as it were, sitting as arbiter between the special mechanisms.

Economy of space renders the formation of further new special mechanisms impossible; a similar multiplication, in

order to meet increasing needs, would never end and would finally lead to encumbering the organism, to the prejudice of other organs and tissues which are still more necessary to life. Economy of time renders quite inadequate to needs which are not only becoming always more incessant and numerous, but which are changing and ever new, a series of mechanisms which must be formed slowly and from time to time in onto-genesis and philo-genesis, and which respond each by a special reaction to a specified agent. In order then, not to be overcome by the number and novelty of the stimuli, the organism must possess a central mechanism, to which shall flow impressions of external agents, and from which can be diffused opportune reactions, even to unusual combinations of stimuli. And thus are provided for the new situations: thus are improvised those attacks and resistances, which arise from the programme of a biological automatism; thus the unexpected is overcome. In place of an interminable procession of special adaptations and habits we have a general adaptability with occasional adaptations; in place of complete equipment of relations restricted to given external actions and certain nerve reactions, we have a system of indefinite relations between an always augmentable number of external actions and an increasable number of complicatable nervous reactions, that are the result of a conscious discrimination, the object of an intelligent prevision and the equivalent of a voluntary determination. This perfecting of the nervous system, inasmuch as it unifies reactive adaptations into a systematic adaptability, having its seat in a very complex central organ, conduces necessarily to intelligence. In fact, the intelligence is the product of functional evolution from *specific* to *systematic* reactivity, and organic evolution from small disseminated centres to one unifying centre. This superior organization of the nervous system does not preclude the usefulness of reflex action. We have, on this account, therefore the reason of the co-existence in the higher nervous system of inferior centres for reflex action, and superior for distinction and conscious determina-

tion; an automatism which vegetates and prospers aside from intelligence.

If now we examine the structure of the nervous system in its various parts, as also in its philogenetic gradations, we must recognize, that the conditions demanded for the carrying out of conscious processes, can only be realized in the higher forms. In the domain of the sympathetic nerve, the relations between cell and cell, between neuron and neuron, are almost individualized; pericellular tufts exist, including only one element. In the spinal cord the neurons which we, in a rather arbitrary manner, term sensory, give off, it is true, a large number of collateral filaments, but each of these is placed in relation with a determinate number of motor cells, and gives origin, if not to one only, at least to only a very few types of reaction, which take a certain definite course and have a special effect, both of which are very simple. In the cerebellum itself we find also nests around the cells and other affirmations of simple relations between neuron and neuron. Besides, the connections between the various cells assume a geometric regularity; in the sagittal plane there expand like a fan, very exactly, the string of cells of Purkinje and the small flattened cells of the molecular layer; the prolongations of the granules run parallel to each other as regularly as telegraph wires in the transverse plane, which is exactly at right angles to the preceding, occupying an entire lamina of the cerebellum.

How different is the structure of the central organ *par excellence*, the cerebrum, studded with cells in great number and apparent confusion, like the stars in the vault of heaven, they present the most complicated relations in every sense, and have no geometrical arrangement. The pyramidal cells, with their luxuriant aborescent branches provided with small spines which have been known for some years but only of late have been recognized as morphological entities, probably as elementary collectors of the stimuli which act on the cells, stand surrounded by a most intricate network of nerve terminations belonging to the sensory fibres of projection or to the eminently psychical fibres of associa-

tion, which connect the various parts of the brain and in the human cerebrum form a very important part of it—a system of intercellular communications extending to great distances, from convolution to convolution, lobe to lobe, and hemisphere to hemisphere. This plurality of relations is not weakened by the microscopic intervals which, in every part of the nervous system, divide one neuron from another, each maintaining an anatomical individuality; it is known that the current or dynamic processes passes without any cessation, across these minute intervals, which indeed are far from condemning these nerve elements to a functional isolation at all resembling inertia. These lacunae probably form the means by which is made possible the gradual anaplastic approaches between the neurons, thanks to which, we can explain clearly both the slow progressive organization and the continuous and indefinite perceptibility of the intellectual functions.

The progressive diffusion of the nerve processes in the territory of the nerve centres, is proved in the optic system of fibres. Here the single rod of the retina which has collected its microscopically small fasciculus of luminous rays and carries them to the sensorial cells of the visual centre, passes by a series of neurons, which increase in number as we proceed from the periphery towards the centre, in other words forming a cone, the apex of which is at the retina, and its base the cerebral vault. The elementary process which spreads itself between the imaginary walls of this cone, has very aptly been likened to an avalanche; it would have remained a simple heap of snow had it not encountered the world of cerebral neurons. From more to less is the common law of all sensory life, small at first, it is large at its termination in the central organ. Thus the vault of the cerebrum contains in its vast superficies, the projections of the retina and the auditory organ, and the sensory nerves of the skin, or, in other words, it contains a second skin, ear and retina. And each of these projections, similar in structure and passing insensibly into each other, results from other fairly extensive partial projections, which correspond to the very minute morphological elements of

which the sensory apparatus at the periphery is composed; so that while the morphological elements are arranged in lines the one outside the other, as in the retina and ear, or scattered throughout the skin, tongue and nasal mucous membrane; as is demanded by their analytic office, in the cerebral cortex it is entirely different. There the partial but wide projections on which are discharged the elementary avalanches of each sensory process, are arranged like the circles made by a stone dropped on the surface of the water. Each of the circles has points in common with the others and none, except those on the outside, possesses a single point which is entirely its own; each circle has nevertheless a precise and mathematical individuality, nor would there be any reason for mistaking it for any other.

It happens in consequence that each cell of the cerebral cortex belongs at the same time to several partial projections, or is situated in a system of cones which are partially coincident and the bases of which, more or less promiscuous, guard at the same time many apices, many rods, ciliated cells or sensory endings in the skin. A single cerebral cell is the prey at the same time of many accumulated impressions from all of which at once, as it scintillates with their attrition issues the act of distinction.

In this complexity, not so much of elementary form as of relations, in this intensity of life which it derives not from the wide extension but from the simultaneous overlapping of the processes which come crowding in, and give place to conscious elementary distinctions, each of which is the result of much component energy, in this we see the whole physiological mechanism of intelligence. Therefore this highest function of the nervous system is possible only in the cerebral cortex or in ganglia similar to it in centrality and structure.

It consciousness cannot exist in organs so complicated and centralizing (*accentralori*) as the spinal cord, the ganglia of the sympathetic, and, we do not hesitate to say, in the analogues of these in many invertebrates, how is it possible to imagine it in the lowest of the coelenterata protozoa, or worse still in the protisti? How, in spite of a few empty

appearances, can we suppose it to be present in plants? Modern studies on unicellular organisms and on the mobile cells of the metazoa, not only prove the direct efficiency of physical and chemical agents such as light, gravity, electricity, and reducing substances on their movements, but teach us the way to reascend to a mechanical interpretation of the human mind.

As to other living beings the arthropoda show a certain intelligence because they are provided with good sensorial organs and cerebroid ganglia, where there take place some unifications of nerve processes, but the type of such intelligence differs widely from ours. In bees and ants the extraordinary specialization issuing from useful reactions, has rendered superfluous or perhaps has impeded the farther development of the cerebroid ganglia; the richness of the reflex automatism has condemned the intelligence. These primates of insect life are not further perfectible because of their kind they are too perfect, and have stopped at a crystallized grade of intelligence, in which can flourish only a semi-automatic and unvariable activity, a kind of Chinese civilization. The cephalopod mollusks, endowed with highly developed sensory organs and cerebroid ganglia, but with a minor predominance of the reflex centres, are less perfect but more versatile, less developed as to offence and defense, but with a more decided tendency to a further development of nerve organization, indeed to intellectual progress, of which they are themselves a good example in comparison with the lower orders of their zoological group. On the other hand in echinodermata with their incomplete ring of simple and ill-connected ganglia, consciousness does not exist at all, and we are compelled to smile when in the reflex act of the asteria, which, one of its five segments being seized by the enemy, detaches it at the point of articulation and thus saves the rest of itself from death, the fancy of scientists recognizes a voluntary auto-mutilation or, when it is dismantled of all its segments, a suicide.

Not for nothing do the neurons, ramifying so richly in the human cerebrum, decrease and become more simple as we descend in the animal kingdom, until in the lowest

species, as in worms, we lose all trace of fine nerve branchings. Nor is it for nothing that there is arranged in vertebrates, among the chief points of the sensory nerves, a web of indirect communications, which, with the paths of the cerebral cortex reciprocally prevents, for instance, the isolation of the geniculate bodies and the acoustic tubercles; without this we should lack consciousness of distinction between such different classes of sensation as light and sound, and the intelligence would be in an altogether rudimentary state. This same uniformity and continuity of structure throughout the wide expanse of the cerebral cortex, demonstrates well its synthetizing office. Intellectual evolution consists then of conservation with the gradual formation of a centralizing nervous organ. And if we extend the signification of the formula so as to include the supra-oesophageal ganglia, we may conclude that in the world of living creatures, where there is intelligence, there is brain, and that without this there can not be the slightest ray of reason. If life is a property of albuminoid substances in a given condition of equilibrium, intelligence is a property of a nervous system of a certain degree of evolution.

Wherever such a principle is true the counterproof, or in the language of the scholar, the reciprocal, also must be true. If a brain or a ganglion functioning in the way we have described, be necessary and sufficient for the production of consciousness, each process being developed in that organ and with these properties, must be of necessity a conscious act. Is this true? The doubt is not sophistical, therefore a response is not superfluous.

Who cannot enumerate any number of co-ordinated and complex actions, which from force of habit, we perform automatically? These unconscious actions, for the most part as quick and precise as reflex movements, were at first acts of intelligence; walking, swimming, bowing, dressing and undressing, the execution of many manual acts, cost us in our infancy, not a little mental labor, but are now performed unconsciously. Thus, that is, as degenerations of conscious facts, the zoologists explain many curious and complicated instincts, which can be transmitted by heredity.

It is therefore true! Instincts and habits become organized not only from below, by a perfecting of reflex movements, but also from above, by a decadence of volitional and conscious actions. Now what does this mean? The mechanism of the transformation is of the simplest; these useful and automatic processes either no longer take place in the cerebrum, or still developing there, they involve fewer morphological elements, or the neurons are so reduced as to be insufficient for the production of consciousness. The orbit of organic life is thus restricted, the succession of functional acts more simple; a direct alliance is effected between subordinate neurons, the motor neuron is associated in physiological solidarity with the sensory neuron; the demand for spinal, bulbar or even cerebral curtailment is satisfied, but without touching that superior diffusion which invades vast cerebral zones and is the physical condition of consciousness. In fact, if the reaction does not change its seat, if it is not degraded anatomically, only repetition can render it unconscious, can degrade it physiologically. Thus it happens in visual images, that, bound up in a complicated system of neurons, and increased to avalanches without any possibility of becoming less, they never issue from the consciousness, because they are continuously repeated.

By many laborious paths, strewn with technical and scientific data, we have at length attained a sufficient height to take in a wide horizon. On this horizon are stretched the great outlines of an anatomy of the intelligence, that is, of the most magnificent objective point which biological studies can attain. We have fixed firmly and in exact terms the relations which exist between these three things, the world of subjective phenomena, the system of dynamic processes which are the conditions necessary for these, and the network of anatomical connections on which they are both based. The facts collected, on which we have touched in all their phases, have guided us to a scientific synthesis which has been brought forward and suggested by simple good sense. It seems wonderful that it has been possible to sustain a contrary view with so much vigor.

That for every function an organ is necessary, and that to the complexity of the function must correspond the complexity of the organ, no one can doubt. Then why raise this singular exception which favors the intelligence at the expense of the brain? This causes us to consider how there weigh on the human mind those prejudices derived from ego-centrism and how, under innumerable disguises, and even under the mantle of science, they insinuate themselves deeply into its stratifications in spite of continuous effort to eliminate them.

HYGIENE OF DEGENERACY.*

As Illustrated by Charles and Mary Lamb.

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PHILISTINISM inspired by its latent fetichism anent genius turgidly expands Dryden's paraphrase of the dictum of Aristotle:

Great wit to madness nearly is allied,
And thin partitions do their bounds divide.

And either thanks its stars that through escaping genius it escapes its eccentricities or, through the hope of passing platitudes for genius, exaggerates these. A little over a decade ago I pointed out† that careful analysis of the facts demonstrated that genius is not a product of morbid mind. In the exceptional instances where the two co-exist, genius is evidence of a healthy, conservative element struggling with the incubus of disease. One-sided geniuses are atavistic returns toward soundness. The nearer the genius to soundness, the more it is productive and the less the want of balance. A striking illustration of this appeared seven decades ago in an essay on "The Sanity of True Genius," emphatically maintaining the following position:

*Read before the Chicago Academy of Medicine May 14, 1897.

†ALIENIST AND NEUROLOGIST, 1887.

So far from the position holding true, that great wit, (or genius in our modern way of speaking) has a necessary alliance with insanity, the greatest wit, on the contrary, will ever be found to be the sanest writers. It is impossible for the mind to conceive of a mad Shakespeare. The greatness of wit, by which the poetic talent is here chiefly to be understood, manifests itself in the admirable balance of all the faculties. Madness is the disproportionate straining or excess of any one of them. "So strong a wit", says Cowley, speaking of a poetical friend,

" did Nature to him frame,
As all things but his judgment overcame:
His judgment like the heavenly moon did show,
Tempering that mighty sea below."

The ground of the mistake is, that men, finding in the raptures of the higher poetry a condition of exaltation, to which they have no parallel in their own experience, besides the spurious resemblance of it in dreams and fevers, impute a state of dreaminess and fever to the poet. But the true poet dreams, being awake. He is not possessed by his subject, but has dominion over it. In the groves of Eden he walks familiar as in his native paths. He ascends the empyrean heaven and is not intoxicated. He treads the burning marl without dismay; he wings his flight without self-loss through realms of chaos, "and old night." Or, if abandoning himself to that severer chaos of a "human mind unturned," he is content awhile to be mad with Lear, or to hate mankind (a sort of madness) with Timon; neither is that madness, nor this misanthropy, so unchecked, but that, never letting the reins of reason wholly go, while most he seems so to do, he has his better genius still whispering at his ear, with the good servant Kent suggesting saner counsels or with honest steward Flavius recommending kindlier resolutions. Where he seems most to recede from humanity, he will be found the truest to it. From beyond the scope of Nature if he summon possible existences, he subjugates them to the law of her consistency. He is beautifully loyal to that sovereign directress even when he appears most to betray and desert her. His ideal tribes submit to policy; his very monsters are tamed to his hand even as that wild sea-brood shepherded by Proteus. He tames, and he clothes them with attributes of flesh and blood till they wonder at themselves, like Indian Islanders forced to submit to European vesture. Caliban and the witches, are as true to the laws of their own nature (ours with a difference) as Othello, Hamlet, and Macbeth. Herein the great and the little wits are differenced.

If the latter wander ever so little from nature or actual existence, they lose themselves and their readers. Their phantoms are lawless; their visions nightmares. They do not create, which implies shaping and consistency. Their imaginations are not active for to be active is to call something into act and form, but passive as men in sick dreams. For the supernatural or something super-added to what we know of nature, they give you the plainly non-natural. And if this were all and these mental hallucinations were discoverable only in the treatment of subjects out of nature, or transcending it, the judgment might with some plea be pardoned if it ran riot, and a little wantonized; but even the describing of real and everyday life, that which is before their eyes, one of these lesser wits shall more deviate from nature—show more of that inconsequence which has a natural alliance with frenzy than a great genius in his “maddest fits” as Withers sometimes calls them. We appeal to any one that is acquainted with the common run of Lane’s novels as they existed just ere and just after the Eighteenth century, those scanty intellectual viands of the whole female reading public, till a happier genius arose, and expelled forever the innutritious phantoms, whether he has not found his brain more “betossed,” his memory more puzzled, his sense of when and where more confounded, among the improbable events, the incoherent incidents, the inconsistent characters or no-characters of some third-rate loving intrigue, where the persons shall be a Lord Glendamour and a Miss Rivers, and the scene only alternates between Bath and Bond street, whether a more bewildering dreaminess were not induced upon him, than he has felt when wandering over all the fairy grounds of Spencer. In the production we refer to, nothing but name and place is familiar; the persons are neither of this world nor of any other conceivable one; an endless string of activities without purpose, of purpose destitute of motive; we meet phantoms in our own walks; fantasques only christened. In the poet we have names which announce fiction; and we have absolutely no place at all, for the things and persons of the Fairy Queen prate not of their “whereabout.” But in their inner nature and the law of their speech and actions we are at home and upon acquainted ground. The one turns life into a dream; the other to the wildest dreams gives the sobrieties of every day occurrences. By what subtle art of tracing the mental process it is effected we are not philosophers enough to explain, but in that wonderful episode of the cave of Mammon, in which the money God appears first in the lowest form of a miser, is then a

worker of metals and becomes the god of all the treasures of the world and has a daughter, Ambition, before whom all the world kneels for favors, with the Hesperian fruit, the waters of Tantalus, with Pilate washing his hands vainly but not impertinently, in the same stream, that we should be at one moment in the eye of any hoarder of treasures only at the next by the forge of the Cyclops, in a palace and yet in hell, all at once with the shifting mutations of the most rambling dream, our judgment all the time awake and neither able or willing to detect the fallacy, is a proof of that hidden sanity which still guides the poet in his wildest seeming aberrations.

It is not enough to say that the whole episode is a copy of the mind's conceptions in sleep. It is in some sort, but what a copy. Let the most romantic of us that has been entertained all night with the spectacle of some wild and magnificent vision, recombine it in the morning, and try it by waking judgment. That which appeared so shifting and yet so coherent, while that faculty was passive, when it comes under cool examination shall appear so reasonless and so unlinked, that we are ashamed to have been so deluded; and to have taken though but in sleep a monster for a god. But the transitions in this episode are every whit as violent as in the most extravagant dream and yet the waking judgment ratifies them."

This calm temperate recognition of sanity as characterized by well balanced control of impulsive tendencies in thought and action is worthy the ablest alienist, yet it is not rarely found in those insane whose disorder has swept over a sound mental back-ground. He who has seen this sound mental background struggle with the storm and stress of sunstroke and traumatism is naturally of the opinion of Coleridge that often,

"When a man mistakes his thoughts for persons and things he is mad. Madness is not simply a bodily disease. It is the sleep of the spirit with certain conditions or wakefulness; that is to say, lucid intervals. During this sleep or recession of the spirit the lower or bestial states of life rise up into action and prominence. It is an awful thing to be eternally tempted by the perverted senses. The reason may resist for a long time, it does resist for a long time; but too often, at length, it yields for a moment and the man is mad forever. An act of the will is, in many instances,

precedent to complete insanity. Bishop Butler said that he was all his life struggling against the devilish suggestions of his senses which would have maddened him if he had relaxed the stern wakefulness of his reason for a moment."

Mystic as this seems it is but a paraphrase of modern clinical psychiatry with the secondary or later acquired ego substituted for the spirit. The forebrain, as Meynert* has shown, is an inhibitory apparatus against the lower and more instinctive natural impulses. The higher its development the greater is the tendency to subordinate the particular to the general. Even in the lower animals a high state of social growth occurs as in the communities of bees and ants. The same is the case in the development of man in the infant, a being entirely wrapped in its instincts of self-preservation, the "primary ego" is predominant and the child is an egoistic parasite. As development goes on, this standpoint is passed, conscience assumes its priority, the fore-brain acts as a check on the purely vegetative functions, and the "secondary ego" takes precedence over the primary one. This is the general order of society designated as civilization or social order. If this inhibition becomes weakened, disordered predominance of the natural instinct or impulses occurs, and when it is totally lost the individual is in the position of a criminal who opposes the ethical order of society; a parasite and one of the worst kind, one who not only lives upon his host but destroys him in so doing.

Kate Sanborn† is of the opinion that the asserter of the sanity of true genius, Charles Lamb can not be considered a convincing authority on this side of the discussion because of his attacks of lunacy and Carlyle's bitter phrase anent Lamb's "diluted insanity." However, Charles Lamb demonstrates the error of diagnosing abnormalities from an author's writings. No alienist could discover in Lamb's writings degenerative taint. Indeed their conservative humor shows mental balance to an unusual degree. They

*Psychiatry. Sachs' translation.

†Vanity and Insanity of Genius.

display a "Sanity of True Genius" that strikingly evinces the mental equipoise thus outlined by Herzen:*

The conscious mental process betrays an imperfection of the cerebral organization, for it indicates the presence of a new unusual activity which deranges the equilibrium, the innate or previously acquired automatism and which does not find a well-formed mechanism ready to discharge it. The conscious mental process is the transitory phase of an inferior to a superior cerebral organization. It expresses novelty, incertitude, hesitation, groping, astonishment, imperfect association and incomplete organization, a want of promptitude and exactness in transmission, a loss of tenure in the phenomena of reaction. It indicates that the nervous paths are not sufficiently cleared or distinctly enough traced to permit without destruction in the final effect, reflex movements or reflex ideational sensations.

The degree of conscious mental processes will hence determine the amount of attention. Attention, as Darwin points out, is more important than any other human faculty for intellectual progress. The amount of attention will hence be comparatively little in the ape, lunatic and philistine since, as Herzen points out, the power of new ideas to create states of uncertainty will depend on the absence or presence of preformed paths, or in other words, on the power of association. This power being greatest in the genius, the power of attention is greatest in him. Hagen taking issue with this position insists that genius differs from the normal type in being dominated by one idea which it cannot abandon. Ribot† hitting at Hagen's error finds that:

In every sane person there is almost always one dominant thought which controls his conduct, the thought of pleasure, money, ambition, his soul's salvation and the like. This fixed idea which persists through life save where it is superseded by some other finally becomes a fixed passion, which proves that attention and all its modes depend upon affective states. The transformation of attention into a fixed idea is still more clearly seen in great men. "What is a great life?" asks Alfred de la Vigne. "A thought of youth realized in mature years." If men *en masse* be observed, not persons of trained

*ALHIMI AND NEUROLOGIST, 1892.

†Attention.

and cultivated minds, as psychologists almost always do, it will readily be seen that spontaneous and above all voluntary attention are exceptional states. Eliminate first the routine of life, that vast mass of habits which make us act like automatons with vague and intermittent states of consciousness, eliminate those periods of our mental life in which we are passive because the order and succession of our state of consciousness come to us from without and the series of states is imposed upon us in reading a book of average interest or work manually or otherwise presupposing a succession of acts in a set order. Eliminate the state of relative repose wherein one is thinking of nothing at all that is wherein the states of consciousness have neither intensity nor clear definition as reverie in all its degrees, eliminate states of passion and strong agitations with their irregular fluctuations and their diffusion or movement. These and perhaps a few other states eliminated, what remains may be credited to the general account of attention; and in this general account the cases of spontaneous attention constitute the great majority of the entries while the clear and indisputable cases of voluntary attention are few; with many men they hardly amount to anything.

As I pointed out in the Academy* six years ago, to the limitedly educated mind of the average philistine, insane delusions seem akin to poetic fancy because he has never passed from the tyranny of custom, and to his misoneism, novelty is productive only of incertitude. Indeed the delusions of the insane are so much more nearly allied to his own mental limitations that he is very apt to look upon them as evidences of sanity while he denounces the fancies of the wit, poet or artist, the discoveries of the scientist or the creed of the ethical teacher, which cause him more mental perturbation, as emanations from cranks. In politics this type of philistine has more than once denounced the "golden rule" as the "iridescent dream of a lunatic." Such philistinism pleases the misoneism of the mediocre whence the enthusiasm over platitudes and the reign of the philistine in newspaper art, literature and science and whence the frequent repetition of Horace's epigram.

The degenerate lays stress on the outre relations of familiar things and, like the savages, is great in analogies.

*ALIENIST AND NEUROLOGIST, January, 1892.

The normal being from his power of inter-association, links familiar things into an entity whose origin without the links seems more insane than the outre creations of the degenerate which affiliate with the fetichism latent in the philistine despite centuries of culture. The pithy, homely humor of Charles Lamb seemed for this reason to the sour dogmatic philistine Carlyle "diluted insanity."

Charles Lamb so learned through his acute insanity, the power of the insane to prevent and control insanity in themselves, that his keen recognition of the checks which constitute the difference between the normal and the insane would never lead an alienist to suspect the bad heredity of his family.

The paternal branch of the Lamb family came from the fens of Lincolnshire where, as has been shown by Murrell, laudanum-using is rife albeit with comparative immunity from the usual effect of opiophagism. In these districts degeneracy of type is frequent but ascribed to malaria. John Lamb, the father of Charles, was born of parents "in no very affluent circumstances," in a lonely fen county, seven miles from the nearest church, an occasional visit to which was a feat, so dangerous was then walking in the fens. While still a child John Lamb's family removed to Lincoln so poverty-stricken because of the insanity of its head, that John had to be made a foot-boy. The fact that he subsequently became barrister's clerk indicates gentler early nurture than this early thrusting into the fierce struggle for existence would otherwise imply. John Lamb grew up humorous, gay, inflexibly honest and upright with a dash of chivalry in his nature and a poetic tendency which limited by environment found voice in verse whose thought exceeded power of expression. At the age of fifty he became insane and died demented. His sister was an uncanny old soul whose silent ways and odder witchlike mutterings and mumblings coupled with a wild look in her eyes as she peered out from under her spectacles made her an object of dread. The maternal ancestry of Lamb has received but little attention yet as Nisbet* points out, in it

*Insanity of Genius.

occurs neuropathic heredity. The mother exhibited that capricious affection often present in the degenerate. The maternal grandmother had that moral anæsthesia and brutality toward mental suffering which is an offspring of degenerate egotism. Elizabeth Field, many years younger than John Lamb, her husband, was a handsome, dignified, pleasure seeking hysteric, lacking insight into child character. Toward Mary and Charles she never manifested maternal tenderness. Mary, a shy, sensitive, nervous, affectionate child, who early evinced liability to brain disorder, peculiarly needed tender judicious care.

The mother always loved John most* who was not worth one-tenth of Mary. John, the eldest, a handsome lively boy, became what good looks and favoritism were sure to make of an egotist. Dear, little, selfish, craving John of childhood, became big selfish John in manhood treated with indulgence by brother and sister who exempted him from any share of the family burden even when he was prosperous. Mary Anne Lamb, born December 3, 1764, was the third, while Charles was the youngest, of seven children. All died in infancy save John, Mary and Charles. Mary Lamb was brought up in a lower middle class home relieved alike from the stress of poverty and speculative wealth. She received her education in a day school, teaching, to use the yankee colloquialism, the three R's. The best of her education was the library of Mr. Salt, her father's employer. Here she was early left to browse without prohibition on the principle advocated by Ruskin:

Turn† the girl loose into the old library every day and let her alone. She will find what is good for her, you cannot; for there is just this difference between the making of a girl's character and a boy's: you may chisel a boy into shape as you would a rock, or hammer him into it if he be of a better kind, as you would a piece of bronze, but you cannot hammer a girl into anything. She grows as a flower does; she will wither without sun; she will decay in her sheath as a narcissus will, if you do not give her air enough; she may fall and defile her head in dust if you leave her with-

*Anne Gilchrist's Mary Lamb.

†Sesame and Lillies.

out help at some moments of her life, but you cannot fetter her; she must take her own fair form and way if she takes any and in mind as in body must have always

"Her household notions light and free,
And steps of virgin liberty."

Let her loose in the library as you do a fawn in the field. It knows the bad weed twenty times better than you, and the good ones too, and will eat some bitter and prickly ones good for it which you had not the slightest thought would have been so.

Anne Gilchrist taking issue with Ruskin (as to the policy of turning girls loose into a library) is of opinion that "A little selection however would have made the pasturage all the wholsomer to a child of Mary's sensitive brooding nature, for the witch stories and cruel tales of the sufferings of the martyrs on which she pored all alone, as her brother did after her, wrought upon her tender brain and lent their baleful aid to nourish those seeds of madness which she inherited."

Autobiographical incidents of Mary Lamb's Margaret Green, the Young Mahometan, lend vraisemblance to this opinion. The maternal grandmother was housekeeper to a country family with a stately country mansion, to which Mary paid repeated visits. Her first visit was always to: A very large hall, which from being paved with marble was called the Marble Hall. The heads of the twelve Cæsars were hung around the hall. Every day I mounted on the chairs to look at them and to read the inscription underneath, till I became perfectly familiar with their names and features. Hogarth's prints were below the Cæsars. I was very fond of looking at them and endeavoring to make out their meaning. An old broken battledore and some shuttlecocks with most of the feathers missing were on a marble slab in one corner of the hall which constantly reminded me that there had once been younger inhabitants here than the old lady and her gray-headed servants. In another corner stood a marble figure of a satyr; every day I laid my hand on his shoulder to feel how cold he was. This hall opened into a room full of family portraits. They were all in dresses of former times; some were old men and women and some were children. I used to long to have a fairy's power to call the children down from heir frames to play with me. One little girl, in particular who hung by the side of the glass door which opened into the garden,

I often invited her to walk there with me; but she still kept her station, one arm around a little lamb's neck and in her hand a large bunch of roses. From this room I usually proceeded to the garden. When I was weary of the garden I wandered over the rest of the house. The best suite of rooms I ever saw by any other light than what gleaned through the tops of the window-shutters which however served to show the carved chimney pieces and the curious old ornaments about the rooms; but the worked furniture and carpets of which I had heard such constant praises I could have but an imperfect sight of, peeping under the covers which were kept over them by the dim light; for I constantly lifted up a corner of the envious cloth that hid these highly praised rarities from my view.

The bed-rooms were also regularly explored by me, as well to admire the antique furniture as for the sake of contemplating the tapestry hangings which were full of Bible history. The subject of the one which chiefly attracted my attention was Hagar and her son Ishmael. Every day I admired the beauty of the youth and pitied the forlorn state of him and his mother in the wilderness. At the end of the gallery into which these tapestry rooms opened was one door which having often in vain attempted to open it I concluded to be locked and finding myself shut out I was very desirous of seeing what it contained and though still foiled in the attempt I every day endeavored to turn the lock which, whether by constantly trying, I loosened, being probably a very old one or that the door was not locked but fastened tight by time, I know not. To my great joy, as I was one day trying the lock as usual, it gave way and I found myself in this long desired room. It proved to be a very large library. This was indeed a precious discovery. I looked around on the books with the greatest delight: I thought I would read them every one. I now forsook all my favorite haunts and passed all my time here. I took down first one book then another. If you never spent whole mornings alone in a large library, you cannot conceive the pleasure of taking down books in the constant hope of finding an entertaining book among them; yet after many days meeting with nothing but disappointment, it became less pleasant. All the books within my reach were folios of the gravest cast. I could understand very little that I read in them and the old dark print and the length of the lines made my eyes ache.

When I had almost resolved to give up the search as fruitless I perceived a volume lying in an obscure corner of

the room. I opened it; it was a charming print; the letters were almost as large as the type of the family Bible. In the first page I looked into I saw the name of my favorite Ishmael whose face I knew so well from the tapestry and whose history I had often read in the Bible. I sat myself down to read this book with the greatest interest. The title of it was "Mahometanism Explained." A great many of the leaves were torn out, but enough remained to make me imagine that Ishmael was the true son of Abraham. I read here that the true descendants of Abraham were known by a light which streamed from the middle of their foreheads. It is said that Ishmael's father and mother first saw this light streaming from his forehead as he was lying asleep in the cradle. I was very sorry so many of the leaves were torn out, for it was as entertaining as a fairy tale. I used to read this history of Ishmael and then go back and look at him in the tapestry and then read his history again. When I had almost learned the history of Ishmael by heart I read the rest of the book and then I came to the history of Mahomet, who was there said to be the last descendant of Abraham.

If Ishmael had engaged so much of my thoughts how much more so must Mahomet. His history was full of nothing but wonders from beginning to end. The book said that those who believed all the wonderful stories which were related of Mahomet were called Mahometans and True Believers; I concluded that I must be a Mahometan for I believed every word I read.

At length I met with something which I also believed though I trembled as I read it. This was that after we are dead we are to pass over a narrow bridge which crossed a bottomless gulf. The bridge was described to be no wider than a silken thread and it is said that all who were not Mahometans would slip on one side of this bridge and drop into the tremendous gulf that had no bottom. I considered myself as a Mahometan yet I was perfectly giddy whenever I thought of passing over this bridge. One day seeing the old lady totter across the room, a sudden terror seized me for I thought how would she ever be able to get over the bridge. Then too it was that I first recollected that my mother would also be in imminent danger for I imagined she had never heard the name of Mahomet because I foolishly conjectured this book had been locked up for ages in the library and was utterly unknown to the rest of the world.

All my desire was now to tell them the discovery I had

made for I thought when they knew of the existence of "Mahometanism Explained" they would read it and become Mahometans to insure themselves a safe passage over the silken bridge. But it wanted more courage than I possessed to break the matter to my intended converts. I must acknowledge that I had been reading without leave and the habit of never speaking or being spoken to, considerably increased the difficulty. My anxiety on this subject threw me into a fever. I was so ill that my mother thought it necessary to sleep in the same room with me. In the middle of the night I could not resist the strong impulse to tell her what preyed so much on my mind. I awoke her out of a sound sleep, and begged she would be so kind as to be a Mohometan. She was very much alarmed for she thought I was delirious which I believe I was since I tried to explain the reason of my request but it was in such an incoherent manner that she could not at all comprehend what I was talking about. The next day a physician was sent for, and he discovered by several questions that he put to me, that I had read myself into a fever. He gave me medicine and ordered me to keep very quiet and said he hoped in a few days I should be very well. But, as it was a new case to him, he never having attended a little Mahometan before, if any lowness continued after he had removed the fever, he would, with my mother's permission, take me home with him to study this extraordinary case at his leisure. He could then hold a consultation with his wife, who was very useful to him in prescribing remedies for the maladies of his younger patients.

Reading here merely tinged a psychosis frequent in degenerate children who are permitted to be unduly introspective. Children of such heredity early manifest, as Krafft-Ebing* has shown, decided neurotic excitability and tend to neuroses at physiologic crises like the first and second dentition and the onset and close of puberty. Slight physical or mental perturbation is followed by insomnolence, delirium, hallucinations etc. Hyperæsthesia of the nervous system and excessive reaction to pleasant or offensive impressions exist. Vasomotor instability is present, pallor, blushing, palpitations or precordial anxiety result from trivial moral or physical excitants. There is precocity or aberration of the sexual instinct. The disposition is irritable. The

*Lehrbuch der Psychiatrie.

grasshopper is a burden. Psychic pain arises from the most trivial cause and finds expression in emotional outbursts. Sympathies and antipathies are equally intense. The mental life swings between periods of exaltation and depression alternating with brief epochs of healthy indifference. Egoism is supreme and morality absent or perverted. This absence or perversion is often concealed under the guise of moral superiority, religiosity or cant. Vanity and jealous suspiciousness are common. The intellect and temper are exceedingly irregular. Monotonously feeble, scanty ideation passes readily into seeming brilliance even to the extent of hallucinations. These last ideas are barren as a rule because generated so rapidly as to destroy each other ere they pass into action. Energy fails ere aught can be completed. The inability to distinguish between desires and facts produces seeming mendacity. The will in its apparent exuberance, its capricious energy and innate futility matches and distorts the one sided talent or whimsical genius which may exist. The whole of this mental state may not be present. The tendency to introspection, to morbid fear, to gloom, to hallucinations, to alternations of depression and exaltation may occur in a degenerate child in whom has been otherwise preserved that secondary ego which is the latest and greatest acquirement of the race. Indeed much morbid energy, otherwise distorting this, may pass off through the mental channels just outlined. This seems to have been recognized by the physician into whose care Mary fell. In this confusional insane state, for it was much more than a delirium, he took her to his home where, by discouragement of introspection through rational sympathy, and childlike wholesome pleasure, she recovered. With the cruelty of ignorance Mary's mother and grandmother had suffered her to battle in silence and solitude with the phantoms of a too sensitive brain. "Polly what are those poor, crazy, moythered brains of yours thinking always" was Mrs. Field's encouraging way toward her thoughtful suffering grandchild. The words in the tale "my mother almost wholly discontinued talking to me. I scarcely ever heard a word addressed to me from morning to night," have the ring of bitter

personal experience. Mary did not imbibe any bitter feeling because of this stupid brutal insouciance. She repaid it by that self-sacrificing devotion which caused her great calamity. The degenerate absence of that finer tenderness and sympathy which constitutes human nature in its most alluring aspect eminently unfitted Mary's mother and grandmother for the training of a neurotic child. The primary *ego* usually so prominent in degenerates, while decidedly obtrusive in John, Mrs. Lamb and Mrs. Field, was wonderfully subordinate in Mary and Charles Lamb for children of such heredity. Charles was a weakly child. He had frequent night terrors, learned to speak with difficulty and stammered throughout life. Through the pleasure seeking nature of his mother, whose maternal tenderness like that of most hysterics had been exhausted on her first born, his care devolved on Mary who nursed and mothered him. This outlet for her affection naturally dispelled her loneliness. In after life she warmly described the wholesome curative influence upon her troubled mind, which devotion to baby Charles brought. As he grew older Charles repaid the debt with a love sublimely adequate to the strain of a terrible emergency. As his mind unfolded, he found in her affectionate intelligence, the same genial care that had cherished his feeble frame into health. With his little hand in hers, he first trod the Temple Gardens, spelled out the inscriptions on the sun-dial and on the tomb-stones in the old burying ground, and wondered, finding only the virtuous, "where all naughty people were buried."

The familiar features of the neurotic child appear in that auto-biographical sketch Charles Lamb contributed to Mrs. Mary Leicester's School entitled "Maria Howe or the Witch Aunt."

I was brought up in the country. From my infancy I was always a weak and tender-spirited girl, subject to fears and depressions. My parents, and particularly my mother, were of a very different disposition. They were what is usually called gay. They loved pleasure and parties and visiting; but as they found the turn of my mind to be quite opposite, they gave themselves little trouble about me, but upon such occasions generally left me to my

choice, which was much oftener to stay at home and indulge myself in my solitude than to join in their rambling visits. I was always fond of being alone, yet always in a manner afraid. There was a book closet which led into my mother's room. Here I was eternally fond of being shut up by myself, to take down whatever volume I pleased, and pore upon them no matter whether they were fit for my years or no, or whether I understood them. Here when the weather would not permit my going into the dark walk (my walk as it was called) in the garden, here when my parents have been from home I have stayed for hours together till the loneliness which pleased me so at first has at length become quite frightful and I have rushed out of the closet into the inhabited parts of the house and sought refuge in the lap of some one of the male servants or of my aunt who would say, seeing me look pale, that Maria had been frightening herself with some of those nasty books, so she used to call my favorite volumes which I would not have parted with, no, not with one of the least of them if I had had the choice to be made a fine princess and to govern the world. But my aunt was no reader. She used to excuse herself and say that reading hurt her eyes. I have been naughty enough to think that this was only an excuse for I found that my aunt's weak eyes did not prevent her from poring ten hours a day upon her Prayer Book or her favorite, Thomas-a-Kempis. But this was always her excuse for not reading any of the books I recommended. My aunt was my father's sister. She had never been married. My father was a good deal older than my mother and my aunt was ten years older than my father. As I was often left at home with her and as my serious disposition so well agreed with her's, an intimacy grew up between the old lady and me, and she would often say that she loved only one person in the world and that was me. Not that she and my parents were on very bad terms but the old lady did not feel herself respected enough. The attention and fondness which she showed to me, conscious as I was that I was almost the only being she felt anything like fondness to, made me love her as it was natural. Indeed I am ashamed to say that I fear I almost loved her better than both my parents put together. But there was an oddness, a silence about my aunt which was never interrupted but by her occasional expressions of love to me that made me stand in fear of her. An odd look from under her spectacles would sometimes scare me away when I have been peering up in her face to make her kiss me. Then she had a way of muttering to herself, which, though it

was good words and religious words she was mumbling, somehow I did not like. My weak spirit and the fears I was subject to, always made me afraid of any personal singularity or oddness in any one. I am ashamed ladies to open so many particulars of our family, but indeed it is necessary to the understanding of what I am going to tell you, of a very great wickedness which I was guilty of toward my aunt. But I must return to my studies and tell you what books I found in the closet and what reading I chiefly admired. There was a great Book of Martyrs in which I used to read or, rather, I used to spell out meanings, for I was too ignorant to make out many words, but there it was written all about those good men who chose to be burnt alive rather than forsake their religion, and become naughty papists. Some words I could make out, some I could not, but I made out enough to fill my little head with vanity; and I used to think I was so courageous I could be burnt too and I would put my hands upon the flames which were pictured in the pretty pictures which the book had and feel them. But you know, ladies, there is a great difference between the flames in a picture and a real fire; and I am now ashamed of the conceit which I had of my own courage and think how poor a martyr I should have made in those days. Then there was a book not so big but it had pictures in it and was called Culpeper's Herbal. It was full of pictures of plants and herbs, but I did not care for that. Then there was Salmon's Modern History out of which I picked a good deal. It had pictures of Chinese gods and the great hooded serpent which ran strangely in my fancy. There were some law books too, but the old English frightened me from reading them. But above all, what I relished was Stackhouse's History of the Bible where there was the picture of the ark and all the beasts getting into it. This delighted me because it puzzled me and many an aching head have I got poring into it and contriving how it might be built with such and such rooms to hold all the world if there should be another flood; and sometimes settling what pretty beasts should be saved and what should not; for I would have no ugly or deformed beasts in my pretty ark. But this was only a piece of folly and vanity that a little reflection might cure me of. Foolish girl that I was to suppose that any creature is really ugly that has all its limbs contrived with heavenly wisdom and was doubtless formed in some beautiful end though a child cannot comprehend it. Doubtless a frog or a toad is not uglier in itself than a squirrel or a pretty green lizard, but we want understanding to see it.

These fancies, ladies, were not so very foolish or naughty perhaps but that they might be forgiven in a child six years old, but what I am going to tell I shall be ashamed of and repent I hope as long as I live. It will teach me not to form rash judgment. Besides the picture of the Ark and many others which I have forgotten Stackhouse contained one picture which made more impression upon my childish understanding than all the rest. It was the picture of the raising up of Samuel which I used to call the Witch of Endor Picture. I was always very fond of picking up stories about witches. There was a book called "Glanvil on Witches," which used to lie about in this closet. It was thumbed about and showed it had been much read in former times. This was my treasure. Here I used to pick out the strangest stories. My not being able to read them very well probably made them appear more strange and out of the way to me. But I could collect enough to understand that witches were old women who gave themselves up to do mischief, how by the help of spirits as bad as themselves, they lamed cattle and made the corn not grow; and how they made images of wax to stand for people that had done them an injury or they thought had done them an injury and how they burnt the images before a slow fire and stuck pins in them; and the persons which these waxen images represented, however far distant, felt all the pains and torment in good earnest, which were inflicted in show upon these images. Such a horror I had of these wicked witches that though I am now better instructed and look upon all these stories as mere idle tales and invented to fill people's heads with nonsense yet I cannot recall to mind the horrors which I then felt without shuddering and feeling something of the old fit return.

This foolish book of witch stories had no pictures in it, but I made up for them out of my own fancy and out of the great picture of the rising Samuel in Stackhouse. I was not old enough to understand the difference there was between these silly improbable tales which imputed such powers to poor old women who are the most helpless things in the creation, and the narrative in the Bible which does not say that the witch or pretended witch raised up the dead body of Samuel by her own power, but as it clearly appears, he was permitted by the Divine will to appear to confound the presumption of Saul and that the witch herself was really as much frightened and confounded at the miracle as Saul himself, not expecting a real appear-

ance, but probably having prepared some juggling slight-of-hand tricks and sham appearance to deceive the eyes of Saul, whereas neither she nor any one living had ever the power to raise the dead to life but only He who made them from the first. These reasons I might have read in that very book since I was older, but at that time I looked at little beyond the picture.

These stories of witches so terrified me that my sleep was often broken and in my dreams I always had a fancy of a witch being in the room with me. I know now that it was only nervousness, but though I can laugh at it now as well as you ladies, if you knew what I then suffered, you would be thankful that you have had sensible people about you to instruct you and teach you better. I was let grow up wild like an ill weed and thrived accordingly. One night that I had been terrified in my sleep with my imaginations, I got out of bed and crept softly to an adjoining room. My room was next to where my aunt usually sat when she was alone. Into her room I crept for relief from my fears. The old lady was not yet retired to rest but was sitting with her eyes half open, half closed, her spectacles tottering upon her nose; her head nodding over her prayer book, her lips mumbling the words as she had read them or half read them in her dozing posture; her grotesque appearance, her old-fashioned dress resembling what I had seen in that fatal picture in Stackhouse. All this with the dead time of night it seemed to me (for I had gone through my first sleep) what I beheld was not my aunt but some witch. Her mumbling of her prayers confirmed me in this shocking idea. I had read in Glanvil of those wicked creatures reading their prayers backwards and I thought that this was the operation which her lips were at this time employed about. Instead of flying to her friendly lap for that protection which I had so often experienced when I have been weak and timid, I shrunk back terrified and bewildered to my bed, where I lay in broken sleeps and miserable fancies till the morning which I had so much reason to wish for, came. My fancies a little wore away with the light, but an impression was fixed which could not for a long time be done away. In the daytime when my father and mother were about the house when I was then familiarly speaking to my aunt, my fears all vanished; and when the good creature has taken me upon her knees and shown me any kindness more than ordinary at such times I have melted into tears and longed to tell her of what naughty foolish fancies I had had of her. But when night returned

that figure which I had seen recurred, the posture, the half closed eyes, the mumbling and muttering which I had heard. A confusion was in my head, who it was I had seen that night, it was my aunt and it was not my aunt; it was that good creature who loved me above all the world, engaged at her good task of devotion, perhaps praying for some good to me. Again it was a witch, a creature hateful to God and man, reading backward the good prayers, who would perhaps destroy me. In these conflicts of mind I passed several weeks till by a revolution in my fate I was removed to the house of a female relation of my mother, in a distant part of the county who had come on a visit to our house, and observing my lonely ways and apprehensive of the ill effect of my mode of living upon my health, begged leave to take me home to her house to reside for a short time. I went with some reluctance at leaving my closet, my dark walk and even my aunt who had been such a source of both love and terror to me. But I went and soon found the good effect of a change of scene. Instead of melancholy closets and lonely avenues of trees I saw lightsome rooms and cheerful faces. I had companions of my own age. No books were allowed me but what were rational or sprightly that gave me mirth or gave me instruction. I soon learned to laugh at witch stories and when I returned after three or four months absence to my own house my good aunt appeared to me in the same light which I had viewed her from my infancy before the foolish fancy possessed me, or, rather, I should say, more kind, more fond, more loving, than ever before. It is impossible to say how much good that lady (the kind relation of my mother that I spoke of) did to me by changing the scene. Quite a new turn of ideas was given to me. I became sociable and companionable. My parents soon discovered a change in me; and I found a similar alteration in them. They have been plainly more fond of me since that change, as, from that time, I learned to conform myself more to their way of living. I have never since had that aversion to company and going out with them, which used to make them regard me with less fondness than they would have wished to show. I impute almost all that I had to complain of in their neglect, to my having been a little, unsociable, uncompanionable mortal. I lived in this manner for a year or two passing my time between our house and the lady's who so kindly took me in hand, till, by her advice, I was sent to this school where I had told you ladies what, for fear of ridicule, I never ventured to tell any person besides, the story of my foolish and naughty fancy.

Ere the child acquires new elements of consciousness, these create incertitude and hence fear, and in non-degenerates lead, as Sully* has shown, to pantomime of shutting out the disagreeable impression.

The suspicious gloom present in otherwised healthy degenerates, the fears of childhood described, revive an atavistic malign, occult explanation of nature. To this, victims have been offered during the 17th century in England and America, as late as the early 19th on the continent of Europe and are offered by people somewhat advanced in evolution to-day. Among the Pennsylvania Dutch the witch doctor is still a potentate. Charles Lamb, as a child, adopted in regard to witches the dogmas of judges who ridiculing the expert testimony of scientists like Reginald Scott, Zacchias and Wier decided emphatically that there must be witches because both the statute book and the Bible said so and who doubted this evidence must be an atheist. Glanvil, to whom Lamb refers, was one of those legal hammers of witches whose brutal pedantry, just described, defying the common law, reeks with human gore. The neurotic element in the Lambs at once drew Charles to these witch tales and aggravated their effect, otherwise as harmless. Ghost and witch tales do not injure healthy children. As Sully remarks:

“It is a happy circumstance in healthy children that that most prolific excitant of fear, the presentation of something new and uncanny is also provocative of curiosity with its impulse to look and examine. Even animals are sometimes divided in the presence of something strange between fear and curiosity, and children’s curiosity is much more lively than others. A very tiny child, on first making acquaintance with some form of physical pain, as a bump on the head, will deliberately repeat the experience by knocking his head against something as if experimenting and watching the effect. A clearer case of curiosity overpowering fear is that of a child who, after pulling the tail of a cat in a bush and getting scratched proceeded to dive into the bush again. Still more interesting here are gradual transitions from actual fear, before the new and strange, to bold inspection. The child who was frightened by her

*Psychology of Childhood.

Japanese doll insisted on seeing it every day. The behavior of one of these small persons on the arrival at the house of a strange dog, of a dark foreigner or some other startling novelty is a pretty and amusing sight. The first overpowering timidity, the shrinking back to the mother's breast, followed by curious peers, then by bolder outstretchings of head and arms, mark the stage by which curiosity and interest gain on fear and finally leave it far behind. Very soon we know the small timorous creatures will grow into bold adventurers. They will make playthings of the alarming animals and of the alarming shadows too. Later on still perhaps they will love nothing so much as to probe the awful mysteries of gunpowder.

One palliative of these early terrors is the instinct of sheltering, of refuge-taking. The first manifestations of what is called the social nature of children are little more than the reverse side of their timidity. A baby will cease crying at night on hearing the familiar voice of mother or nurse because a vague sense of human companionship does away with the misery of the black solitude. A frightened child probably knows an ecstasy of bliss when folded in the protective embrace of a mother's arms. Even the most timid children never have the full experience of terror, so long as there is within reach that secure base of all their reconnoitring excursions, the mother's skirts. Happy those little ones who have ever near them loving arms, within whose magic circle the oncoming of the cruel fit of terror is instantly checked giving place to a delicious calm.

Charles and Mary Lamb had no such shelter. The affectionate witch aunt was worse than none. Charles reaped the special benefit of Mary's tenderness during his attack of variola just ere the onset of the period of the second dentition. Three years later Charles passed from her care to the Christ's Hospital School, then under Boyer one of those abnormal school masters who sensuously enjoyed whipping boys. In the Lamb household the domestic outlook grew dark as soon as Mary was grown up. Her father's faculties received a shock and her mother became a hysteric paralytic. At fifteen Charles left Christ's Hospital to take up the burdens of an adult. Mary had not only to make head against sickness, helplessness and old age but to support the family by millinery. She employed herself thus from the age of twenty-one to thirty-two.

When Mary was thirty and Charles twenty, the father, fallen into dementia, had been pensioned off by his employers. Charles, under the stress of puberty, of an unfortunate love affair and of his struggles to support the family neglected by the pet John, became so insane as to require hospital care. He wrote to Coleridge therefrom:

My life has been somewhat diversified of late. The six weeks that finished last year and began this, your very humble servant spent very agreeably in a madhouse at Hoxton. I am somewhat rational now and don't bite anyone. But mad I was. And many a vagary my imagination played with me, enough to make a volume if all were told. My sonnets I have extended to the number of nine since I saw you, and will some day communicate to you. I am beginning a poem in blank verse. Coleridge, it may convince you of my regard for you when I tell you my head ran on you in my madness as much almost as on another person who I am inclined to think was the more immediate cause of my temporary frenzy. The sonnet I send you has small merit as poetry; but you will be curious to read it when I tell you it was written in my prison house in one of my lucid intervals.

TO MY SISTER.

"If from my lips some angry accents fell,
Peevish complaint, or harsh reproof unkind,
'Twas but the error of a sickly mind
And troubled thoughts, clouding the purer well
And water clear, of Reason; and for me
Let this my verse the poor atonement be,
My verse, which thou to praise wert e'er inclined
Too highly, and with a partial eye to see
No blemish. Thou to me didst ever show
Kindest affection: and wouldst oftimes lend
An ear to the desponding love sick lay
Weeping my sorrows with me, who repay
But ill the mighty debt of love I owe
Mary, to thee, my sister and my friend,

He was able to resume his usual labors as clerk in the India House after six weeks treatment. The psychosis was that unstable type of melancholia so frequent in degenerates, in which flashes of exaltation through the emotional gloom are remembered with keen rapture. Anent these Lamb felt like Horace's "Happy Madman."

He when his friends at much expense and pains
Had amply purged with hellebore his brains
Came to himself. Ah cruel friends, he cried,
Is this to save me? Better far be dead
Than thus be robbed of pleasure so refined
The dear delusion of a raptured mind."

Lamb looked back on his insanity at times "with a gloomy kind of envy, for while it lasted he had many, many hours of pure happiness. Dream not, Coleridge, he writes, of having tasted all the grandeur and wildness of fancy till you have gone mad." No sooner was Charles recovered than John met with a serious accident. Whilst in health he had carried himself and his earnings to more comfortable quarters he did not fail to receive home nursing causing renewed anxiety to his brother and sister. This was the last ounce, Mary, worn out with years of nightly and daily attendance upon a demented father and a hysterically paraplegic mother, harassed by a close application to millinery, had been obliged to take an apprentice but was strained beyond physical endurance and worn down to a state of extreme nervous misery. About September 15, 1796, the family observed mental symptoms which had so increased by Sept. 21, that Charles early in the morning sought but failed to find Dr. Pitcairn. That afternoon Mary, seized with a sudden frenzy, snatched a knife from the table, pursued the apprentice when her mother interposing was stabbed, dying instantly. Mary was totally unconscious of her act, Aunt Hetty fainted with terror. The father was too feeble in mind for aught but confused impressions. Charles alone confronted the horror of the scene. After the inquest Mary was placed in a private insane hospital where she in a short time recovered. Such a combination of depressing factors constituting a proper aetiological moment would suffice, even in an organization with little or no morbid heredity, to produce a serious transitory frenzy without consciousness of the violent act. About twenty years ago I observed the following case:*

The patient, a 23-years-old single dressmaker had had maternal ancestors liable to "rush of blood to the head," from which the great-grandfather, grandfather and grand-uncle died. I saw this patient accidentally while called by her brother to attend the mother, who was suffering from the premonitory symptoms of cerebral congestion. The daughter had been watching her mother very faithfully for

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two nights and was much worn out. She had a quarrel with her betrothed an hour before my arrival, after which she went up stairs to work at a dress which had occupied her for two days but which she found had been placed near the fire and two live coals had fallen on it. She burst into a violent rage, tore the dress to pieces and then attempted to smash the furniture. She was secured by her sister, but continued violently excited for the next hour at which time I saw her. Then she was in a condition of frenzy, said I was so dark I must be the devil and made two attacks on me. Other than this she did not display any evidence of delirium or hallucinations but was very destructive and required constant watching. I ordered her to be wet packed in a sheet and an enema given her. In the course of an hour she fell into a deep sleep, on awaking from which two hours after, she was perfectly herself but had no recollection of anything after her discovery of the dress being spoiled. She was very much ashamed, of the language addressed to me, having been told of it by her sister rather injudiciously. She had been previously a very good tempered girl and had never before given vent to such a violent fit of anger. Just previous to falling asleep her hands became very turgid, but by the time she awoke this condition of things had disappeared.

Mary as will be seen later, had had from time to time after puberty slight mental disorders whose morbid nature she recognized but whose explosion she was able to prevent by exercise of will power. The recurrence of these untreated, established by a natural law of the nervous system the periodicity her psychosis later assumed. In his letters to Coleridge, Charles thus refers to her:

My poor dear, dearest sister, the unhappy and unconscious instrument of the Almighty's judgment on our house, is restored to her senses; to a dreadful sense and recollection of what has passed, awful to her mind and impressive (as it must be to the end of life) but tempered with religious resignation and the reasonings of a sound judgment which, in this early stage, knows how to distinguish between a deed committed in a transient frenzy, and the terrible guilt of a mother's murder. I have seen her. I found her this morning calm and serene; far, very far, from an indecent forgetful serenity; she had a most affectionate and tender concern for what has happened. Indeed from the beginning, frightful and hopeless as her disorder seemed I had confidence enough in her strength of mind and

religious principles to look forward to a time when even she might recover tranquillity.

Again he says of her:—

Mary continues serene and cheerful. Though I see her almost every day yet we delight to write to one another for we can scarce see each other but in company with some of the people of the house. I quote from memory what she wrote: I have no bad terrifying dreams. At midnight when I happen to awake, the nurse sleeping by the side of me, with the noise of the poor mad people around me, I have no fear. The spirit of my mother seems to descend and smile upon me, and bid me live to enjoy the life and reason which the Almighty has given me. I shall see her again in heaven; she will then understand me better.

Subsequently he says:—

My sister is quite well, but must not, I fear, come to live with us yet a good while. In the first place, because at present, it would hurt her, and hurt my father for them to be together; secondly, for a regard to the world's good report, for I fear tongues will be busy whenever that event takes place. Some have hinted, one man has pressed it on me, that she should be in perpetual confinement. What she has done to deserve, or where is the necessity of such hardships I see not, do you?

After one year Mary was released to her brother Charles. It has been remarked by superintendents of insane hospitals that the soundest mental background of a family has often been placed under hospital care because of acute attacks while the most intrinsically egotistic insane member remains at large to annoy the community with "sanity." The Lamb family proved no exception to this rule. The egotistic John, to the tender nursing of whom, the mental break down of Mary was due, had the incredible brutality to suggest that she be confined in perpetuity to the criminal department of Bethlem. Charles Lamb with wise foresight but with deep charity even for John, writes this proposal:

I know John will make speeches about it, but she shall not go. The good lady of the madhouse and her daughter, an elegant sweet behaved young lady, love her and are taken with her amazingly. And I know from her own mouth she loves them and longs to be with them as much. Poor thing, they say, she was but the other morning saying she knew she must go to Bethlem for life; that one

of her brothers would have it so but the other would wish it not, but be obliged to go with the stream, that she had often, as she passed Bethlem, thought it likely, "Here it may be my fate to end my days" conscious of a certain flightiness in her poor head oftimes, and mindful of more than one severe illness of that nature before. Let me not leave one unfavorable impression on your mind respecting my brother. Since this has happened he has been very kind and brotherly but I fear for his mind. He has taken his ease in the world and is not fit to struggle with difficulties nor has he much accustomed himself to throw himself into their way. His language is already, "Charles you must take care of yourself, you must not abridge yourself of a single pleasure you have been used to, etc., in that style of talking." But you, a necessarian, can respect a difference of mind, and love what is amiable in a character not perfect. He has been very good but I fear for his mind. Thank God I can un-connect myself with his and shall manage all my father's moneys in future myself if I take charge of Daddy. This poor John has not even hinted a wish at any future time even to share with me. The lady at this mad-house assures me that I may dismiss immediately both doctor and apothecary retaining occasionally a composing draught or so for a while and that there is a less expensive establishment in her house where Mary will not only have a room but a nurse to herself. You know by economy how much more even I shall be able to spare for her comforts. She will, I fancy, if she stays, make one of the family rather than one of the patients. The old and young ladies I like exceedingly and she loves them dearly and they, as the saying is, take to her very extraordinary, if it be extraordinary that people who see my sister should love her. Of all the people I ever saw in the world my poor sister was the most and thoroughly devoid of the least tincture of selfishness. I will enlarge upon her qualities poor dear, dearest soul in a future letter for my own comfort for I understand her thoroughly. If I mistake not, in the most trying situation that a human being can be found in, she will be found. (I speak not with sufficient humility I fear but humanly and foolishly), she will be found I trust uniformly great and amiable.

The form of the first attack of Mary was a melancholia with frenzy so intense as to destroy consciousness almost as completely as epilepsy. As it developed on a neurotic background it, like the psychosis of Charles, passed albeit

more permanently into states of exaltation. Anent her insanity, Charles Lamb remarks:—

Her ramblings often sparkle with brilliant descriptions and shattered beauty. She would fancy herself in the days of Queen Anne or George I. and describe the brocaded dames and courtly manners as though she had been among them in the best style of the old comedy. It was all broken and disjointed so that the hearer could remember little of her discourse but the fragments were like the jewelled speeches of Congreve only shaken from their setting. There was sometimes even a vein of crazy logic running through them associating things essentially most dissimilar but connecting them by verbal association in strange order. As a mere physical example of deranged intellect, her condition was I believe extraordinary; it was as if the finest element of mind had been shaken into fantastic combinations like those of a kaleidoscope.

Mary's insanity soon became cyclothymia through the intensification of that neuropathic swinging round the circle between exaltation, depression and tranquillity already pointed out by Krafft-Ebing. The results in Charles Lamb who had just such a type ere puberty completion, treated, as all such cases should be, early, significantly demonstrate the beneficial influence of early insane hospital care. To Charles Lamb's regular, unworrying, systematic employment in the India House, together with the safety valve of emotional play in his literary incursions, added to his early treatment have been ascribed, and in no small degree rightly, his escape from the fate of Mary. In both there was a sound mental background. In both, the secondary ego survived had heredity to an astonishing degree. Mary, under a terrible strain during puberty, finally broke down under the combined burden of bread winning, of nursing a paralytic hysteric, a dement and a nagging degenerate, into a cyclothymiac whose insanity lasted half a century. Had John Lamb and his wife been sent to a good insane hospital; and John Lamb, Jr., to a good general hospital; both of which even then were plenty in London, Mary would have been saved the years of suffering resultant on that misplaced hurtful tenderness which treats the insane at home. Of Charles Lamb's heredity there remained in after life,

stammering and paroxysmal attacks of migraine replaced at times by inebriety but in no small degree due to irregularities of diet partly owing to dietetic absurdities, then prevalent. His essay on "Roast Pig" is significant evidence of these last. Many of Lamb's letters display that gourmand rather than gourmet tendency which often aggravated his nerve symptoms. For forty years thenceforth Charles and Mary were to lead a life of mutual tenderness adorned by literary work eminently scholarly and humorous in the best Ben Jonson sense of delicate wit tempered by pathos. The Tales from Shakespeare do not read like the joint production of a sufferer from migraine and a periodically violent lunatic. No Nordau could assail the "Essays of Elia" as the realism of a degenerate. Nor in the tales for children is there aught mawkish or fetichly occult. Indeed these discourage all such tendencies. The literature produced by Charles and Mary Lamb was eminently sane and wholesome. It is of interest to note that neither Charles or Mary Lamb retained that fear of an insane hospital so characteristic of the imperfectly recovered insane. The recurrent insanity of Mary Lamb witnessed repeated pilgrimages from house to insane hospital by brother and sister. The first trusted her to medical care without dread. The original obligation that he should place her under hospital care when required was rigidly complied with by both. This arrangement Charles Lamb was not able to effect without difficulty, as there was considerable opposition to her discharge, but he satisfied all by his solemn promise that he would take her under his care for life. He kept his word, and many pleasant, very pleasant years they passed together though frequent returns of the psychosis, often made necessary confinement. During the intervals of her malady, Mary amused herself and assisted her brother in literary labors, writing poetry and letters to friends. She also superintended the domestic affairs of the house, and largely contributed to the enjoyment of the renowned suppers of the "Lambs."*

*Memorials of Charles Lamb by Thos. Noon Talford.

Of her periodic mental disturbance Charles Lamb, May, 1833, two years ere his death and nearly four decades after its onset, presents the following picture:

Mary is ill again. Her illnesses encroach yearly, the last was three months, followed by depression most dreadful. I look back upon her earlier attacks with longing. Nice little durations of six weeks or so, followed by complete restoration, shocking as they were to me then. In short, half her life she is dead to me and the other half is made anxious with fears and lookings forward to the next shock. With such prospects it seemed to be necessary that she should no longer live with me, and be flustered with continual removals; so I am come to live with a Mr. Walden and his wife who take in patients, and have arranged to lodge and board us only. They have had the care of her before.

In February, 1834, he thus describes her condition:

It is no new thing for me to be left to my sister. When she is not violent, her rambling chat is better to me than the sense and sanity of the world. Her heart is obscure, not buried; it breaks out occasionally; and one can discern a strong mind struggling with the billows that have gone over it. I could be nowhere happier than under the same roof with her. Her memory is unnaturally strong; and for ages past, if we may so call the earliest records of our poor life, she fetches thousands of names and things that never would have dawned upon me again, and thousands from the ten years she lived before me. What took place from early girlhood to her coming of age principally live again (every important thing and every trifle) in her brain with the vividness of real presence. For twelve hours incessantly she will pour out without intermission, all her past life forgetting nothing, pouring out name after name to the Waldens as a dream; sense and nonsense, truth and errors huddled together; a medley between inspiration and possession; what things we are.

Talfourd states that when in December, 1834, Charles Lamb died, his sister was mercifully in a state of partial estrangement, which, while it did not wholly obscure her mind, deadened her feelings so that as she gradually regained her perfect senses she felt as gradually the full force of the blow, and was the better able calmly to bear it. For awhile she declined the importunities of her friends that she would leave Edmonton for a residence nearer Lon-

don where they might more frequently visit her. He was there asleep in the old church-yard, beneath the turf near which they had stood together and had selected for a resting place. To this spot she used when well to stroll out mournfully in the evenings, and to this spot she would contrive to lead any friend who came in the summer evenings to drink tea and went out with her afterwards for a walk. At length, as her illness became more frequent and her frame much weaker she was induced to take up her abode under genial care at a pleasant house in St. John's Wood where she was surrounded by the old books and paintings and was frequently visited by her reduced number of surviving friends. Repeated attacks of her malady weakened her mind but she retained to the last her sweetness of disposition unimpaired. She died May 20th, 1847.

As Talfourd remarks, little could any one, observing Miss Lamb's habitual serenity of her demeanor, guess the calamity in which she had partaken or the malady which frightfully chequered her life. She described herself on her recovery from the first attack as having experienced while it was subsiding such a conviction that she was absolved in heaven from all taint of the deed in which she had been the agent such an assurance that it was a dispensation of Providence for good though so terrible, such a sense that her mother knew her entire innocence and shed down blessings upon her as though she had seen the reconciliation in solemn vision, that she was not sorely afflicted by the recollection. It was if the old Greek notion of the necessity for the unconscious shedder of blood polluted though guiltless to pass through a religious purification, had in her case been happily accomplished so that not only was she without remorse but without other sorrow than attends on the death of an infirm parent in a good old age. She never shrank from alluding to her mother when any topic connected with her own youth made such reference in ordinary respects natural; but spoke of her as though no fearful remembrance was associated with the image; so that some of her most intimate friends who knew of this disaster believed that she had never become aware of her own share in its horrors. Tal-

found erroneously thinks it still more singular that in the wanderings of her insanity amidst all the vast throngs of imagery she presented of her early days, the picture never recurred or if ever not associated with shapes of terror. But the acts of a frenzied melancholiac with dulled consciousness are rarely remembered.

Miss Lamb* would have been remarkable for the sweetness of her disposition, the clearness of her understanding and the gentle wisdom of all her acts and words, even if these qualities had not been presented in marvelous contrast with the distraction under which she suffered for weeks, latterly for months in every year. There was no trace of insanity discernible in her manner to the most observant eye; not even in those distressful periods when the premonitory symptoms had apprised her of its approach and she was making preparations for seclusion. In all its essential sweetness, her character was like her brother's, while by a temper more placid, a spirit of enjoyment more serene she was enabled to guide, to counsel, to cheer him; and to protect him on the verge of the mysterious calamity from the depths of which she rose so often unruffled to his side. To a friend in any difficulty, she was the most comfortable of advisers the wisest of consolers. Hazlitt used to say that he never met with but one woman who could reason, and had met with only one thoroughly reasonable, the sole exception being Mary Lamb. She did not wish, however, to be made an exception to a general disparagement of her sex; for in all her thoughts and feelings she was most womanly keeping under even undue subordination to her notion of a woman's province, an intellect of rare excellence which flashed out when the restraint of gentle habit and humble manner were withdrawn by the terrible force of disease. Though her conversation in sanity was never marked by smartness or repartee, seldom rising beyond that of a sensible quiet gentle woman appreciating and enjoying the talents of her friends, it was otherwise in her madness.

It is a singular comment on the "new woman" cant of

*Talfourd's *Life of Charles Lamb*.

the present day that the narrow conventionality of the early 19th century, more brutally restrictive in England of women of the middle class than at any period before or since in English speaking countries, should have restrained healthful expression of intellectual power undoubtedly contributing thus to the recurring mental breakdown of Mary Lamb. Certainly had she found an unrestricted outlet in remunerative literary labor in lieu of parsimoniously paid millinery, her intellect would have been preserved at a most critical time, and her relatives would have been much better cared for. The cant which would restrict intellectual women to household duties, much better performed by the large mass of starving working women, seems as much a waste of energy as that which would employ a watchmaker in making horse-shoes. It is also a singular illustration of the persistence of brutal cant, that the same primitive spirit of revenge which called for the perpetual imprisonment of Mary Lamb, should call to-day for the similar imprisonment of insane homicides irrespective of the nature of the case. The same beneficent spirit of justice which, in the common law, distinguishes between the homicide committed in the heat of passion and the deliberate murder, would compel a distinction between the homicide of acute states of dazed consciousness and the homicide of the epileptic or of the chronic insane. The one is an isolated phenomenon not likely to be repeated, the other is always an imminent possibility. The common law in this respect needs no amendment, but judges and the community need more instruction as to what law and justice are. The two careers of Mary and Charles Lamb illustrate how even under the burden of inherited degeneracy and the no less terrible strain of an environment entailing a fierce struggle for existence, a large amount of soundness of intellect and of morality may survive. They also illustrate the beneficence of physiologic atavism causing continual attempts to regain a normal type lost for some generations. In Charles Lamb's career there is much to indicate that had dietetics been as well understood then as to-day much of his sufferings and so-called eccentricities might have been avoided. The childhood of both Mary and

John Lamb illustrates how readily in minds of degenerates or of persons at a certain state of culture the germs of unwholesome atavistic beliefs are created to form the basis of much that proves absurd and even dangerous in after life despite careful education subsequent to puberty. The two cases also illustrate very fully, since both Charles and his sister were ardent students of the older English dramatists, and the older English literature how much wholesome-ness there lies in this as contrasted with works on emotional religion or dogmatic theology. Charles and Mary were both unquestionably devout but with a certain largeness of view which proved a source of mental hygiene in place of a poison like most dogmatic theology and religiosity. Undoubtedly Mary's religious views tended to comfort her when she discovered that she had slain her mother during a fit of insanity. Her mental state, however, differed decidedly from that moral anaesthesia produced in certain insane by a hospital sojourn which makes them so delightfully altruistic within the walls and so brutally egotistic without. Charles Lamb's mental breakdown which occurred at the decidedly critical period of puberty illustrates the benefit of hospital care and the folly of home treatment.

DISCUSSION.

In the discussion Dr. Bannister remarked that Charles Lamb regarded his failings which he mentions himself, as pathological, Dr. Bannister considered Lamb as many times at least somewhat on the borderland of insanity. "I think that was the case; is that not so, Dr. Kiernan?"

Dr. Kiernan: The only marked psychic abnormalities were his drinking fits and these might be considered pathologies because they sometimes took the place of fits of migraine when he was very much depressed.

Dr. Bannister: The other point was the state of mind in which Mary Lamb and her brother kept, considering the family history, the degenerative taint in the family. I think, though, that this is less uncommon than would be

supposed. I have in mind a case somewhat similar to Miss Lamb's where a lady killed her husband and so injured her son that he was maimed for life. Here was a case of homicidal mania at all times when among home associations; in the hospital she never manifested any of those traits. She had undoubtedly a perfect consciousness of her past and knew about the event that had sent her there. She had been sent home several times, but each time the homicidal mania had again seized her, and she finally died in the hospital after about twenty-five years' residence there. She was an optimist, she had the most amiable disposition, was very much beloved, though three weeks at her home would bring out homicidal tendency and make her unsafe. I have noticed the same thing in one or two other cases. The lack of egotism in the insane is not so uncommon either, there are many cases, especially chronic cases where the altruism of the patient is most marked. I would suggest in order to get Dr. Kiernan's opinion that the state of mind in which Charles Lamb and his sister were, the cheerful, helpful state you might say, in itself had possibly something pathological in it, something a little abnormal. Would a person thoroughly normal, remembering the facts and fully appreciating the family history have been exactly as they were? Was there not some emotional anæsthesia in this case.

Dr. Kiernan: I did not dilate on a number of interesting points in the paper because I thought these might be covered by the discussion. In the first place the lives of both these noted characters in literature impressed me after careful study, somewhat different from what they seem to have impressed Dr. Bannister. The cheerfulness to which he refers as pathological seemed to me rather the expression of a comparatively sound mental state resulting possibly from atavistic factors. Certainly I have studied a good many of so-called periods of degenerates and should be very much inclined to agree with Dr. Bannister that a large number of seemingly sound periods are decidedly abnormal. Here however, the sound periods were marked by phenomena that were exceptional in other degenerates. The

fact that Charles Lamb and the sister with about the same type living in the world, not in an asylum, were able to recognize the morbid nature of their insane acts and also to recognize the chief defect underlying it, seems to me to indicate a degree of freedom from egotistic logic that could only pertain to a sound mental state. Now I do not say that Lamb was strictly speaking free from what might be called mental defects during the long life that passed after the first attack but these were the confused and irritable states due to migraine and they were often replaced by inebriety, but between these periods which he was able to control, Lamb was decidedly sane in his intellect. A large number of the insane or degenerate, or the hereditarily defective take the ground that genius must be a neurosis and thereby exalting or palliate their deficiencies. While it may be admitted that genius can occur in the neurotic and that one-sided genius may be an expression of that defect which shows itself in consequence of atrophy to a certain extent, still at the same time that class of beings will not recognize any possibility of the difference between the greater genius and insanity. But should one read Lamb's essay on the sanity of true genius and not know anything about his mental state, know nothing of his family history, the first impression that it would make would be precisely the same that it made on me, that the man must be entirely sane. Go through his essays carefully, there will be found a mental balance that from the degenerate standpoint is remarkable. Compare his essays with any of those of the great degenerates and the soundness is somewhat astonishing. The lack of egotism is wonderful in comparison with the dour egotism and misoneism of the sane Carlyle. Go through Lamb's whole literary career and the insanity is not expressed at all. In that particular he differs very markedly from others. De Maupassant for example, wrote his last novel practically under the charge of Dr. Blanche. He unconsciously reproduced a whole chapter from a former work and used that as the ground work of a new novel which was decidedly insane apart from that chapter. Cowper shows the abnormality to a remarkable degree. Take "The

Castaway" with its extreme gloom and one would deem the man a melancholic. His intensely humorous "John Gilpin's Ride" seems the product of an exalted period. Many a man in his exalted period would have as ridiculous images as there were depressed ones in "The Castaway." Take even a writer like Lucretius. Here is a materialist, a free thinker, a man who believes in evolution. He is stricken with insanity, part of his poem is composed in that condition and the man goes back to the lumber room of fetichism treating of the astral body and ghosts remaining around places of murder as if these were natural phenomena. Here are traces of the man's defect but in Lamb's work we can find none. Even if Nordau's method be applied none could be found. Nordau finds in the natural odors, that Zola describes (in connection with a particular scene whose description must be expected in a realist which is an expression not of the man's own individuality but of the environment he is picturing) an evidence of the peculiar abnormal liking for odors of the idiot. But even considering things thus there can not be found in the Essays anything abnormal. On going through Lamb's Tales of Shakespeare, and those sound stories told for children no one would ever be led to remember the mental characteristics of the writers. The Tales of Shakespeare are excellent without being goody-goody for children. It seems to me, therefore, that the mental states of both brother and sister, in what was called the sound period, was comparatively healthy.

With regard to the question of drunkenness. Considering the era, the fact that Charles sometimes lapsed, that inebriety sometimes took the place of the migraine period is not astonishing. It is to be expected. It was the famous period when most everybody was a drinker; it was the era that wound up with the opposite extravagance of the Neal Dow period. I can remember relics of that era when I was a boy of ten in the districts that are now free from any contamination of alcohol theoretically; where the room of the country grocer had its bottles with medicinal mixtures, gin and tany, or gin and wormwood, (which would correspond ideally with absinthe) and there were the usual

drinks besides. That was fifteen years after Mary's death. Before that, according to Hawthorne's picture, New England was in a heavy drinking period. In England just up to about the forties men prided themselves tremendously on being three bottle men, that is, on being able to drink three pints of wine at a sitting and a man was not thought very much of who was not a three bottle man. So the occasional lapse was hardly a defect because it corresponded to the environment. In dealing with these defects this must be taken into consideration.

The career of the two are interesting from the standpoint of training children. If Charles Lamb had been properly trained, in all probability he would have gone through life without that attack and without probably anything but a slight tendency to migraine or something of that kind. Certainly Mary would have broken down under that strain if there was a sufficient aetiological moment, without any taint at all. Of course in the periodical condition crops out the insane taint and furthermore in the irregular circular condition. Take a child of the stamp, these two have depicted themselves with a tendency to terror, and a tendency to look at everything from the standpoint of terror and give them a good sensible mother or substitute for the mother the relative who comes and takes Mary away for a restful period in the country, substitute such a person for the mother, and the probability is that both of those children could have been favorably brought up. The two careers teach a more optimistic lesson than that usually received from degenerates.

TIC CONVULSIF REPLACING SUPRA- ORBITAL NEURALGIA.

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C. K. is thirty-two years of age and is married. His previous health history is good. He has had no venereal disease, and has been temperate.

The mother of the patient had a twitching of the left side of the face when 52 years of age. The spasms are described as frequent but not continuous. This spasm lasted for four years and then ceased as suddenly as it began. The spasms were not accompanied by pain. Six years after the spasms ceased she began to have pain in the left side of the face, this was preceded by vertigo, which was aggravated by movement. The facial neuralgia when it first began was referred to the teeth which were all extracted without relief to the pain. About two years ago the infra-orbital nerve was resected which has been followed by relief from the more severe attacks of pain. There is some static ataxia and vertigo is increased when lying down. Hearing is 50 per cent. better in the left ear than the right.

This patient's illness began in 1887 when he suffered severely from supra-orbital neuralgia. The attacks would last from one to four weeks and he thinks they were brought on by taking cold. After five years the attacks of pain ceased and the spasms began in the left eyelid, at first they were few in number but they gradually increased in severity and extended so as to involve all the muscles of the face. They have not affected the muscles of the neck. The spasms are

severe lightning like and the contractions succeed each other rapidly. The whole side of the face is distorted when the spasms are on. In the interval no change can be noted in the appearance of the face. The patient states that at the moment the spasm begins, there is a feeling as though there were cotton in the left ear. The progress of the disease has been variable for weeks, the spasms would be frequent and severe, again they would be rare and of short duration. The disorder had become markedly worse during the past five years.

There is no central nervous disturbance. Sensation of the face and inside of mouth normal. The facial reflex is present and not exaggerated.

The eyes were kindly examined for me by Dr. Alfred Hinde. He reports the visual fields, color sense and eye-grounds normal. Vision right eye 20-20, left eye 20-30. Left slightly hypermetropic but not improved by glasses. The external muscles balance perfectly. There is diminished accommodation for his eye (+3.75 D) the same in both eyes. This loss of accommodative power which is equal to that of a man 43 years of age, Dr. Hinde thinks, is due to a weakness of the ciliary muscle not connected with the tic.

Taste and movements of tongue are normal. Hearing is equal in both ears. Some of his teeth in the left upper jaw are decayed. The electrical reactions are normal and the same on both sides.

An interesting point in this case is the direct heredity. The only other reference in the literature I have been able to find, is that reported by Rosenthal (Diseases of the Nervous System, page 199) of the case of a mother, son and daughter and two other maternal relatives who had the disease. Another is the relation of pain to the disorder. The mother's tic was succeeded by a severe facial neuralgia. The interval between the two disorders was about six years. In the boy the tic was preceded by attacks of supra-orbital neuralgia lasting five years which gradually subsided as the tic became more pronounced,

THE OCCIPITAL LOBE AND MENTAL VISION.*

By J. SOURY, M. D.

THESE articles, investigating comprehensively the relations of the retina, the optic path, and the occipital lobe to the completed visual act, comprise the best short summary of our knowledge of this subject that we have seen. The author treats his theme under two heads. He follows the path of the visual impression first from the retina to the primary sub-cortical centers, and second, from the primary optic centers to the cortex of the occipital lobe (the calcarine region and cortical retina). Concerning the intimate construction and physiology of the optic nerve, he says, "the optic path as a whole runs from retina to cortex, but contains two parallel systems of conductors (a) centripetal, (b) centrifugal in direction (Ramon y Cajal)". The former arise in the axis-cylinder prolongations of the large cells of the retina. They arborise freely with the protoplasmic expansions of the principal groups of nerve cells in the external geniculate bodies and pulvinar of the optic thalamus. From the intercalary cells of these ganglia other axis-cylinder processes traverse the posterior end of the internal capsule, continue as the white sagittal substance (or optic radiations of Gratiolet), and end in the nervous feltwork of the fifth (and third) layer of the occipital cortex. There a new system of neurons forms connection with the

**Brain*, Autumn, 1896 (from *Revue Philosophique*, January, February and December, 1895; February and March, 1896). Abstract by Dr. Wendell Reber in *Annals of Ophthalmology*, April, 1897.

other cells of the cortex, more particularly with the giant solitary cells.

The centrifugal fibers start with the axis-cylinder processes of the pyramidal cells of the cortex, and arborise with the nerve cells of the superficial gray matter of the anterior quadrigeminal tubercles. The processes from these ganglia again terminate in the nervous feltwork of the retina. The giant solitary cells of the occipital cortex are found to atrophy after section of the posterior segment of the internal capsule.

Clinical evidence shows that lesion of the anterior quadrigeminal bodies is not essentially injurious to vision, but that it does involve disturbance of the eye movements and of pupillar innervation (Monakow). In the lower animals, even in certain mammals, these ganglia are of main importance to vision, as compared to the external geniculate bodies and pulvinar of the thalamus. The fibers which they contribute to the optic tract in man are relatively insignificant, though the iridic reaction appears to be governed by these bodies. Mendel's detailed experiments point to the ganglion habenulæ as the precise center of the pupillary reflex. Iridectomy seems to invariably produce atrophy of this ganglion. M. therefore defines the path of the reflex as optic nerve and ganglion habenulæ of same side, thence by posterior commissure to nucleus of Gudden and so to the fibers of the oculomotor trunk.

The visual acuity of the macula is said, by Soury, to depend upon the delicacy with which each cone transmits its excitation to a bipolar cell, this again to one protoplasmic arborisation of the ganglionic layer. The autonomy of the macular region persists throughout the optic nerve to the cortical centers; and the preservation of central vision in the majority of cases where (as in hemianopsia) the entire visual cortex is destroyed on one side, indicates that each macula is connected with both hemispheres. The importance of the sub-cortical centers must be remembered. They are the ganglia of origin for the optic nerve—the posthouse where impressions conveyed by the retinal fibers are transmitted to other couriers.

In regard to the cortical center of vision, M. Soury adopts the position of Henschen, stating that the visual area is much more extended than the centers for sensations of light and color. Late anatomical methods have thrown more light on the functions of the nerve centers. Thus it has been shown that in cases of blindness involving widespread degenerations the geniculate bodies alone are in direct relation with vision. The fibers of the optic nerve which pass into the pulvinar of the thalamus, the anterior quadrigeminal bodies and the temporal and the parietal lobes are not visual.

Degeneration of the pulvinar produces no hemianopsia when the geniculate body is intact. The anterior quadrigemina may submit to grave lesion without any disturbance of vision. The pulvinar and quadrigeminal bodies are possibly reflex optic centers—in man they probably do not contain a single visual fiber. The geniculate bodies alone are in relation with vision, lesion of them invariably producing hemianopsia. Certain forms of sub-cortical hemianopsia may indeed be accompanied by pulvinary lesion, but the latter is not causative, it is only coincidental. The actual cause of blindness is lesion of the external geniculate body. Destruction of this ganglion determines an almost total disappearance of the bundle of Gratiolet, through which pass the visual fibers from the ganglion. The symptoms which originate from the thalamus are quite different, *e. g.*, motor troubles of expression—imitative, involuntary, automatic, etc. In man, the anterior quadrigeminal tubercles are equally deprived of the importance which Griesinger attributes to them in vision. In fact, the optic lobe in man is no more than a reflex center. Nor has the inferior parietal lobule or angular gyrus any more direct relation with vision.

The anatomical structure of the calcarine cortex (though differing from the rest of the occipital lobe, not merely in the thickness of the molecular layer, but also in its development of horizontal fibers forming the band of Vicq d'Azyr) is not special to the fundus of the fissure. The same extends for several m. m. along the two lips of the calcarine fissure, the superior of which belongs to the cuneate, the inferior to

the lingual lobe. It is to be expected that such identity of structure in either convolution should result in identity of function, and Hun adduces a case in which atrophy of the superior lip of the calcarine fissure produced hemianopsia of the inferior quadrant of the visual field on both sides. Wilbrand shows that the lower lip corresponds with the upper visual field. There would thus appear to be projection of the retina upon the cortex of the occipital lobe, as contended by Munk and disputed by Monakow. Henschen accepts it and proposes the name of "calcarine retina" for the part of the cortex of this fissure at which, according to him, there is a projection of the elements of the peripheral retina, via the visual fibers of the optic nerves chiasm, tracts, and optic radiations. The macular bundle, though lateral in the papilla of the optic nerve, is certainly central in the chiasma and tract. The central and peripheral portions of the cortical retina would lie in the anterior and posterior parts of the cortex of the calcarine fissure (Henschen). Sachs, on the other hand, has a case which does not correspond with this somewhat restricted cerebral localization of the macula lutea. Both Henschen and Wilbrand believe that each half of either macula lutea is in connection with both cerebral hemispheres, while the macular fibers also undergo partial decussation in the chiasma and are divided into direct and crossed bundles.

The preceding observations refer to the "cerebral retina," and not to the much larger region of the "visual area," which is the anatomical substrate of mental vision. While the region on which visual impressions are projected is very limited, that corresponding with visual representations is vast, and may very likely involve the convexity of the occipital lobe and the angular gyrus. The seat of perception and of representation occupy distinct positions on the occipital and parietal lobes. Nothing is certain, however, beyond the fact that there is a cortical center of visual perception, and that its lesion entails cortical hemianopsia.

Soury joins Monakow in emphasizing the importance of the primary optic centers interposed on the optic path, such

as the external geniculate body (in which the majority of the visual fibers terminate and lose their individuality), a fact too often overlooked in schemata, which are constructed as if the projection bundles radiating over the visual sphere were the direct prolongation of the optic fillets. This has important bearings upon the doctrine of retinal projection (*supra*). The anatomical conclusion appears to be that not the retinal fibers, but the fibers of the external geniculate body are projected upon the occipital lobe. Soury and Monakow disallow the direct localized projection of impressions from the macula lutea on the cortex, Soury's theory being that the macula fibers are distributed to all parts of the external geniculate body, and thus transmit their impressions to every part of the cortical center. This would account for the partial preservation of central or macular vision in most cases of cortical hemianopsia.

M. Soury concludes from all these facts relating to the cortical localization of bilateral homonymous hemianopsia, that Ferrier is mistaken and Munk correct in their respective views concerning the cerebral center of vision. Munk attributes the transitory hemianopsia consequent on the extirpation of the angular gyrus to the inflammatory reaction of the occipital lobe, and especially to the compression (not destructive lesion) of the optic radiations of Gratiolet and Wernicke which pass under the angular gyrus and inferior parietal lobule on their way to the cortex from the external geniculate bodies. It is thus that all lesions of the angular gyrus, etc., usually reach the projection bundle of the visual fibers. Should this be destroyed and the message thus interrupted from the last sub-cortical station to the occipital cortex, nothing can avert absolute cortical, hemianopic blindness in the two halves of the retina implicated.

The Civic Duties and Responsibilities of the Physician to his Community, State and Nation.*

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THE closing days of the 19th century are characterized by a feverish activity in all departments of learning unsurpassed in any previous period of the world's history.

Perhaps in no department is this more conspicuous and striking than is found associated with the science of medicine. In its voluminous annals there never was a time when it was capable of scoring so many brilliant victories over the enemy, death, and its allied forces as the present. Indeed so remarkable has been the changes that our very proficiency is already threatening us with dire disaster and our greed for scientific development and attainment has become so very morbid that it is actually furnishing the means for our own suicide.

Moreover the medical profession taken as a whole was never in a more perturbed and unsettled state or more envious and jealous of each other's welfare than now.

Hence the former respect and influence which not only characterized but was willingly granted the profession by the laity, has gradually been withdrawn, until to-day the practice of medicine is simply regarded by them, as a mere business, trade or commercial calling.

*Read by title before the Missouri State Medical Association, May 20, 1897, at St Louis, Mo.

In view of such facts it is fitting that we take time to enquire into some of the causes which has led up to this unfortunate state of affairs and see if we cannot devise some means or methods to regain our former social prestige and standing, beside elevate our ethical standard toward each other.

In the past the doctor was recognized in every community as the most influential citizen in addition to his purely medical skill and knowledge. While this may possibly be true in some notable exceptions to-day, yet they are so very rare that the great mass of our profession in every city and community have not as much relative influence and importance as formerly. Indeed the term "Doctor" has become so very common and its application abused to such an extent that the dignity and respect which formerly belonged to our profession has lost much of its significance and value.

In tracing the earlier history of our country it is surprising to find the power and influence wielded by the members of the medical profession in every community.

Whenever a step in advance was contemplated the doctor was invariably appealed to for his wise counsel and support and the name of some honored member of our profession was associated with every local movement in which the community as a whole were interested.

Closely allied to him were members of both the professions of law and theology and much of what we are to-day we owe to their united efforts.

But who can deny the fact that the three so-called learned professions have lost much of their former social prestige and standing, and to-day they do not enjoy the same relative importance and influence they once did. More especially is this true of the medical profession taken as a whole, although undoubtedly there are notable exceptions to this common rule.

It is interesting, therefore, at this juncture to listen to a layman's criticism and see ourselves as viewed through the public eye, for after all it is to persons outside of our own ranks that we must mainly depend for our support and

their advice should certainly be of some interest and value to us in the correction of our mistakes.

For this purpose I cannot do better than call your attention to some remarks made by no less a person than Mr. Cleveland, ex-President of the United States, in his recent speech to the members of the New York Academy of Medicine, in which he justly criticises our present methods and undertakes to give us good reasons for our present deterioration, and certainly he is in a position to know something of our failures as well as our successes.

After paying a very graceful tribute to the village doctor of fifty years ago, he adds: "The village doctor was not only our physician but he was a man of influence in all the neighboring affairs. In every matter of importance that concerned the good of the community, he was at the front. He was president of the village or represented his town in the county board of superiors and if he was ever late in visiting his patient, it was because he lingered at the post-office to discuss the political situation. Thus he joined with the performance of professional duty, a discharge of the obligation of citizenship. We cannot but think that the discoveries and improvements in medical practice which we now enjoy are dearly bought if the members of the profession in their onward march have left behind them their sense of civic obligation and their interest in the general public welfare. While thus suggesting the need of your influence in legislative circles for the accomplishment of reforms related to your profession, you will, I hope, permit me in conclusion to enjoin upon you the duty of an active and general interest and participation in public affairs for the promotion of your country's good in all its phases. Never did patient need your medical treatment more than the body Politic now needs the watchful care of your patriotic and disinterested citizenship."

You will observe that the burden of Mr. Cleveland's remarks is to the effect that as a profession we are sadly deficient in our civic duties and responsibilities to our community, state and nation. In other words, we are in a certain sense, disloyal citizens, that our greed for scientific

attainment consumes all our time and causes us to become intensely selfish, hence we forget all about our obligations as citizens, that we take no interest whatever in public affairs unless it be for individual, financial benefit, that the large and generous public service, which was formerly a marked characteristic of our professional life has entirely been withdrawn and if by any chance we are found in the field of politics it is largely for individual revenue.

I trust in quoting these remarks of Mr. Cleveland's and commenting on them in this way that I may not be accused of urging upon the physician the necessity of becoming politicians in the commonly accepted sense of the word, far from this, for if there is anything that I despise more than another it is the doctor who is more proficient in politics than medicine and who can always find time to attend political gatherings but has never been known to attend a medical convention much less read or write a medical essay.

But there is a sense in which every physician should become known as a politician, by taking especial interest in public affairs which directly pertain to his obligation as a citizen and no amount of professional pride or interest in his special scientific work should rob him of this great duty. It is not only expected but required of every American citizen that he be willing to bear his share of the public burdens and take an active participation in the body politic, and physicians form no exception to this recognized duty. That we as physicians fall short of our duties and privileges in this direction is idle comment and much of our present deterioration is undoubtedly due to this very cause. Hence the criticisms of not only Mr. Cleveland but others who make the same accusations, are in my opinion just and fully deserving and it behooves us, not only as citizens, but as physicians, to become more generous in the public service of our community, state and nation.

In the general administration of public affairs, there are sociologic problems presented in every community which appeal to the knowledge and best interest of every department of life.

Many of these are of a purely medical character and require the very best talent in our profession to solve them correctly. Unfortunately many of the more important of these are wholly ignored and allowed to pass by from year to year on the principle that what is everybody's business is no one's business. Others are referred to very incompetent persons and when the verdict has been rendered, we look at each other and cry shame. For instance, in our own city the personnel of the county court consists of three non-medical men and yet often some of the most perplexing questions pertaining to insanity and other medical questions are necessarily referred and left entirely to their judgment for solution. As well might you ask a layman to detect endocarditis who had never listened to the normal heart sounds, as to expect these gentlemen to solve such difficult medical problems arightly.

Then again the education of our children demands the interest and attention of the medical profession, for I am convinced that public school education ought not to be left solely in the hands of the pedagogue; but that it has a medical aspect of the highest importance. For instance, it has been demonstrated beyond a doubt that the medical output of the pupil is directly related to his height, weight and physical measurements and that there is a physical basis for precocity on the one hand and mental dullness on the other. Many a child is compelled to sacrifice its constitution for what is now deemed its educational necessities.

In a paper (see *Neuropathic Constitution and Education as a Factor in the Causation of Nervous Diseases*) which I read before the local medical society four years ago, I called attention to the fact that it was my firm conviction that a wisely selected medical board should be appointed in every city and town whose duties should be to visit the public schools and inspect the pupils and determine their physical condition as well as their capacity to study, beside pass on the sanitary condition of the building. This statement which at the time was received in the light of a joke, nevertheless, strange as it may appear, was actually put in practical operation, inside of twenty months, in no

less a place than the so-called center of American culture, viz., Boston, and to-day it affords me pleasure to present a few extracts from the first report just issued of the medical inspection of Boston public schools. The schools were visited daily and all the children who complained of illness or who appeared ill were examined.

"For fourteen months ending December 31st, 16,790 pupils were examined, 10,737 of whom were found to be ill; 6,053 were found not to be ill and 2,041 of these were too ill to remain in school for the day. There were 77 cases of diphtheria, 28 cases of scarlet fever, 116 of measles, 28 of chicken-pox, 69 of pediculosis, 47 of scabies, 47 of mumps, 33 of whooping cough and 8 of congenital syphilis in children, sitting in their seats and spreading these diseases to other children. The remaining 10,372 sick children were suffering from a large variety of diseases."

"These results justify the work so far and show the need of extending it." A corps of medical inspectors sufficiently large to permit an intelligent physician to spend at least a few minutes daily in every school room, would detect many cases needing attention, yet not apparent to the teacher. Much of the sickness and enfeebled state of school children is due to the condition of their school rooms.

New York City has also lately followed in the wake of Boston by appointing medical inspectors of public schools for the purpose of reducing the number of contagious diseases. Now I contend that what is good for Boston and New York is good for St. Louis and Kansas City, indeed every large or small city all over the country and it is our business to insist upon its enforcement.

Then again in state medicine very little interest is now taken by our profession in matters which are purely medical and we can hardly expect our legislators to formulate and pass laws, the necessity of which they are largely ignorant of. It is our business and duty to inform them and call their attention, say for instance, to the needs of certain of the helpless and afflicted classes who by virtue of their ailments are unable to help themselves.

In a paper (See *Medical Review*, St. Louis) read before

the state association three years ago, I urged the necessity of state provision being made for the helpless class known as the feeble-minded. All present agreed that it was a great and growing necessity but like many other similar questions, no steps were taken to secure it. In this state alone there are at least one thousand of these poor, afflicted, feeble-minded children who are not only burdens to themselves, but also to those who are now compelled to care for them. The majority belong to families who are too poor to properly provide for their comfort. What is sadly needed in Missouri is a home for these poor creatures furnished by the state. It is to the medical profession that they naturally look for aid and support and it is our duty to champion their cause and insist on the needed state provision being made for them. Moreover, special state provision for epileptics have been for some time a recognized need in this state.

There are at least two thousand helpless epileptics in Missouri who instinctively turn to us for sympathy and help. Modern medical science teaches us that the state insane asylum is no suitable place for the confinement of such patients. What is sadly needed is a home specially provided for their exclusive care. Many states of the union have already made such provision and Missouri can well afford to be as humane and philanthropic as other states.

In recording one need after another, I fear you will accuse me of asking too much at one time but this is simply a sad reflection on our past negligence of duty. Our interest in these helpless invalids is only aroused spasmodically and then the attack does not last long enough to accomplish anything. Mr. Cleveland strikes the key note of our true situation when he says; "If laws were needed to abolish abuses which your professional investigations have unearthed, your fraternity should not be strangers to the agencies which make the laws. Let me also remind you of the application to your case of the truth embodied in the homely injunction, 'If you want a job well done do it yourself.' If members of your profession were oftener found in our national and state legislature assemblies ready to advocate

the reformatory measures you have demonstrated to be necessary, the prospect of your bestowal upon your fellow-men of the ripened results of your professional labor would be lighter and nearer."

How much plainer could the truth be stated to us by one who knows our serious dirilection of civic duties? The recent failure of the state board of health to gain legal recognition for the enforcement of an advanced standard of medical education is a sad reflection on our waning power and influence and is simply a glaring illustration of how completely we are at the mercy of shrewd politicians and the willingness with which we succumb to such shameful treatment.

On the other hand the legal indorsement of quackery shows at once what can be done by paying heed to Mr. Cleveland's advice, for this was undoubtedly accomplished by political influence and proves conclusively the great and growing need of adding to our list of standing committees in our state society, a special one on medical legislation whose duties should be to look out for the possible enactment of such laws by statesmen who are more or less ignorant of their true motive or merit or even fraudulent basis.

To be of value such a committee should be furnished with all the authority and power to employ proper counsel to defend ourselves from such impositions and the expense attached should willingly be granted from the general fund or subscribed pro-rata by the membership of this association. While we deplore the inroads made on the sanctity of our profession by such intruders, I am one of those who believe that we as a profession can assert enough power and influence even yet in Missouri, to counteract any such legislation, providing we act as a unit, and I believe we can secure for ourselves any needed reasonable legislation that we indorse as being worthy.

Another illustration which aptly pictures our present political weakness was the recent appointment of Homœopaths to take charge of the state insane asylum at Fulton, Mo. This movement called forth at the time more interest than is usual among the profession but in spite of the

vigorous protest by ourselves and others the governor of this state proceeded to appoint a homœopathic staff, thus wresting from us one of the oldest institutions of the state. In making this statement I do not intend to convey the idea that I am opposed to homœopaths treating the insane, but in view of the fact that our state insane asylums are now to some extent at least overcrowded, this could easily be obviated by appropriating sufficient means to found a new insane hospital for the exclusive use of the homœopathic physicians.

The present action of the governor is even more deplorable when we remember the relative strength of the two medical bodies in the state. Out of about five thousand physicians less than four per cent. are homœopaths. No wonder the laity loses confidence in our importance and doubts our ability to even maintain our own cause. This gross lack of interest in public affairs is also largely the responsible agent for the present unsettled condition of the medical profession and leads up to the formation of all kinds of un-professional conduct and shady schemes in which shrewd business men often hire out physicians as it were, under cover of charity while many of the more ethical members of our profession look on in amazement and regret that such things could ever exist. Time will not permit further enlargement of the many civic duties we owe our community and state but I cannot close this paper without a brief reference to a duty we owe as citizens of this glorious republic, to our nation.

It has been long conceded that the medical profession could materially enhance its usefulness as a public benefactor if it was properly represented in not only municipal and state affairs but also those of the nation. It has been suggested therefore, that we insist on recognition by urging upon those who have the power to create a National Medical Bureau like that of law; and thus insure for the science of medicine a place in the national cabinet. In this connection I cannot do better than emphasize the wise counsel offered by our friend, Dr. C. H. Hughes, of St. Louis, in a recent issue of the ALIENIST AND NEUROL-

OGIST, when he says: "As a physician, a practitioner of the healing art, a teacher of medicine in school and with journal, I dare to proclaim that the wisest and best thing that this government can do, both for its present and future welfare, for its perpetuity and growth among the nations, the most powerful, most beneficent and grandest of governments, would be to create a Bureau of Sanitation, not merely to keep out foreign epidemics of contagious diseases, but for psychical and physical sanitation of the many forms of diseases of the mind and body known to the science of modern medical progress, and recognize the profession of medicine as it does that of law, of agriculture and arms, by giving the most distinguished and capable of its votaries a proper and deserving place in the cabinet of the nation."

In thus calling your attention to a subject which seems to me both proper and timely, I do not wish to be understood as considering myself called upon by you to advocate reforms, nor do I expect you to act upon any suggestions which I may have made, unless they appeal to your better judgment, for it must be confessed that they embody problems that are not easy of solution. Yet we must remember that all forward movements are attended with opposition and I take it this will form no exception, as there are always men to be found in our profession who are ever ready to antagonize any step in advance, whether they understand the questions at issue or not, but facts are stubborn things and it takes but little insight to recognize the woeful indifference manifest by our profession in civic matters which are of a purely medical character, and it is the purpose of this paper to try and enlist your united interest and support in formulating some means or methods by which to overcome our seeming indifference and thus regain for ourselves the power and influence which properly belongs to our noble calling.

The Medico-Legal Aspect of Eroto-Choreic Insanities.*

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C. V. aet. 13, school girl, over active mentally, has chorea, third or fourth attack, possibly a masturbator. A neighbor physician, who knows something of the family, states that he feels sure she is. Several cousins have had chorea and a number are strabismic. Some of the aunts have been nervous. There is an extensive history of consumption in the family. Patient attending school. On—day of—189—she went to the school house after school hours to get her books. The Principal of the school was at his usual evening work in his office. Pupil asked information concerning some algebraic examples, which was given, after which she returned home. On the next morning before starting to school she told her mother that the Principal had thrown her down and ravished her. The father and mother, after careful examination, stated positively that they thought it not to be so, and dropped the matter after a statement by the Principal. In the meantime the little girl told some of her girl friends that she may have dreamed it all, that it might not have been so, all of which was testified in court. Six months later disinterested parties in a distant county through vindictiveness in another matter, had the Professor indicted for rape. He (the Professor) had

*Read before the Section on Neurology and Medical Jurisprudence of the American Medical Association, at Philadelphia, June 2nd, 1897.

some enemies on the school board, although the majority testified in his behalf. In court the girl's evidence amounted to an assault only. She admitted that she had dreamed during the night that the Professor had assaulted her mother completing the object of his purpose. The Professor gave a clear, concise statement, unshaken by cross-examination. The judge in his charge to the jury stated that the Professor had given a very clear statement, which had been unshaken by cross-examination and that the pupil had failed by her own evidence, to sustain her charge, but added, "that if we always believed the defense we would never convict." The jury brought in a verdict of assault with intent to rape.

Immediately following this I addressed these queries to a number of the leading Alienists and Neurologists:—

1. Have you known a case of chorea insaniens to have gotten any one into the courts through charges of rape? If so, please give particulars.

2. Have you known girls thus afflicted to have been masturbators or nymphomaniacs?

3. In the voluptuous dreams of such a patient could he or she have been so firmly impressed by the dream that it would have been looked upon as a reality by the patient and so state under oath in court?

4. Would a man run any risk of being criminally accused if he were associated with girls thus afflicted in places favorable to such accusations?

The following replies were received:—

I am unable to give you any information in answer to your questions concerning chorea insaniens. I have thought over the matter for several days but have not been able to find anything that would help you.—F. X. DERCUM.

1. Not personally. 2. Very many insane girls are masturbators. 3 and 4. Possibly.—H. C. WOOD.

In the only case of chorea insaniens that I have seen, there were no evidences of sexual disturbance. Answering your fourth question, I should think a man would run the risk of accusation under favorable circumstances by any sort of girls, choreic or otherwise. I should fancy, however, that courts would be very cautious about giving credence to the testimony of patients such as you refer to.—GEORGE H. ROHE.

1. No. 2. No. 3. We cannot have positive knowledge on this point, as no one can know whether a person believes what he says he believes except the person himself. There seems to be strong evidence, however, that a sexual dream may be so vivid as to make the subject believe she has had sexual congress. 4. A man would run a risk of being criminally accused if he should associate with girls thus afflicted (with nymphomania) in places favorable to such accusations.—CHARLES W. BURR.

In answer to your first and second questions I would say, no; to the third question, I would say that among that class dreams are realities, and these people have vivid imaginations and they would be able to make any statement even under oath in court. Of course we must take what they say with much "salt." In answer to your fourth question, I would say that the man runs every risk of being accused, and my advice to him would be to give such patients a wide berth. Women should be the physicians to this class and not men, as simply stated it is this—the doctor places his reputation in the hands of a class whom the public are always ready to believe.—MARTIN W. BARR.

I send you, in answer to your questions, a paper of mine on the general subject, in which on page 132 of the April number you will find references of service. If you will consult Spitzka on insanity you will find references covering your second question. Specifically I should answer to your first question, yes. In answer to your second query, I should reply that I believe this to be the case as a rule. In answer to the third, I would reply, yes, and a fact generally recognized by alienists. In answer to the fourth question, I would state, this danger has been recognized generally by most physicians who have practiced any length of time. You will find references bearing on your questions in the second volume of both McLane Hamilton's Jurisprudence and that of Witthaus. The affirmative to your questions have so long been recognized as true by even jurists that I am astonished to see the questions raised.—JAS. G. KIERNAN.

To the first I answer, no.

To the second, I have known insane persons, male and female, to have been masturbators, and female insane to have been nymphomaniacal.

To the third, yes; I have known erotic dreams of the night to become the erotic delusions of the day and the patient offering to be qualified before God and all the angels and insisting on prosecution of the wrong doer and protection from him. Such persons appeared sane enough to impress their insane delusional convictions as truth on the non-expert and *prima facie* on the psychiatric expert, if the patient's environments had been those of sane persons outside of a hospital for the insane. Such a person would undoubtedly so state in court.

To fourth, yes; he would run the risk of being criminally assaulted if he were associated with a girl thus affected, that is a girl greatly nymphomaniacal and of course insanely and irresistibly erotic under ordinary environments. I have had such an attempt made upon myself in a hospital for the insane and never after went into the private presence of the patient

or of such patients, that is in their rooms, without being accompanied by an elderly matron or ward attendant in order not to arouse the erotic morbid impulse.

He might on another time, if a morbid aversion should seize such a person for having had her approaches and caresses unreciprocated or from other of the many imaginary causes peculiar to the insane, be liable to false and criminal accusations of the patient.

Sometimes "Hell hath no fury like a woman scorned" under such circumstances, especially if the woman be nymphomaniacally insane at the time. The *odi et amo* alternates in these persons as in the sane, though in a more intensified and less regulated degree. Any man who has to do with nymphomaniacs runs the risk of unfounded criminal accusations, especially medical officers of asylums for the insane. They run especial risks of being ruined by them in reputation in the esteem of those who do not understand them, and the wisest plan is always to meet such patients with a chaperon. Their dreams do not always "presage joyful news at hand" for the helpless superintendent who meets them without vindicating witnesses.—C. H. HUGHES.

On the subject of Chorea Insaniens, I quote, "Chorea Insaniens occurs at or soon after puberty, or as the result of pregnancy. In milder cases there are merely delusions of a slight form, and the patient has extreme loquaciousness," etc.* Berkeley records a case in which, among other things, he found under the surface of the clitoris "an elevated and excoriated non-indurated sore." [Possibly a masturbator.]

Clouston says that "early youth is the common time for chorea." Gowers says that "it occurs chiefly in females at or soon after puberty, or during pregnancy." Again, "mental disturbances are rarely absent in chorea. Insanity develops more frequently during chorea than is usually supposed."† Also Putzel reports several cases of masturbation among female choreics; "*if masturbators, they may have been nympho-maniacs as well.*" (Italics mine). The subject of this report was at or near the independent natural growth of the reproductive organs; near the time of reflex action upon the mind of these bodily changes, an inherent quality of immaturity. Just at the time the new desires, sentiments and passions are awakened by the development of these new functions. The motions and passions at this time are also in great force; the time when the Judgment

*Wharton Sinkler, *Dercum's Nervous Diseases by American Authors.*

†Putzel.

is only taking; a time when the controlling influence was weak; a climacteric that completely overshadows the menopause. In looking up the delusions of choreic insanity, I find mentioned by Putzel, McLane Hamilton and others, a number of cases. These cases were mostly girls. A delusion almost always present, that men were around. In one exception only, those exhibiting the delusion were girls.

Take these cases plus nymphomania and we have a very dangerous combination. I have known nymphomaniacs to assault men on a number of occasions. One in particular I refer to, assaulted at one time one of the medical officers of the institution, at another, the Superintendent and finally, the writer. These assaults were all within the building and due to her highly sexually excited condition. Again I have known nymphomaniacs to interpret dreams (or nocturnal delusions) as realities. A young lady believed that one of the medical officers of the institution visited her nightly and had to do with her. His mode of access was to come up the hot air flue and enter through the register. Hence, if a dream (for dream it must have been) can impress the unbalanced mind so firmly, may it not have been that this little girl might have had some such delusion? Owing to the fact that she said nothing until the next morning, that she confessed to the court that she had dreamed during the night that the Professor had assaulted her mother and that she told a number of her schoolmates that it might have been a dream—all this from a neurotic, choreic, mentally over-active child—to say the least, we should take it *cum grano salis*.

The author on the witness stand averred that such may have been the case (and from a full account of the case, and a history of the patient, past and present, of the family and relatives by the family physician, he has faith in the statement), but the opinion was ruled out as irrelevant.

SELECTIONS.

NEUROTHERAPY.

HYOSCYAMINE FOR PARALYSIS AGITANS.—The experience of Dr. Chalmere, of Chicago, as given in the *New York Medical Journal*, is that every one of these well-marked cases is a sufficient warrant for a test of hyoscyamine in similar cases. The first case was that of a clergyman where the shaking of the head and the right upper and lower extremity had been on the increase for four years.

A drop of solution of hydrobromate of hyoscyamine, two grains to the ounce, was put into the eye. In twenty minutes the shaking had entirely ceased and at the end of three quarters of an hour speech was difficult and the patient was unable to rise from his chair. This partial paralysis gradually disappeared, there being no return of the shaking for several hours. In this case as in the other, the use of a solution of one grain to the ounce was sufficient, applied at stated times to keep the patient entirely comfortable. Even a temporary relief obtained without injury to the system will be hailed with gratitude.

IN WHAT CASES OF INSANITY IS THYROID EXTRACT USEFUL?—Dr. C. L. Dana (*Can. Prac.*) reported at a meeting of the Practitioners' Society, New York, a case of insanity cured by the thyroid extract. The patient, a young lady, unmarried, aged 28 years, with no especial neuropathic taint in the ancestry. One older brother had Basedow's disease, from the age of 35 to 39, when he was cured and remained so. One younger sister had hysterio-epilepsy; a second brother is of a nervous temperament, and suffers from insomnia; and another sister had attacks of migraine. The duration of her mental trouble, which commenced with a mild form of confusional insanity, was

two years. On account of the steadily progressive character of the trouble and the apparent evidence of serious degenerative changes coming on in the brain the question finally arose whether an operation for the removal of the ovaries should not be attempted as an experiment, although the pelvic organs had been carefully examined and found perfectly normal.

Dr. Dana advised that before attempting any such operation the patient be placed upon the thyroid extract and to push the drug to the point of tolerance. She had been previously treated with the thyroid extract but without any results. Treatment was commenced by administering five-grain thyroid tablets beginning with 15 grains a day and gradually increasing the dose until she was taking 60 grains a day. At the end of two weeks, symptoms of improvement appeared, and at the end of three months she had become thoroughly sane. She talks intelligently and coherently, has no delusion, and writes a sensible, well worded letter.

The improvement has been so striking and progressive and so definitely associated with the use of the thyroid, that there can be no doubt as to its being the cause of the change. The fact that a brother suffered from Basedow's disease in a very typical way is a curious illustration of what might be called a thyropathic tendency in the family. He thought the cases of insanity in which the thyroid extract proved beneficial probably were cases in which there were some derangement of the thyroid gland.

In the discussion which followed, Dr. F. P. Kinnicutt said he believed the treatment of insanity with thyroid extract had not been very encouraging, and therefore, the case reported was the more interesting. He thought the very fact that in a large majority of cases the treatment was without effect, while now and then it was so strikingly successful, would indicate that in the latter the trouble was probably connected with diminished or perverted secretion or function of the thyroid gland. It was known that there might be interference with the function of the gland and that structural change might even exist without any ana-

tomical signs being detected during life. He repeated that it seemed fair to assume that in the cases of insanity in which the extract was of benefit there was destruction or perversion of function in the thyroid gland.

PSYCHIATRY.

THE CASE OF SPURGEON YOUNG—DEATH DUE TO HYPNOTISM BY UNSKILLED AMATEURS.—An important question, alike of medicine and of law, in other words, a question in the interesting field of medical jurisprudence, arose and received elaborate consideration in the recent autopsy over the body of Spurgeon Young, before the coroner and jury of Chautauqua County, N. Y. The deceased was a colored lad, seventeen years of age, and the scope of the inquiry touching his death, was "how far it was due to or traceable to his condition, as affected by the repeated placing of the lad in a hypnotic state, by hypnotizers who are not skilled in the matter, and in which, it was thought, that he sustained physical injuries which might have incited the disease of which he died." The expert medical opinions submitted and the conclusions reached are embodied in a paper read before the Medico-Legal Society of New York, on February 20, 1897, by the Hon. Clark Bell, vice-chairman and secretary of the Psychological Section of said society.

The inquiry as to the physical or pathological effects of such hypnotism took the form of a hypothetical question submitted in writing by the coroner to a number of the leading medical jurists of the country. This hypothetical question, which is lengthy, stripped of much of its detail of diagnosis, was whether, "in a case of a youth, seventeen years of age, who had for approximately six months been a chronic 'sensitive subject,' having been protractedly and repeatedly hypnotized many times by amateurs and irresponsible and reckless youthful dabblers in hypnotism,—would physical injury or organic impairment, directly or indirectly, follow from the psychic or emotional disturbances

or derangement of nerve function, involved in or due to, the morbid innervation incident to such hypnotic practice, or experimentation in 'mesmerism' or alleged animal magnetism?"

With one exception, the unanimous voice of the scientists was that such experimentation and hypnotizing is vicious and dangerous. This consensus of expert opinion may be summed up as expressed by the Hon. Thomson Jay Hudson, LL.D., of Washington, the learned author of "The Law of Psychic Phenomena," who is regarded as a high authority in the whole domain of "hypnotic suggestion." In his exhaustive reply he sums up by saying, "In my opinion, there could be but one inevitable result, namely, a shattered nervous organism, leading eventually, if life is prolonged, to imbecility or insanity." He further says, "I have been led to believe that there are few bodily diseases that may not be produced by abnormal, mental and nervous conditions. 'Who will pretend to assert that any tissue of the body is beyond the range of nervous influence?'" Says Prof. W. Xavier Sudduth, that such hypnotic suggestion is "fraught with grave dangers. * * * Those who practice them should be held criminally liable." The distinguished alienist of St. Louis, Dr. Charles H. Hughes, whose repute is world-wide, declares that: "The repeatedly hypnotized subject becomes a more or less changed man as compared with his normal state, and to this extent, is in an insane state of mind with this difference from the ordinarily insane person, that his change of mental character is chiefly subject to the directing influence of another person rather than to his own perverted and abnormal volition, as is the case with the ordinary insane person. But he may become as insane and diseased in brain as an ordinary lunatic." And so say with one accord the whole venire of medico-jurists.

They were of opinion, as expressed by Dr. Buck, that "the practice is harmful under all circumstances except in the hands of skillful physicians for the treatment of disease, and even then in a narrow range of diseases and with doubtful results. In all other cases it is dangerous, and

should be suppressed by law and with severe penalties." And so the coroner's jury returned, concluding their verdict: "We would recommend that the state legislature pass a law prohibiting the practice of hypnotism."

There exist in St. Louis empirics who advertise "Hypnotism taught in * * * lessons;" these constitute a public danger and should be subjected to the police power.—Joseph Wheless in *American Law Review*.

SYPHILITIC MELANCHOLIA.—Dr. E. E. Spitzka, of New York, in a paper read before the New York Academy of Medicine discussed (*University Med. Jour.*) the diagnosis between genuine melancholia and a somewhat similar condition observed in the initial period of syphilitic dementia. The true melancholiac was sad because he could not be anything else; the other was depressed because he was unable to attend to his business and suspected that his friends realized this. The former suffered from insomnia while the melancholiac of the initial period of syphilitic dementia slept perfectly through the night and often also through the day. The true melancholiac was universally neglectful of his dress? The other was very particular about certain parts of his dress and negligent about other portions. The true melancholiac shrank from company, the syphilitic melancholiac was irritable and his symptoms varied greatly from day to day. The syphilitic finally drifted into a condition in which slight but characteristic changes in the medulla oblongata were found. The diagnosis was important because proper treatment in the early stage might prove radically remediable. In his experience the common error had been that of too exclusive reliance on the iodides. His own initial treatment was always with mercury, preferably by inunction. These patients were usually over 45 years of age, and suffered from renal insufficiency.

F. R. Sturgis, of New York, thought that these patients often threatened suicide, but seldom attempted it, for in syphilitics the power of coming to a decision was lost. Their melancholia developed apparently from totally inadequate causes, and they often exhibited sudden alternations

from extreme depression to a more natural temper. Unquestionably, mercury was the mainstay in these cases, but the iodide played an important part, because its action was very much more rapid than that of mercury; it would often hold in check the more serious subsequent symptoms, and the rapid improvement that it caused in the symptoms often settled the diagnosis. The time and the doses of an iodide were the most important points in the successful treatment of nervous syphilis. From 300 to 600 grains of potassium iodide in the twenty-four hours would make all the difference between failure and cure.

L. D. Bulkley indorsed the views of Dr. Spitzka to the value of a certain amount of mercury with the iodide of potassium. It accomplished the same result with a greatly diminished dose of iodide. It was his custom to prescribe inunctions, or one or two mercurial baths a week, along with the use of the iodide internally. Williams said that, if in these cases of melancholia the temperature remained subnormal the greater part of the time for several successive days, practitioners were justified in suspecting late syphilis. Absolute rest in bed from three to six days was important, and during this time it would be found that the temperature would gradually rise. D. F. Sherman also indorsed the view that it was important to use mercury in liberal doses, along with the iodide. Spitzka had intended to state that these syphilitics often contemplated suicide, but only actually committed it on the impulse, and without premeditation. Although gastric irritation was quickly produced in ordinary persons by large doses of iodide, in the cases under discussion very large quantities of the iodide not only were tolerated, but often seemed to act like a charm.

COMMITTEE ON DISEASES OF THE MIND AND NERVOUS DISEASES.—A. W. Hoisholt, of Stockton, chairman of the committee, read a report entitled, "Some Statistical Observations on the Subject of the Etiology and Symptomatology of Dementia Paralytica." After giving a few facts connected with the history of the disease from its first notice

by Willis, in 1672, to the publication of Prof. Mendel's monograph, "*Die Progressive Paralyse der Irren*," in 1880, and stating the modern views as to the pathological anatomy of general paralysis, the author gave the results of his study of 69 male paralytics, who had been inmates of the Stockton asylum between April 1, 1890, and April 1, 1897. Of these, 50 had died, 19 were still inmates. During the first five years, 42 had been received, of whom 2 only were still living. Of the remaining 27 cases, 10 had died. The average percentage of paralytics to all cases (1,342) of insanity admitted (excluding readmissions) was 5.13 per cent., which is low compared with the reports from European asylums, and is probably due to the difference in the character of the cases admitted, which in the Stockton asylum would tend to increase the number of admissions without adding correspondingly to the number of general paralytics. The proportion of female to male paralytics in the state asylum was 1.35 per cent. to 5.13 per cent., or 1 to 3.8, which corroborates reports from most asylums. As regards nativity, 33 were Americans, 36 foreigners; of the latter, 1 was Chinese, a percentage of 1.09 of the total first admissions of Chinese (91), which would seem to show that general paralysis is much more frequent among white people than among Chinese. Of the 69 paralytics, 6 were convicts, while only 36 convicts were admitted during the same period, which would give a percentage of paralytics 3.45 times greater than that found among paralytics who were not convicts. 56.25. per cent. of the 69 cases occurred in individuals between the ages of 35 and 44, the age of the greatest bodily and mental development. On the subject of etiology the author gives a resume of the modern ideas as to the relation of syphilis to general paralysis, regretting that the information on this point obtainable in this and other states of the Union was of but little value. There was a history of syphilis in his cases in 37.68 per cent. He found heredity present in 10.14 per cent., while in insanity in general there is a history of heredity in one-third of the cases. Trauma was mentioned as an occasional cause and a case was given in illustration. There was a

history of a prior attack of insanity in 2 of the 69 cases, which, however, might have been instances of remission of the disease. The average duration of asylum treatment in the 50 deceased cases was 16.74 months, which is almost exactly the same as that reported from asylums at Berlin and Hamburg in 1494 cases. This would seem to show that climatic influences and treatment have but little effect upon the course of the disease. He had examined into the question of the presence of ulnar analgesia in general paralytics, and the results of his investigation corroborate those of Cramer, Hess, Göbel, and others. He found unilateral or bilateral analgesia present in 85.7 per cent. of 21 paralytics, in 38 per cent. of 21 epileptics, and 23.8 per cent. of 21 other cases of insanity. The author then took up the mental symptoms met with in general paralysis, dwelling particularly upon hallucinations and attacks of fear, giving a clinical history of two cases in illustration. In conclusion, he spoke of the importance of the different diagnosis of dementia paralytica in its early stage, especially from cerebral neurasthenia.—*Proceedings California State Medical Society.*

CLINICAL NEUROLOGY.

NEURASTHENIA.—H. N. Rucker, of Oakland, read a paper upon this subject, which he said would deal with the special features of this ailment. Neurasthenia in early life, that is, in school children, is more sudden in its onset and more transient than in adult life. It is an almost unfailing indication of inherited nervous instability. Such children are active, ambitious, precocious, without the physical stamina to enable them to compete with their fellows. After the inevitable break down, if the medical attendant appreciates the situation, he does the best possible thing by advising that the child shall be kept from school for an extended period and provided with wholesome exercise. The speaker believed that cases of this character, especially in girls, had, heretofore, not been well understood. Another, and far larger class of neurasthenics are to be found in both sexes

between the ages of 20 and 40 years. The struggle for life during this period was at its height, hence there is a greater tax upon the nerve forces. Undue application or mental overwork, under improper conditions, will usually show their effect sooner or later in those having a predisposition to nervous instability. Rest and change from the ordinary habits of life will, as a rule, succeed in restoring man's lessened vitality. With females the result is more uncertain, as many of the consequences of nervous exhaustion tend to become permanent. Efforts made for the relief of such patients have given rise to many abuses in abdominal surgery. A third class of neurasthenics may be found in those who have passed the meridian of life, and have gone beyond the border line of final recovery, who, weighted with responsibilities too heavy to bear, then become prematurely old. Despondency ending in suicide is sometimes the result of this condition. In conclusion, the speaker said, neurasthenia, like hysteria, is an ailment of the protean type, and there is scarcely a disease which it does not, in some respect, resemble. In the treatment, rest is the all important factor, coupled with recreation in a moderate degree.

Dr. A. W. Hoisholt, of Stockton: I have listened with great interest to the paper of Dr. Rucker, and I think the subject is one that cannot be brought to the attention of the profession and of the public often enough. The hygiene, which the doctor briefly referred to, is of the greatest importance, and as the disease of neurasthenia has been termed the disease of the age, which it is, and as it is becoming more and more frequent, the proper understanding of it is important. I have seen cases in children which began as neurasthenia. The child was overtaxed at school, and, having great ambition, was unable to accomplish what it desired. The result was that doubt arose in its mind; this doubt became morbid, and finally the child doubted its ability to do anything, and became apprehensive of almost everything. Such cases become juvenile insanity. In this connection, I will again refer to what I said in my paper a short time ago, that you have in general paralysis in the

early stage what has been called the neurasthenic stage of general paralysis, in which you can have all the symptoms that the author has enumerated. The treatment that has been instituted very recently, namely, the anti-syphilitic treatment, in the early stage of general paralysis, has by some late investigators been found to have marked results on the course of the disease—they report cures. If that be the case, the important thing is to recognize that disease early, and to bear it in mind in coming across cases of neurasthenia.—*Proceedings California State Medical Society.*

INCREASE OF INSANITY AND CONSUMPTION AMONG THE NEGRO POPULATION OF THE SOUTH SINCE THE WAR—Abstract of a paper read by Thomas J. Mays, A. M. M. D. before the Section of Neurology and Medical Jurisprudence of the American Medical Association, June 3, 1897.

The *Cincinnati Lancet Clinic* gives the following very satisfactory abstract of this interesting statistical paper:

Statistics gathered from the superintendents of Southern hospitals for the insane show that both insanity and pulmonary consumption increased disproportionately among the negroes of that section of our country since the close of the civil war. Thus, according to the United States Census, there were in 1860 only 44 insane negroes in the State of Georgia; in 1870, there were 129; in 1880, 411; and in 1890, 810. In North Carolina there were in 1880, 91 colored insane; in 1885, 144; in 1890, 244; in 1895, 307; and in 1896, 270. In Virginia before 1865 there were about 60 insane negroes in the asylums of that state, and now there are over 1,000. In the Eastern Hospital for the Colored Insane in North Carolina, consumption caused 14 per cent. of the total number of deaths in 1884, while in 1895 it produced 27 per cent. of all the deaths, and this in spite of a reduced general mortality-rate. In the Mississippi Lunatic Asylum, from 1892 to 1896, consumption caused 42 per cent. of the total number of deaths among the negroes, or an increase of 22 per cent. over the death-rate from this disease among the white population outside of hospitals for

the insane (it, of course, being well known that insanity predisposes to phthisis), if the latter is estimated at 20 per cent. In the Alabama Insane Hospital during three years and nine months beginning October 1, 1890, there occurred 295 deaths among 1,700 white and negro patients. Of the 179 deaths among the white patients, 28 per cent. were due to tuberculosis, and of the 116 deaths among the negroes 42 per cent. were due to the same disease.

From this and other evidence which is presented it is concluded that both of these diseases have disproportionately increased since the war, and that in all probability the causes which led to one also led to the other disease. The writer holds that the cause of phthisis resides in a disintegrated nervous system, and cites a number of concurrent authorities, as well as clinical and pathological data, to prove his position; and, among other conclusions, he draws the following: That both consumption and insanity are closely allied, both in personal and family history, to idiocy, hysteria, epilepsy, asthma, and other diseases of the brain and spinal cord; and that they are both produced by syphilis, alcohol, overwork, business vicissitudes, domestic appointment, and excesses of all sorts—in fact, by any agent or influence which vitiates the brain or nervous system; and that those who are confronted by a new and higher civilization, and who are compelled to adjust themselves to these new relations, are excessively liable to fall victims to insanity and pulmonary phthisis.

The condition of the negro is viewed from these premises. Civilization is regarded as an accumulation of force, and the older the civilization, the greater its momentum and the higher its plane; and when a lower civilization is precipitated in the midst of a higher, like in the case of the negro, it is the throwing together of two forces which differ in power and rate of motion. The lower, in order to preserve itself, must make an effort to adjust itself to the course and changes of the higher movement, and the strain which is occasioned by this effort of adaptation falls on and vitiates the brain and nervous system, and this in turn gives rise to insanity and phthisis. The vices of

alcoholism and syphilis, which are readily acquired by these people, accelerate the advent of these diseases by destroying the integrity of the brain and nervous system.

Viewing the condition of the Southern negro from these standpoints, it is perfectly obvious why insanity should necessarily develop, and on no other grounds can we explain why consumption should follow in the wake of insanity. Those who were able to realize all the factors which would be called into activity by the environmental changes of the negro after the war could, at the time it was made, have foretold the inevitable results which are now but too plain to every one. It is in part a repetition of what happened, and now happens to the aborigines of North America, Australia, and New Zealand, who in their unequal warfare with modern civilization have been and are being fast decimated and exterminated by pulmonary phthisis.

EMOTION DYSPEPSIA.—According to Dr. O. Rosbacht Emotion Dyspepsia presents (*Berlin. Klin. Woch.*) the following features: Immediately or a few days after a fright or vehement emotion, besides nervous manifestations and muscular pain in the back and abdomen, there set in mild and severe symptoms of indigestion, aversion to food; either dryness in the mouth or excessive secretion of the saliva; pressure in the epigastric and hypochondriac regions; sensations of swelling and at times visible prominence of the epigastrium, dyspepsia, belching, flatulence sometimes colic with irregular diarrhoea. The patients feel hungry but find no flavor in the food. As a rule they are very cautious in selecting their food after abstaining from it entirely; but this is instrumental in aggravating the hyperæsthesia of the digestive organs. Voracious appetite alternates with complete loss, diarrhoea with constipation, heart burn with eructations of gas, and finally, the patient reaches an almost cachectic state. Vehement emotion occurring when the stomach is full is less injurious than when it is empty; while the consumption of a meal during emotion often gives rise to the disease in question. This affection may be diagnosed by considering the ætiology, the changeableness of symptoms, the normal gastric contents and absence of

objective symptoms in contrast to the complexity of the complaint of the patients and with their nervous temperament.

BIRTH-PALSY.—Dr. D. McDonnell defines this (*British Medical Journal*, Feb. 20, 1887) condition as paralysis caused by events taking place during or prior to delivery. The proximate cause was usually cerebral hemorrhage and the chief predisposing causes were: (1) The delicate structure of the blood-vessels in the infantile brain; (2) hyper-venous conditions of the blood; and (3) diseases of the vascular walls, especially syphilis. The principal exciting causes were trauma of the mother during gestation and prolonged or difficult labor. The symptoms were arrested mental development, various forms of paralysis (hemiplegia, paraplegia, diplegia spastica, etc.,) and morbid movements such as choreiform, athetoid, associated and polymyoclonic.

NEURASTHENIA AND GENERAL NEUTRITION.—Dr. J. T. Edes, of Jamaica Plains, Mass., states in a paper read before the American Physicians' Association (*Journal of the American Medical Association*, May 22, 1897) that gain in body weight and improvement in neurasthenic symptoms usually go together, but there are enough exceptions to the rule to show that the nervous nutrition is something more than a mere sample of the general. The more symptoms approach in character the "fixed ideas" of the insane the less amenable are they to the beneficial effect of mere somatic therapeutics. The blood color of a considerable number of neurasthenic patients corresponded quite closely with that of the employes in the same institution. It was not possible to establish any correspondence between the degrees of anæmia and the intensity of nervous symptoms. Measurements of the excretion of uric acid afford no sufficient ground for supposing that neurasthenic symptoms depend in any way upon this substance. There may be such a thing as a chronic uric acid headache, but the ordinary continued neurasthenic headache is not of this character. Indican determinations have not been numerous enough to be decisive but do not seem to indicate that the poison consists in this

substance or in those which may be transformed into it. If noma-themia is a toxic condition, the poison has not yet been satisfactorily identified. Dr. James J. Putnam remarked that noma-themic patients often looked pale and bloodless when they would have a normal amount of blood and hemoglobin. Haig's writings were attractive but they were devoid of that critical spirit which one would look for in dealing with such an important subject; there were loopholes for error in every step of his theory. Changes in metabolism are affected by the nervous system and normal and pathologic activities are immediately connected with change in metabolism. When two subjects are so closely connected it is difficult to say which is the cause or which is the effect or if it is merely a coincidence.

CONSTIPATION IN THE INSANE.—Alessi (*Journal of the American Medical Association*, May 15, 1897) finds that mental troubles are aggravated when there is constipation and improved when the functions are regular. He also finds that in the melancholic forms of insanity, the intestinal atony preceded the outbreak of the insanity, while in violent mania it follows and seems to be produced by it, as there is evidently some connection between the action of the intestines and the degree of excitability of the cerebro-spinal nerve centers. He concludes an interesting study of 90 cases with an account of a woman brought to the clinic in violent mania which had developed suddenly that day. Inquiry of her mother elicited the fact that she had not had an evacuation for fifteen days, and the administration of 80 centigrams of calomel and 60 of scammony restored her promptly to sanity, as the intoxication had not lasted long enough to impair the integrity of the nerve cells.

UNEXPECTED EFFECTS OF TRIONAL.—Dr. K. B. Herman, of Memphis, Tenn., states (*Journal of the American Medical Association*, June 5, 1897) that a patient of his took a dose of 20 grains of trional at 10 P. M. for insomnia with the following peculiar results: Shortly after having taken it he went to sleep and did not awaken until he was aroused the next morning for breakfast. Not feeling

very well, he had a cup of coffee brought to his bed. After a short while he arose and went to his office but feeling very bad he returned home about 10:30 A. M. and again lay down and went to sleep. On being aroused for dinner by the servant, his wife being away, he responded that he would be down in a few minutes, but instead he went to his club for dinner. While at the club he must have felt ill as he went into the lounging room and slept until 7:30 when he was awakened by a porter. He felt completely dazed and as if he had awakened from a horrible dream. It was some time before he could collect himself and realize that he was at the club. He was very much surprised to find himself there, as he had absolutely no recollection of having gone there, or eaten dinner or slept there. His mind was a blank from the time he returned from his office in the morning at 10:30 A. M. until 7:30 P. M., having remembered nothing he had done during that time and reporting this effect from hearsay. During this time he met several friends who say he talked and acted rationally but complained of a severe headache.

NEUROPATHOLOGY.

EPILEPSY—AUTOPSY.—Miss E. V., September 10, 1892, had her first attack. In March, 1892, she had grown worse. Her mind was more sluggish; it was difficult to carry on a conversation with her. Her emotional system was excited and uncontrollable; why, she did not know, was afflicted with insomnia, staggering gait, would trip easily, but recover herself, would grasp her head with her hands and say it felt so funny. Her enunciation was imperfect, and the laryngeal sounds were hoarse and husky, as though the cords were swelled or lacked tension. Patella reflex was exaggerated. Sensation good everywhere. She soon got so that she could not walk without assistance. She had become apathetic. When asked a question she could not answer intelligently. She would sit and look into vacancy, with a dazed, worried look and while being talked to

would fall asleep, articulation hardly intelligible, deglutition difficult, and she would frequently strangle. She had a tendency to put one or both hands on her head, and when removed she would put them back again.

Until April 2 she was able to sit up, and could be helped from bed to a seat. She was unable to articulate, and finally could not swallow anything, became insensible and helpless, and so remained until she died April 5, 1896. She at no time had fever, and her pulse was normal.

On post mortem examination a large amount of fluid escaped from the longitudinal fissure. The membranes and external surface of the brain appeared perfectly normal. A careful inspection of the base of the brain showed no abnormality that could be detected. Every part of the cerebrum, cerebellum, pons and medulla was carefully unfolded but nothing could be found abnormal except distended lateral ventricles. The distension of the ventricles was so great that the anterior and posterior cornu were entirely obliterated. The choroid plexus was thickened and congested. The tension of the fluid in the ventricles was so great that it ruptured into the longitudinal sinus when the brain was removed.—Dr. J. L. Cleveland in *Cincinnati Lancet*, Clinical Report to Cincinnati Academy of Medicine.

THE PATHOLOGY OF APHASIA.—In the Lumleian Lectures Dr. Bastian has discussed at length a subject which has occupied his attention for many years, and to which he has shown himself to be capable of doing equal justice as a clinician and a psychologist. The light thrown upon the localization of cerebral lesions by the study of their associated speech defects is very great, whatever may be our opinion as to the correctness of the theoretical conclusions arrived at by investigators. To form an adequate appreciation of the arguments of the Lumleian Lectures, and particularly of the parts in which the ordinary designations of motor and sensory aphasia are attacked, it is necessary to bear in mind the nature of the controversies which have arisen among those who have given the subject their particular attention. Thus in one important theory Dr. Bas-

tian differs widely from the majority of present day neurologists and physiologists. He has from the first persistently maintained that the so-called motor area in the cerebral cortex is really sensory in function, being employed for the purpose of inducing and inciting action in what he regards as the true motor centres, which he locates in the grey matter of the bulb and cord. These bulbar and spinal centres are, according to the common view, subsidiary in function, acting under the direction of the motor cortex. It would be impossible here to enter into a discussion of this difficult but essential question, but it may be observed that whereas Dr. Bastian was for something like twenty years practically alone in attributing sensory properties to the "motor cortex" the recent researches of Dr. Mott have conclusively affirmed his views, and the area is now generally admitted to be "sensori-motor." Whether his refusal to allow that this region possesses any motor functions will be substantiated by future observers may, however, considering the trend of recent researches, be regarded as doubtful.

Coming to the particular question of aphasia Dr. Bastian postulates the existence of four centres in the cerebral cortex which are concerned in the production of spoken and written language. Two of these, in the posterior parts of the cerebrum, correspond in position to the visual and (as far as is known) auditory centres, and are of the ordinary sensory type; the others, in the second and third frontal convolutions respectively, he regards as the excitomotor (or as he prefers to call them, kinesthetic) centres for writing and speech. For various reasons, many of which yet remain to be investigated, the left half of the cortex has, in right-handed people, become dominant for purposes of speech. The most interesting cases therefore cluster round lesions of the left hemisphere, but Dr. Bastian shows well how, under special circumstances, the centres on the right side come to the assistance of their damaged colleagues. Another important point to which he directs attention is the system of commissures between the various centres, the value of which is exemplified by such actions as reading

aloud and writing from dictation. Here, again, it is shown that when any particular channel is blocked, other commissures may take on the work. This is true in particular of the callosal fibres connecting the two hemispheres, and here it is interesting to note how completely the experimental results of Prof. Sherrington tally with the clinical deductions of Dr. Bastian. We are now constrained to admit that there exist in the corpus callosum oblique fibres joining the third left frontal convolution with the upper part of the right temporo-sphenoidal lobe.

The theory, then, which Dr. Bastian upholds is that aphasia depends either upon damage to one or other of the four centres in the dominant hemisphere, or upon interruption of the commissures connecting them. It may, however, happen under favorable conditions that the centres of the subsidiary hemisphere may serve as substitutes for those whose functions are impaired, and that this replacement may be aided by the opening up of new paths of connection between centres hitherto unassociated. The substantiation of this view must necessarily be purely clinical, and to this end the cases collected by Dr. Bastian are of extreme value.

His work, however, has been not only constructive and speculative; it has also been destructive and critical. One of the most important sections of the lectures is that in which he shows that the term "sensory aphasia" is a cloak loosely thrown over a multitude of conditions, each one of which he proceeds to pick out and subject to separate analysis. Nor is he less conclusive in his demolition of the popular but hypothetical "centre for concepts" in his summary of the evidence in favor of the existence of a cheiro-kinesthetic centre, or in his denunciation of the excessive importance attributed by some to Broca's, or, as he calls it, the glosso-kinesthetic centre, which he believes, and indeed shows, to be almost incapable of independent action. Two comparatively novel points of great interest come out in the course of the lectures. One is the considerable power of reciprocal substitution possessed by the visual and auditory word centres from the production of

speech and writing respectively; the other is the fact that in all probability both auditory word centres—and not, as formerly believed, the left alone—are accustomed to act on Broca's centre in the production of speech. This latter observation is one which paves the way to newer and wider views of the association of the hemispheres in general.—*British Medical Journal*.

PATHOLOGY OF BULBO-SPINAL ATROPHO-SPASTIC PARALYSES.—Hoche (*Neurologische Centralblatt*, March 15, 1897) used Marchi's method for the study of the nervous system of a typical case of amyotrophic lateral sclerosis with progressive bulbar palsy in a man, aged fifty-two years, who died with symptoms of vagus-paralysis a year and a half after the beginning of the disease. The designation in the title is employed in accordance with the suggestion of Senator (*Deutsche Med. Wochenschrift*, 1894). The patient had presented spasticity of the upper and lower limbs with exaggerated reflexes, some atrophy of the interossei of the hands, fibrillary twitching, *main engriffe* of the left hand; the pupils and external ocular muscles were normal; the tongue showed no anomaly: sensory or sphincter disturbances were absent; mimic movements were normal; there was progressive impairment of swallowing and of speech, and towards the end persistent acceleration of the pulse.

The gross morbid findings were unimportant. In Marchi's (and Weigert's) preparations the following was noted: A degeneration of the entire motor pathway and slight changes in the ganglion cells, in addition extensive degeneration of the fibre systems that unite the motor nuclei, both of the cranial and of the spinal nerves—viz., the posterior longitudinal bundle and the short tracts of the antero-lateral columns.

It was apparent from a combined study of Marchi's and Weigert's sections that the degeneration in the pyramidal tracts had progressed from below upward; it could be traced through the corona radiata to the central convolutions. In the nuclei of the cranial nerves but little degeneration of the ganglion cells was noted; in the cord the

number of cells was reduced in the cervical portion, apparently not at all in the dorsal, while in the lumbar region the fibrillar net-work of the anterior horns plainly showed degenerative changes.

In marked contrast with these rather insignificant cell-changes were the degenerations of the root fibres of the oculo-motor, pathetic, abducens, facial, glosso-pharyngeal, vagus, hypoglossus, and spinal accessory nerves. The involvement of the ocular nerves was interesting in view of the absence of clinical symptoms referable to the eyes, while those in the facial, hyperglossus, and spinal accessory were more marked than had been expected.

The chief interest of the case lies, however, in the involvement of the two commissural tracts. Marie was the first to call attention to this degeneration in the antero-lateral tracts, and Brissaud went so far as to consider amyotrophic lateral sclerosis as a primary disease of the supplemental or commissural fibres. While withholding his full approval of this theory, the author believes that the changes demonstrated in the posterior longitudinal bundle in his case accord very well with it, for this bundle is for the motor cranial nerves what the short tracts of the cord are for the nuclei of the different spinal segments.

The pathologic anatomy of amyotrophic lateral sclerosis (bulbo-spinal atropho-spastic palsy) may be summed up as follows:

1. Destruction of the motor cortical neurons—degeneration of the pyramidal tracts to their terminations.
2. Destruction of the peripheral motor neurons—motor pathway from the nuclei of the cranial and spinal nerves to their determinations—the muscles.
3. Destruction of the commissural cells and fibres in the cortex, the posterior longitudinal bundle, and the antero-lateral tracts of the cord.

Of the clinical phenomena which correspond to the disappearance of the commissural tracts we know practically nothing.—*University Med. Magazine*.

NEURONYMY.

NEURONYMIC PROGRESS IN AMERICA.—The American Neurological Association, at its recent session in Philadelphia, took a step at once sure and decided toward the simplification and unification of neurologic nomenclature. The Committee on Neuronymy (Drs. H. H. Donaldson, L. C. Gray, C. K. Mills, E. C. Seguin, E. C. Spitzka, and B. G. Wilder, chairman), presented a report which was adopted *unanimously* by the Association, June 5. To give this important measure as wide a circulation as possible we publish the report of the committee as furnished us by its chairman.

The first five sections are substantially identical with reports that were adopted unanimously by the Association of American Anatomists in 1889 and by the American Association for the Advancement of Science in 1890 and 1892. The recommendations are as follows:

1. That the adjectives DORSAL and VENTRAL be employed in place of *posterior* and *anterior* as commonly used in human anatomy, and in place of *upper* and *lower* as sometimes used in comparative anatomy.

2. That the cornua of the spinal cord, and the spinal nerve-roots, be designated as DORSAL and VENTRAL rather than as *posterior* and *anterior*.

3. That the costiferous vertebrae be called THORACIC rather than *dorsal*.

3. That, other things being equal, MONONYMS (single word terms) be preferred to *polyonyms* (terms consisting of two or more words).

5. That the *hippocampus minor* be called CALCAR; the *hippocampus major*, HIPPOCAMPUS; the *pons carolii*, PONS; the *insula Reilii*, INSULA; *pia mater* and *dura mater*, respectively PIA and DURA.

6. That the following be employed rather than their various synonyms: "Hypophysis, Epyphysis (for *conarium* and *corpus pituit.*), Chiasma, Oblongata, Lemniscus, Motticulus, Tegmentum, Pulvinar, Falx, Tentorium, Thalamus, Callosum, Striatum, Dentatum, Mesencephalon, Pallium.

Oliva, Clava, Operculum, Fissura Centralis (for *f. Rolando*, etc.) F. Calcarina, F. Collateralis, F. Hippocampi, Cuneus, Praecuneus, Claustrum, Fornix, Infundibulum, Vermis."

It will be noted that at least twenty (about half) of the names above recommended coincide with those adopted by the European committee in 1895, and that with some others, e. g., Callosum, Dura and Calcar, the difference is due merely to the elimination of superfluous words.—Editorial in *Journal of Comparative Neurology*.

NEURO-DIAGNOSIS.

HYSTERIA DIAGNOSIS.—Strozevski, of Warsaw, claims considerable consistency (*Universal Medical Journal*, March, 1897) for a characteristic symptom of this affection, one which, up to the present time, has not been noted. It consists of a complete abolition, or at least a very considerable diminution, of excitation of certain portions of the body, by a delicate stimulant, such as for instance, a piece of paper or a hair.

If, on a healthy person, these spots are touched in this way, a sort of irritation or tickling is produced with a more or less agreeable sensation. The experiment causes the person to place his hand upon the place subject to the excitation. The most readily excited points are: the external auditory canal and the mucous membrane of the nasal fossa; then the lower eyelid and the skin of the forehead. The least excitable spots are: the arm-pit, the skin on and under the knees, and the sole of the foot. In these last named places Strozevski excited irritation with gentle movements of the fingers. In hysterical subjects the above experiment does not cause any sensation, or, at best and then but rarely, very slight sensation. Gilles de la Tourette ("Traite de l'Hysterie," p. 166) briefly refers to abolition of the reflexes by tickling in the anasthetic regions. Strozevski states that he has studied this symptom in more than fifty cases of hysteria, and that the patient never feels the contact. He has never found a case of hysteria in

which this symptom was absent, not even in monosymptomatic hysteria the same being the case in patients, who, relieved of their sufferings were about to leave the hospital. This symptom is equally present in hysteria with depression or with erethism and in both sexes.

In exploring this irritability in various patients at the hospital Strozevski occasionally met with its partial diminution; that is to say, a feeble reaction under the arm pit, the knee and upon the sole of the foot with a violent reaction in the auditory canal and the nasal fossæ. This diminution only occurred in very apathetic subjects in whom he also observed an abolition or a considerable diminution of the reflex of the conjunctiva. This symptom is doubtless of central origin.

EDITORIAL.

[All Unnumbered Editorials are Written by the Editor].

Section on Neurology and Medical Jurisprudence.—The *Journal of the American Medical Association* pays the following high tribute to the work and influence of this section and shows how near the day is approaching when Neurology will have its proper place in general medicine:—

This is one of the younger sections of the American Medical Association, which has already attained prominence, and will no doubt in the near future rival all the other sections in interest and popularity. Questions of neurology and jurisprudence are increasing in every department of practical medicine. The new researches of brain physiology give promise of therapeutic revolutions as startling as in any other field of medicine. At the Philadelphia meeting fifty-one papers were read by title. Of these only three related to medical jurisprudence, three to the influence of alcohol on the brain and nervous system, and two to hypnotism. Seven papers were devoted to neurasthenia and its treatment, and three to insanity. The other papers were mostly devoted to diseases of the spinal cord and brain. The authors of the latter were very largely teachers of neurology, and were expected to present the latest and most authoritative facts on these topics. How far these papers together exceeded the papers read at previous meetings of the Section, can not be easily determined. Evidently they were more technical, and confined to the more obscure lesions of the brain and cord. Some of these papers had a pedagogic cast, indicating unfamiliarity with audiences of general practitioners, and inability to isolate and emphasize the central facts of the topic. Many excellent studies are covered up and made useless in all the Sections, by the inability of the reader to reach the level of his audience, and condense his facts so they can be understood without effort. The popularity of the Neurologi-

cal Section has come from the fact that its wide range of topics have been presented by practical men and specialists, who avoided all effort to exhaust the subjects and sought rather to make prominent some particular facts. This has given a certain suggestiveness to the papers which were stimulating to all hearers. Several papers read at this meeting were prominent in this respect and will be read in the *Journal* with great interest.

The officers and leading men in this Section have long ago recognized the need of more practical helpful papers to the general practitioner and members of the Association who yearly come to the meetings for facts and hints that can be used in a general every-day practice. It is proposed to have the same secretary elected every year, so he can become familiar with the leading men of the country who are members of the Association, and able to contribute strong papers on the topics of the Section. This will be a great improvement over the present methods, and enable the secretary to arrange and bring out certain topics more fully than in any other way. Symposiums of questions still unsettled can be arranged and carried out, and special topics can be presented by leaders not readily accessible to a new unknown secretary. It was proposed to devote one or more sessions to medico-legal questions exclusively, and have certain topics uppermost in the public mind discussed. This will give a certain solidity and permanence to the work of the Section, which will be followed by others.

There are probably more difficult unknown questions coming up in every branch of practice concerning neurology and jurisprudence than in any other field. The medical teacher will give general principles, but he is unable to go beyond certain narrow lines. The new problems that are ever coming up require the study of matured practical men, and discussion from all sides. This is often aptly illustrated in sectional meetings, where live topics bring out most suggestive spirited discussions.

This Section, in common with other sections, suffers from the reading of papers which are technical exhaustive studies of some narrow phase of the subject, which are of little interest, even to experts. Such papers always drive away the audience or put them to sleep. There are some quite prominent men whose papers are so minutely exhaustive, as to destroy all practical interest in the subject. Others equally learned have such an involved, obscure style, that it requires much effort to follow them. Often such writers present many original views which are covered up and lost

except to some careful student who discovers them and announces them as his own. There follows an acrimonious debate of priority. The Neurological Section has started a movement to reform these errors, and at the next meeting will attempt to lead all other Sections in broad, practical studies and presentations of papers which will be both suggestive and helpful to all its hearers.

The American Journal of Insanity, heretofore published at 34 Washington street, Chicago, was transferred to Baltimore, July 1, 1897, and will be published by the John S. Hopkins Press. The editorial control will be in the hands of a committee of the American Medico-Psychological Association, consisting of Dr. Henry M. Hurd and Dr. E. N. Brush, of Baltimore; Dr. G. Alder Blumer, of Utica, N. Y., and Dr. J. Montgomery Mosher, of Albany, N. Y.

All communications for the Journal should be addressed to Dr. Henry M. Hurd, care of the Johns Hopkins Hospital, Baltimore, or to any of the editors. All exchanges and business communications should be addressed to the Johns Hopkins Press, Baltimore.

The Training School for Nurses, at the Iowa Hospital for the Insane, Clarinda, Iowa, invited us to attend the graduating exercises which were held in the Hospital Amusement Hall, Wednesday evening, June 9th, 1897.

While we could not attend we cordially approve of this good work of making trained nurses for the insane.

Medico-Psychological Association of Great Britain and Ireland will be held at the College of Medicine, Newcastle-on-Tyne, July 29th and 30th, 1897. Communications may be sent to the general secretary, R. Percy Smith. One or more excursions on Saturday, July 31st, will conclude the meeting.

A Big Meeting.—Our esteemed contemporary, the *Canadian Journal of Medicine and Surgery*, has an exalted idea of the size of the American Medical Association. Referring to the recent jubilee meeting W. A. Y. remarks in its editorial pages as follows: "This magnificent association which is without a peer we think in the world, had by far its most successful convention this year, there being over twenty-five hundred delegates from every state in the Union." One hundred and twelve thousand five hundred at least. Thanks for the complimentary reference to our National Association, but the "W. A. Y." of your reckoning

is reckless and wayward. But it was a large and glorious meeting and nothing was in the way of its success.

We acknowledge an invitation to be present at the commencement exercises of the Training School for Attendants at the Amusement Hall of the State Hospital at Danville, Penn., Thursday July 8th, 1897, at 7:45 P. M.

We are glad to see the good work go on, but regret our inability to attend.

The Philadelphia Neurological Society did "itself proud," in the language of the border, in its treatment of the Neurological Section of the A. M. A. Besides its banquet and reception it presented the following intellectual bill of fare at the Neurological Society: Dr. Wharton Sinkler exhibited a case of Erb's Paralysis, Juvenile Form; Dr. Martin W. Barr, by invitation, exhibited an Extraordinary Case of Echolalia; Dr. F. X. Dercum exhibited a Case of Cortical Hemianopsia and a Case of Unilateral Disseminated Sclerosis; Dr. James Hendrie Lloyd exhibited a Case of Tremor in a Man Exposed to Lead; Dr. Charles W. Burr exhibited a Case of Hemiplegia, probably Hysterical, with True Ankle Clonus; Dr. Charles K. Mills exhibited a case of Paralysis of the Elevators of the Eyeballs and Two Cases of Painless Facial Tic; Dr. Joseph Sailer reported a Case of Gliosis Cerebri and Dr. William G. Spiller read a communication from Dr. Marin esco, of Paris, on the Pathology of Morvan's Disease.

William W. Ireland's Early Honors.—*The Scotsman* of June 3rd ultimo, speaking of a proposed dinner at Delhi to commemorate that immortal seige, says:

On that occasion a young Edinburgh boy so distinguished himself that he received the Victoria Cross. * * * Another Edinburgh youth, a graduate of the University, was there, Dr. Ireland, since well known professionally and in the literary world. He was afterwards returned as one of the killed in the battle of Nujjugarh, and wrote the "History of the Siege of Delhi, by an officer who served there."

Dr. Ireland has been a frequent and much valued contributor to this journal. He is especially well known by his books, "Through the Ivory Gate" and "Blot Upon the Brain."

Schlatter Dead.—This insane religious enthusiast and "Divine Healer" who had such a remarkable career in Denver, Colorado, in 1895, has been found dead from persistent

fasting in the mountains near Casa Grande, Mexico. Following is something of his record from the *New York Tribune*:

While in Denver, from August 22 to Nov. 13, 1895, about three hundred thousand people visited Schlatter. Francis Schlatter was an Alsatian peasant, ordinarily educated and intelligent, who came to this country several years ago and settled in Jamesport, Long Island, as a shoemaker. His record in Jamesport was good. He was addicted to no bad habits, made excellent shoes, paid his way and saved money. He was in love with a young woman, who, however, refused to marry him. In the society of the village he was known as a good fellow with queer views who could "talk like a book." He had "visions," also, and had much to say about the great questions of life and destiny. But at this time he made no pretensions to the possession of any unusual powers. In 1894 he went to New Mexico, and was next heard of as a wonderful "New Messiah," with an extraordinary power of curing diseases. He at once became locally famous. It is said that he was imprisoned in that Territory for falsely claiming divine powers. However that may be he went to Denver in the summer of 1895, and his career there attracted widespread public interest. His presence made Denver the central point to which journeyed thousands of sick and afflicted from all over the country. Schlatter lived in Denver with Alderman Fox, and gave public "treatments" in a hall or theater, at which an admission fee was charged. Then there were "treatments" to all who came to Mr. Fox's house. He became known as the "New Messiah, and "The Healer." He blessed handkerchiefs, and it was said that any one touching these handkerchiefs would be "healed." "Fakirs" did a thriving business in this line. They advertised "blessed handkerchiefs" for the small sum of \$1, and raked in hundreds of dollars, until they were arrested by the authorities. Schlatter was wanted as a witness in this case, and many thought that he disappeared from Denver on November 13 because he did not want to testify. He left a note in his handwriting saying:

Mr. Fox—My mission is finished. The Father takes me away. Goodby. Francis Schlatter.

After he disappeared from Denver Schlatter was reported at various times in the mountains of Arizona and New Mexico, and many weird stories were told of his flight. Many remarkable stories were told of cures made by Schlatter in Denver. On the last day he was in the city he

"treated" no fewer than five thousand people. He did not profit in a worldly way by his months of self-imposed labors, which were of an extremely fatiguing nature. After the six hours daily spent in standing at the head of the line, clasping the hands of his visitors, he retired to the house, rested for a time and then set to work upon his mail, answering letters until long into the night. That mail is estimated to have amounted toward the end to over forty thousand pieces a day.

Asexualization for Crime.—*Leonard's Illustrated Medical Journal* gives the following bill, which has been introduced in the legislature of Michigan, and has a fair chance to become a law:

Section 1. The people of the State of Michigan enact, That all persons inmates of the Michigan Home for the Feeble Minded and Epileptic, and all persons who shall hereafter become inmates of said Home for the Feeble Minded and Epileptic, and for each and every person confined in said institution, and before he or she is discharged, shall be caused to submit to an operation that causes asexualization, that such persons shall cease to be able to reproduce their kind.

Sec. 2. All persons who shall have been convicted of a felony a third time, and so stated by the court, the first or second conviction having been committed in this State or some other State or the United States, upon conviction and sentence to a Michigan State prison, all of such persons so convicted and sentenced at a time prior to the expiration of such known third sentence, shall be caused to submit to an operation that causes asexualization and stops their ability to reproduce their kind.

Sec. 3. The superintendent, warden or other person having charge of such Home for the Feeble Minded and Epileptic, and such prisons as shall contain such persons as provided for in Sections 1 and 2 of this act, the medical superintendent in charge of said institution shall perform or assist in the performance of the same any physician or surgeon of this State. The Superintendent, warden or other person in charge of said institution may pay to such operator a sum not more than twenty-five dollars for each and every operation so performed; and in no case where the operation is performed by the physician employed regularly by the within named institution shall there be paid any extra compensation.

Sec. 4. In each and every case before such operation shall be performed, if the person be feeble minded or an

epileptic confined within a prison in this State, the matter shall be presented in writing to the board of control of such institution, wherein it shall be shown that such operation would benefit the subject physically and morally, or that it is necessary as a restrictive measure to prevent propagation of any kind in case the subject is discharged from the institution. The board of control, shall, after being satisfied of the advisability of such operation, authorize the medical superintendent to perform the same, after first giving notice in writing to the parents or guardians of such persons at least ten days before such operation.

Sec. 5. That whoever shall have been convicted of the crime of having ravished a child or woman while upon the streets of any city, village, public highway or any other place within this State, it shall be the duty of the judge making such sentence to include in such sentence that within one year after being confined in such prison, an operation which causes asexualization shall be performed as provided in Section 3 and 4 of this act.

Sec. 6. The penalty for non-compliance of this act shall be just cause for removal and forfeiture of the position of such superintendent, warden or other person named in this act.

Gimlette will not bore you, but enlighten you, if you are interested in Myxœdema and the thyroid gland; and you may BETT-ON MASSEY, if you are inclined to the study of electrolysis and electro-cataphoresis for the removal of morbid growths.

Mississippi Valley Medical Association.—The next meeting of the Mississippi Valley Medical Association will be held in Louisville on October 5, 6, 7, and 8, 1897. All railroads will offer reduced rates. The coming meeting promises to be the most successful in the history of the Association. This is a growing body and the hospitality of Kentucky doctors assures a pleasant and profitable time to all who go and a hot time in the old Kentucky town of nights at least, while the Association is in session. The address on Surgery will be delivered by Dr. J. B. Murphy, Chicago; the address on Medicine by Dr. John V. Shoemaker, Philadelphia.

The Foreign Cult in American Medicine.—The *Journal of the American Medical Association* has a pertinent editorial on this subject from which we somewhat copiously extract with commendation, especially to the younger men

of the profession in the department of Psychiatry and Neurology.

The latest published utterance of a recently deceased American naturalist, who was second to none in the specialties he had adopted, and was furthermore one of the most philosophic and broadest in his culture, was a protest against a tendency that appears to exist among scientific students to overestimate the value of the study of the infinitesimal and the culture of Europe as compared with our own. If this is true amongst scientific men it is much more so in medical circles, and his essay may well serve to point a moral for the consideration of our profession. It is abundantly true that an American who is properly fitted can learn something abroad, as the converse is also true that the European could learn something here, if he only could get that fact into his consciousness.

With those who really profit by European study no one would need to quarrel, but for the fact that even among these there are some who, through want of mental balance or some other defect, come back with an undue estimate of themselves and a disparaging opinion of their own country and countrymen. A "certain condescension in foreigners," humorously noted by Lowell, can be endured, recognizing the fact that it is generally a characteristic of second rate individuals, but to have it encouraged by the peculiarities of our own compatriots is not at all gratifying and is much less endurable.

Professor Cope's protest against the undue magnification of microscopic research is also valid in medicine; we have the same tendency to correct. Section cutting and staining learned abroad no more makes a pathologist than it does a biologist, and it is in medicine, as in science, not less really scientific to observe properly with the naked eye than "through a brass tube furnished with lenses." The overestimation of the latter method is responsible for the waste of much patient work and expense, and this is especially true in medical science. What we need is not less careful pathologic work, but more and better clinical observation to guide and interpret it, and it is easier to make a trained microscopist than a really skilled clinician. As it is, however, it often happens that a manual skill and dexterity in microscopic work is valued above far more important and difficult accomplishments, simply because it is more showy and requires the use of elaborate paraphernalia that are beyond the reach of the many.

There is a possibility of becoming eminent in medicine

sion of Atlanta City showed their warm-toned handsome hospitality in taking all who wished to go and rest and dry by the sea and recuperate. The selection of Surgeon General Sternberg for the next president was a worthy one timely bestowed. The army and its distinguished medical chief merited the honor, and no better place for the next meeting than Denver could have been selected. The East, the West, the North, the South and the great central valley of the country, will clasp fraternal hands there in the heart of the Rockies and enjoy the mitigating influence of renewed friendships, mutual goodwill and unimpaired Denver hospitality.

To Castrate the Crippled in Mind is the aim of Mr. Edson, of the Medical Education. He proposes this remedy for all inmates of the State Home of the feeble-minded, the epileptic, the idiot and for incorrigible criminals.

How to get around the constitutional provision against maiming for a person's disfigurement. As a remedial measure it might be valuable in certain cases of cerebral-mental disease and as a deterrent the convicted of capital crime punishable with death, it might be permitted by the law and rape might be made a capital crime. It is the proper prophylaxis against social prostitution, decadence and criminal degeneracy and ought to be provided for by law wherever it can be made a constitutional possibility.

Selected Good Advice.

If you've got a rowdy, that's lumpy,

Boil it down.

Write it short and snappy,—

Boil it down.

When your François, son has mired,

Down the page your son has sprinted,

If you wait your son's printed,

Boil it down.

Take out every single letter,—

Boil it down;

Fetch your initials in the letter,—

Boil it down.

When you're in a tight place, don't strain it
so we'll know, my motto, guess it;

Then, my friend, ere you address it,

Boil it down.

Boil out all the extra trimmings.—

Boil it down;

skim it well, then skim the trimmings.

Boil it down.

When you're sure 'twould be a sin to

Cut another sentence into.

Send it on, and *we'll* begin to

Boil it down.

—*Canadian Journal of Medicine and Surgery.*

Twelfth International Medical Congress, Moscow. The Czar has taken the Congress under his protection and the delegates are to be presented to him by the ambassadors from the various countries. All members of the Congress are to be carried free from the frontiers to Moscow and return, and no customs levied on instruments or small quantities of drugs. (*St. Petersburg Med. Woch.*, May 8.)

The program announced by the Section for Nervous and Mental Diseases is as follows: 1. Pathology of the Nerve Cell, Van Gehuchten, Belgium; Dana, New York; Van Gieson, New York. 2. Syringomyelia, Schultze, Bonn; Schlesinger, Vienna; Minor, Moscow. 3. Tabes Dorsalis, Obersteiner, Vienna; Pierret, Lyons; Erb, Heidelberg; Grassett, Montpellier; Althaus, London; Darkschewitsch, Russia; Borgherini, Padua; Eulenburg, Berlin; Benedikt, Vienna; Raichline and Hirschberg, Paris. 4. Operative Treatment of Diseases of the Brain, Oppenheim, Berlin; Sachs, New York; Voisin, Paris.

Addresses on other subjects will be given by Lombroso, Turin; Crocq, Brussels. 1. Hallucinations and Fixed Ideas, Pitres and Regis, Bordeaux; Shaw, Liverpool. 2. Paralysis of the Insane, Binswanger, Jena; Althaus, Homen, Helsingfors; Muratow, Moscow. 3. Hypnotism and Suggestion, Bernheim, Nancy; Tokarski, Moscow; Robertson, Glasgow; Gorodichze, Paris. Other speakers: Morel, Ghent; Fürstner, Strasburg, Francoise, Liège; Shuttleworth, England; E. Christian, France; Meschede, Germany; Leyden, Berlin; Henschen, Upsala; Ballet, Paris.

The Section on Neurology and Medical Jurisprudence of the American Medical Association was unusually well attended, the program was extraordinarily good and full embracing the following papers and subjects with instructive discussions:—

Tuesday, June 1st—Chairman's Address, Dr. W. J. Herdman, Ann Arbor, Mich.; History of the Section on

Neurology and Medical Jurisprudence, Dr. J. G. Kiernan, Chicago; History of American Neurology, Dr. C. H. Hughes, St. Louis; *On the Pathogenesis of Locomotor Ataxia, Dr. L. Harrison Mettler, Chicago; Anaesthesia in Locomotor Ataxia, Dr. Charles W. Burr, Philadelphia; *The Paralysis, by One of the Many Paralytics, Dr. Samuel Knox Crawford, Chicago; Internal Cerebral Meningitis Chronica, Dr. E. S. Pettijohn, Alma, Mich.; The Differential Diagnosis between Cerebral Syphilis and General Paresis, Dr. Hugh T. Patrick, Chicago; Hereditary Lateral Sclerosis, Dr. Augustus A. Eshner, Philadelphia; A Case of Thomsen's Disease Complicated by Multiple Neuritis, Dr. M. Nelson Voldeng, Des Moines, Iowa; Pain Traumatism, Dr. Thomas H. Manley, New York City; Melancholia and its Treatment, Dr. W. S. Watson, Fish-kill-on-Hudson, N. Y.

Wednesday, June 2nd.—Aphasia, Dr. Charles K. Mills, Philadelphia; Discussion, Drs. F. X. Dercum, Hugh T. Patrick, William G. Spiller, Wm. Fuller, E. G. Carpenter, and W. J. Herdman; French and Motor Aphasia in a Polyglot, Dr. F. Peterson, N. Y. City; *The Subconscious Mind, Clark Bell, Esq., New York City; *Some States of Disturbed Consciousness, Dr. J. T. Eskridge, Denver, Col.; *Influence of Hypnotic Suggestions upon Physiological Processes, Dr. R. Oscar Mason, New York City; *Expertism, Dr. S. V. Clevenger, Chicago; *A Synopsis of the Duestrow Case, Dr. L. Bremer, St. Louis; The Medico-Legal Aspect of Chorea Insanities, Dr. C. C. Hersman, Pittsburg, Pa.; Insanity and Pulmonary Consumption Among the Negro Population of the South Since the War, Dr. Thomas J. Mays, Philadelphia; Remarks on the Curability of Insanity, Dr. John Puntun, Kansas City, Mo.; (a) Alcohol as a Causative Factor in Disease of the Central Nervous System. (b) Inebriety and Tuberculosis as Allied Diseases, Dr. T. D. Crothers, Hartford, Conn.; *The Status of the Present Treatment of Alcoholism, Dr. J. K. Bauday; *Stigmata in Young American Degenerates, Dr. Eugene S. Talbot, Chicago.

Post-mortem Findings in a Case of Trauma of the Cervical Region of the Spinal Cord Simulating Syringomyelia, Dr. J. H. Lloyd, Philadelphia; Meningomyelitis with Special Reference to the Tubercular Form, Dr. William G. Spiller, Philadelphia.

Thursday, June 3rd.—Neurasthenia, Essentialis and Neurasthenia Symptomata, Dr. F. X. Dercum, Philadelphia; A Study of the Symptomatology of Neurasthenia in

Women, Dr. Louis F. Bishop, New York City; Clinical Evidences of Neuro-obesity as an Abdominal Neurosis, Dr. G. Betton Wood, Philadelphia; Function of the Nerve Cell, Dr. Wm. B. Hill, Jr., Swannoe, Tenn.; The Causative Factors in Diseases of the Central Nervous System, Dr. Geo. H. Riker, Sykesville, Md.; ²The Use and Abuse of Electricity in the Treatment of the so-called Neuroses, Dr. L. Hamilton McAlister, Chicago; The Rest Cure, Dr. Landon Carter Gray, New York City; Discussion: Drs. Chas. K. Mills, Douglas, Graham, Pierce, Watson and C. H. Hughes; Rest and Northern Lake Air for Neurotics, Dr. E. S. Pattyjohn, Abma, W. Va.; Treatment of Graves' Disease, Dr. Harold N. Meyer, Chicago; Discussion: Drs. A. A. Esmer and C. H. Hughes; Habit Spasms of Children, Dr. Samuel J. Ford, Philadelphia City, Pa.; A Study of the Development of Some Common Psychoses of Childhood into Permanent Criminal Tendencies, Dr. C. Francis Calif, Middletown, Conn.; Hypnotism in the Treatment of Disease, Dr. U. O. B. Wingate, Milwaukee.

Friday, June 30th. Examination in Man, Dr. Wharton Sandler, Philadelphia; ¹Tumor of the Spinal Meninges, Drs. Chas. K. Mills and Abysius O. J. Kelly; ²(a) Fibroma of the Dura, (b) Septelloma of the Dura, (c) Glioma of the Thalamus, Drs. Chas. W. Burr and Abysius O. J. Kelly; ³Tumors of the Cerebellum with the Report of a Case, Dr. Abysius O. J. Kelly; ⁴A Clinical and Pathological Report of a Case of Chronic Progressive Non-specific Dementia with Arterio-sclerosis, Drs. Chas. K. Mills and Mary Alice Schivoly; ⁵A Case of Parietic Dementia with Autopsy, Drs. Chas. W. Burr and J. H. W. Rhein; ⁶Tumor of the Basal Ganglia, Drs. Chas. W. Burr and Carl Ohnesorg; ⁷Tumor of the Spinal Meninges, Drs. Samuel W. Morton and A. Ferree Wither; (a) A Contribution to the Pathology of Myelitis, Acute and Chronic, (b) Lesions of the Spinal Cord Due to Tubercular Disease of Column, With Microscopic Specimens, Drs. John K. Mitchell and John H. W. Rhein, Philadelphia; Tremor in Chorea, Dr. John H. W. Rhein, Philadelphia.

For the coming year Dr. C. H. Hughes, of St. Louis, was elected president and Hugh T. Patrick, of Chicago, Secretary.

¹ Read by title, Author absent.

² From the Section of Research of the Neurological Laboratory of the Philadelphia Poly-

technic. Members of the Section are invited to visit the laboratory.

REVIEWS, BOOK NOTICES, ETC.

HYSTERIA AND CERTAIN ALLIED CONDITIONS—THEIR NATURE AND TREATMENT, WITH SPECIAL REFERENCE TO THE APPLICATION OF THE REST CURE, MASSAGE, ELECTROTHERAPY, HYPNOTISM, ETC., Illustrated. By George J. Preston, M. D., Professor of Diseases of the Nervous System, College of Physicians and Surgeons, Baltimore; Visiting Physician to the City Hospital; Consulting Neurologist to Bay View Asylum, The Hebrew Hospital, The Church Home and Infirmary, etc.; Member of the Medical and Chirurgical Faculty of Maryland, The American Neurological Association, etc. * P. Blakiston, Son & Co., Philadelphia, Publishers.

This little volume of nearly 300 pages presents the symptomatology and differential diagnosis of hysteria in a clear and concise manner, and indicates the various therapeutic measures useful in the treatment of this disorder in detail, thus subserving the needs of the general practitioner in particular, for whom the work is especially intended.

Regarding surgical interference in the treatment of hysteria, Dr. Preston writes as follows:

It has been shown that in the accidents of hysteria, such as paralysis and contracture, surgical interference is entirely unwarrantable. It may happen, in rare instances, that there is actual shortening of the tendons in contracture requiring tenotomy, but this is altogether exceptionable. Surgical operations are rarely ever thought of after the diagnosis of hysteria is made in the case of the two conditions mentioned above. Far different has been the history of operations upon the organs of reproduction for the cure of hysteria. As has been shown, the early authors attributed hysteria to the migrations of the uterus, and had the operation of hysterectomy been known or been possible at the time, it would, no doubt, have been frequently resorted to. As it was, the treatment of hysteria often had in view the supposed disease of the genital organs. "*Nubat illa et morbum effugiet*," said Hippocrates, and Forestius gives minute directions for the "*confricatio vulvæ*." These efforts at treatment were simply the logical outcome of the ignorance respecting the nature of the disease hysteria, and were excusable. It is, however, almost incredible that in the light of the nineteenth century surgeons should endeavor to cure a disease which is admitted to be in the brain by operating upon the organs of generation. And still the "operating frenzy" is not spent. Just as in the cases mentioned in another chapter,

in which perfectly healthy breasts have been removed for a supposed disease which was really in the mind of the patient, and as joints have been laid open and muscles and tendons cut for hysterical contractures, so innumerable healthy ovaries have been removed for hysterical pain situated in this region. Without perceiving it, the effort has been made to remove, by the knife, an hysterogenic zone. It became obvious, after a time, that the mere existence of pain in the region of the ovary was not sufficient cause for operation, so the endeavor was made to show some evidence of disease—a minute cyst, or some other utterly trivial condition.

Most of us were familiar a few years ago with this sort of "gynecological pathology." After a time the view that the ovaries in hysteria were diseased had to be abandoned. Then the position was boldly assumed that the removal of the ovaries, though healthy, was good practice in the treatment of hysteria and other mental diseases. For a time this dictum was vigorously promulgated, and the attack upon the healthy ovary in the hysterical subject became notorious. In this country, where so much attention has been paid to gynecology and so little to hysteria, this most unwarrantable operation has been resorted to with disgraceful frequency, and if it were necessary, long lists of published cases, operated on for the cure of some neurosis, could be given. Most unfortunately a certain proportion of these operations were successful in relieving the hysterical symptoms for a time, but for a very different reason than the one assigned. As has constantly been pointed out, the central idea in the treatment of hysteria is suggestion, and our constant aim is to make a strong mental impression. Take, now, the hysterical woman: let her undergo this most grave operation, knowing often a good deal of what removal of the ovaries implies, feeling that her life is to undergo a marked change; let her pass through the impressive preparation for the operation, and after the operation be kept in bed for several weeks and well nourished. Could any more impressive treatment be devised! I have often heard gynecologists gravely assert that the surgical procedure alone was responsible for the success. It is well known that the suggestive effects of the operation have been successfully employed, the patient being prepared, anesthetized, and bandaged up, no operation, or sometimes only a slight cut, having been made. It is not the place here to discuss the mortality of the operation for the removal of the ovaries, but one of the arguments that is sometimes offered in support of this mode of treating hysteria is, that the removal of the ovaries is perfectly safe. It may be said that the statistics from which the mortality tables have been taken are generally those of very skillful operators. If all the cases operated upon by unskillful and ignorant men were included, the mortality would show a far higher figure. The fact that this unwarrantable operation was for a number of years so strongly advocated by many able men, spread the fame of it far and wide among the laity, and a neurologist is asked in most of his bad cases of hysteria whether it had not better be resorted to. Again, the cases of complete and permanent cure are limited in number, and must be, since the operation has simply for the time acted

upon the higher brain centers in a suggestive manner, but has not removed the cause of the disease.

In the vast majority of cases the hysterical symptoms return, and often the ovarian pain comes back in the place where the ovaries ought to be. I could give many cases even from my own experience if space permitted. I will refer to two only: one a case that has already been mentioned as illustrating hysterical lethargy. In addition to this symptom the girl had anesthesia and very marked hysterogenic zones. Ovariectomy was performed upon her, and she was dismissed as cured. Some six months or a year after I inquired of her mother as to her condition, and was told that she had suffered a relapse and had been taken to a hospital, where she had been entirely cured by electricity. The case has passed from my observation, but doubtless the girl has been cured in many different ways since. The other case was a woman with certain irregular symptoms. She had, however, well-marked hysterogenic zones. While under my care I discovered a floating kidney. She improved somewhat and left the hospital. I next saw her in another institution and learned that she had had her ovaries removed, but the hysterical stigmata were still present. Subsequently another surgeon opened her belly the second time and removed the floating kidney. After all this, she told me that she was about in the same condition as before the operation. These are two cases taken at random, but they illustrate the point.

Twenty years ago neuroses in women were supposed to be due to a stenosis of the os uteri, and instruments were devised to enlarge this passage. After a time this operation fell into disuse and all nervous women who had even the most minute tears in the cervix were told that this was the source of the trouble—the *fons et origo* of their nervousness. Then came the day for trachelorrhaphy, which was practiced to an absurd degree. Again, the operation of removal or cauterization of the clitoris was at one time frequently resorted to as a cure for hysteria. To-day these operations have sunk into well-merited oblivion, except in cases where there is a distinct indication for them. They are no longer performed for the relief of the purely nervous symptoms. The same history might be given of the use and abuse of the pessary. In a previous chapter, the attempt has been made to show why women are apt to refer their ills to the reproductive organs. The mystery attached to the organs of generation and the monthly discomforts of menstruation make these organs the source of suggestion. This explains the extreme readiness of hysterical women to submit to operations. In hysterical and neurasthenic men it is extremely common to hear complaints relative to the sexual organs, and yet the operation of castration has never been in danger of becoming popular among men. The other side of the question—for there is another side—which must be considered is to what extent actual disease of the reproductive organs is responsible for hysteria. It is extremely doubtful whether any form of ovarian or uterine disease ever caused hysteria in a person not predisposed to this or other neurosis. On the other hand, there can be no doubt that ovarian and uterine disease or displacement may act as reflex causes and thus aggravate the

existing hysteria or even bring on an attack in individuals predisposed to it. It goes without saying that such actual disease of the organs of reproduction, or, in fact, any irritating cause, should be especially looked after in hysterical subjects.

The rule, then, that should be adopted is that operations should not be performed on hysterical women for the relief of the nervous symptoms unless some distinct disease of the reproductive organs can be detected.

EYE-STRAIN IN HEALTH AND DISEASE: With special Reference to the Amelioration or Cure of Chronic Nervous Derangement Without the Aid of Drugs. By Ambrose L. Ranney, A.M., M.D., Author of "Lectures on Nervous Diseases"; Late Professor of Nervous Diseases in the Medical Department of the University of Vermont. Illustrated with thirty-eight wood-cuts. The F. A. Davis Co., publishers.

Mark A. Brown, reviewing this book in the Cincinnati *Lancet Clinic*, says: "Coming from a neurologist, a work on eye-strain can hardly fail to be of interest; when, in addition, the neurologist has reached the height attained by Dr. Ranney, his opinions can not be looked upon with other than respect. The theories advocated by the author are defended, even proved, by the introduction of numerous cases bearing on the special subject which may be under discussion. These cases show that his treatment of chronic nervous affections, headache, neuralgia, chorea, epilepsy, nervous prostration, insanity, by correcting errors of refraction, by prisms, by graduated tenotomies, have been attended by results remarkable even in this age of surprises.

"The author rightly advocates that every specialist in nervous diseases should be able to detect and correct ordinary refractive errors and weaknesses of the extrinsic ocular muscles.

"The statements made in the histories of a number of cases that the patient had been treated by skilled specialists for long periods of time, and the publication of letters from grateful patients are not in good taste to say the least.

"Altogether, the book is one that can be read both by oculist and neurologist with considerable profit."

We have to say further that going from home to new environments has much to do in promoting improvements. Patients go away to spas and improve on water they would get sick on at home. They go to sanatoria and improve on the recreation and relaxation and changed and cheering environment they badly needed, but never before received in their lives—the solitary farmer's wife, the sedentary school teacher and routine broken business man.

One of our patients afflicted with melancholic hypochondriasis and profound general neurasthenia, went to Stevens, "got his eyes trimmed," as he called it, and felt better. He went again, said Dr. Stephens promised him a cure. He got back homeward as far as Chicago and blew out his brains. We could have cured him if we could have got him into an institution for the insane or could have continuously maintained a steady course of

tranquilizing and sustaining neurotherapy. The trimming of the eyes is all right, errors of accommodation should be corrected and every other abnormal eye condition, but as many functional eye conditions come from altered tone as from changed eye function. The true therapy is to treat the patient as well as any defective spot in his anatomy which may be discovered.

TEXT-BOOK OF MENTAL DISEASES. By Theo. H. Kellogg, A. M., M. D., late medical superintendent of Willard State Hospital, etc., etc. Octavo 792 pages, illustrated by original sphygmographic tracings and photographs of the different types of mental disorder. Extra muslin, \$6.00.

It is many years since an original American work on this subject has appeared, and this is the more surprising since the science of mental diseases is one that advances rapidly and has counted among its votaries many eminent American alienists and one of the world's pioneer psychiatrists in the person of Dr. Benjamin Rush and one of the leading medico-jurists of insanity in Isaac Ray. The present treatise aims to be a practical guide to the diagnosis and treatment of all the various types of insanity met with. While reflecting a knowledge of all the relevant psychological facts of recent English or foreign literature, the work is, above all, a practical treatise written for the use of practitioners and students of medicine. Dr. Kellogg's long experience while holding prominent positions in large hospitals for the insane, both public and private, as well as during many years' private practice in the treatment of mental affections in New York City, has in an eminent degree qualified him for the preparation of a work on this subject. A table of contents and a copious index give ready access to the matter contained in the volume.

It deserves a place in every physician's and lawyer's library. Wm. Wood & Co., New York, Publishers.

THE JULY MONIST. Prof. Jacques Loeb, of the University of Chicago, offers in the leading article of the *July Monist* a theory of "Egg-structure and the Heredity of Instincts," which bids fair to be a decided improvement upon the complicated doctrine of Weismann. He explains marvelous inherited acts by simply assuming polar differences of chemical constitution in the egg, and the presence there of heliotropic, chemotropic, etc., capacities.

Dr. Woods Hutchinson's article on the "Value of Pain" is as striking in its homiletic as it is in its scientific point of view. The eloquent author draws some profound ethical conclusions as to the function of pain in life.

"Man as a Member of Society," by the distinguished French anthropologist, Dr. Paul Topinard, is an exhaustive review of man's development from the crude beginnings of society down to the highest intellectual culture of the present.

Dyer D. Lum's posthumous paper, "The Basis of Morals," shows him to be a thinker of great ability and reach.

Dr. Paul Carus translates the old Chinese philosopher, Lau-Tsze's "Tau-Teh-King," or the Classic on Reason and Virtue. The old Chinese

ways of thinking are not our ways, and the utterances of Lau-Tsze will give the modern reader many a hard nut to crack.

The "Conflict of Races," current French philosophy and book reviews, afford a critical picture of contemporary thought. The Open Court Publishing Co., Chicago. Single copies, 50c.; annually, \$2.00.

THE MENOPAUSE. A consideration of the phenomena which occur to women at the close of the child-bearing period, with incidental allusions to their relationship to menstruation, also a particular consideration of the premature (especially the artificial) menopause. By Andrew F. Currier, A. B., M. D., New York City. D. Appleton & Co., Publishers.

The author refutes the traditional teaching that the menopause is a serious period of a woman's life, and says: "The menopause is *not* a dangerous time or experience for the majority of women, any more than puberty is. It is only the exceptional woman who has a hard time." He contributes a chapter on artificial menopause, caused by removal of the ovaries, a subject to which little attention has been given in previous books on this subject. In the chapter on treatment he advises surgical interference, saying, "There are many cases which can and should be relieved by such measures, and it is hardly just, or scientific, or humane, to load them down with drugs month after month, in the most empirical fashion, if the condition is one which can be effectually and permanently relieved by the timely resort to surgery."

It is a valuable work on an important subject, well arranged, and printed in clear and readable type.

NEURAL TERMS, INTERNATIONAL AND NATIONAL, by Burt G. Wilde, reprinted from the *Journal of Comparative Physiology*, Vol. vi, December, '96. Feb'y, '97, is a valuable and terse exposé of the author's contributions to Neurology, especially anatomical. These terms are coming rapidly and largely into use among neuro-anatomists.

Analgnesia, Thermic Anæsthesia, and Ataxia, Resulting from the Foci of Softening in the Medulla Oblongata and Cerebellum, Due to Occlusion of the Left Inferior Posterior Cerebellar Artery. A study of the course of the sensory and co-ordinating tracts in the medulla oblongata. By Henry Hun, M. D., Professor of Diseases of the Nervous System in the Albany Medical College, Albany, N. Y.

Syringomyelia, an essay to which was awarded the Alverenga prize of the College of Physicians of Philadelphia for the year 1895. Guy Hinsdale, A. M., M. D., Fellow of the College of Physicians of Philadelphia, etc., etc., P. Blackiston Son & Co., Publishers.

The Use of Antitoxic Serum in the Treatment of Diphtheria Under the Supervision of the New York City Health Department with a Résumé of the Published Reports on the Subject. By Hermann M. Biggs, M. D., and Arthur R. Guerard, M. D., New York City.

A Sketch of the Gradual Perfecting of the Methods of Medical Education

in the Albany Medical College. By Henry Hun, M.D. The Introductory Lecture Delivered at the Opening of the Sixty-Sixth Session of the Albany Medical College, on Sept. 29, 1896.

The Medico-Legal Bearings of the Commitment of the Insane, and the Proposed Amendments to our Law. By W. F. Becker, M. D., Chairman Joint Committees State Medical and Milwaukee Bar Association on Revision of Insanity Law, Milwaukee, Wis.

The Bacillus Proteus Zenkeri in an Ovarian Abscess. By Hunter Robb, M. D., Professor of Gynecology, Western Reserve University, Cleveland, O., and Albert A. Ghriskey, M. D., Former Assistant Gynecologist to the Johns Hopkins Hospital.

The Importance of a Systematic Microscopical Examination of Uterine Scrapings and of Excised Pieces as an Aid to Diagnosis. By Hunter Robb, M. D., Professor of Gynecology, Western Reserve University, Cleveland, Ohio.

The Eye in Hereditary Ataxia with a Report of Four Cases of Friedreich's Ataxia in One Family. By Charles W. Burr, M. D., Clinical Professor of Nervous Diseases in the Medico-Chirurgical College, etc., Philadelphia.

The Use of Nosophen and Antinosine in Surgery. By Claude A. Dundore, M. D., Philadelphia, Formerly First Assistant Surgeon, State Hospital for Injured Persons of the Anthracite Coal Regions of Pennsylvania.

Transactions of the Nineteenth Annual Meeting of the American Microscopical Society, held at Pittsburgh, Pa., August 18th, 19th and 20th, 1896.

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Symptoms of Speech Disturbances as Aids in Cerebral Localization. By J. T. Eskridge, M. D., Neurologist to the Arapahoe County and St. Luke's Hospitals, Denver, Col.

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Obstetrical Paralysis of Infants. By W. H. Haynes, M. D., Assistant to the Professor of Diseases of the Mind and Nervous System, L. I. C. H., etc., etc., Brooklyn, N. Y.

Tumors of the Orbit. By William Cheatham, M. D., Professor of Diseases of the Eye, Ear, Nose, and Throat in the Louisville Medical College, Louisville, Ky.

The Value of Apoline in Neurotic Dysmenorrhœa. By D. S. Maddox, M. D., Marion, O. Reprint from *The Medical and Surgical Reporter*, June 5th, 1897.

Lateral Sclerosis as a Sequence of Spinal Meningitis. By Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Poly-clinic, Etc.

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ORIGINAL CONTRIBUTIONS.

NEURASTHENIA ESSENTIALIS AND NEURASTHENIA SYMPTOMATICA.*

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AT the present day there still exist, not only in the mind of the general practitioner, but even in the minds of specialists, the most vague and ill defined notions concerning neurasthenia. Not only do we hear from physicians of the highest standing allusions made and views expressed in regard to neurasthenia which disclose that this all important affection has never received serious attention or study at their hands, but this is true to a very large extent of neurologists and especially of alienists. A striking illustration of this proposition is furnished by the treatise on the pathology and therapy of neurasthenia by Binswanger which has recently made its appearance in Germany.

*Read before the Neurological Section of the American Medical Association. Philadelphia, June, 1897.

This writer does not hesitate to say that under neurasthenia we are to group all neuropathic appearances which rest on a basis of a general functional disease of the nervous system but which cannot be placed in the same category with the fully developed psychoses and neuroses because of their incomplete character. Surely the pages of medical literature have never before proposed as the definition of a well defined and well known syndrome such as neurasthenia certainly is, terms more vague or more unsatisfactory. It is largely because neurasthenia to the superficial observer seems uninteresting that it is so little studied and yet it is an affection so common, the number of cases so large, that we certainly owe it to ourselves to obtain clear, if not elementary, notions of this disease. In truth, neurasthenia is one of the most interesting affections which we can possibly study. As I will presently point out, its syndrome is as definite and fixed as that of any other disease with which we have to deal. Its boundaries instead of being illy defined are sharply delimited. The various symptom-groups occurring in neurasthenia, though differing widely in detail, always present the same essential features, and, from whatever standpoint they are approached, a harmonious, clinical whole,—a well proportioned and well defined syndrome,—is seen. The work of Binswanger illustrates in reality a backward step. If it is to stand, the writings of Beard, Bouveret, Von Hösling and others to whose labors we owe in a large measure our present notions of the disease, fall to the ground, and all the value of the pioneer treatise of Robert Whyte, now over a century and a quarter old, which differentiates this affection clearly from the allied conditions of hysteria and hypochondriasis, not to speak of the writings of Sandras, Bouchut and others, disappears.

Let us analyze briefly the essential features of neurasthenia. In the simplest form of the affection there exists a more or less marked and persistent diminution of nervous energy and to these symptoms are added those of increased irritability both mental and physical. To the writer it does not seem that much mystery should attach to this condi-

tion, it hardly seems necessary at this day to contend that marked chronic fatigue should present a special syndrome, and yet Binswanger would have us believe that we are dealing with a condition which presents the most vague and indefinite symptomatology. These vague notions of neurasthenia are based first upon incomplete study and secondly upon the apparent inability to systematically arrange and properly classify the facts presented. Neurasthenia is still in the position in which hysteria was until recent years in England and America, notwithstanding the fact that the French had demonstrated unmistakably the symptomatology of the latter affection. Too often neurasthenia is looked upon as a vague affection made up of numerous pathological factors bearing little or no relation to each other. The difficulty partly arises from the fact that the symptoms of neurasthenia are in a large measure subjective while even such symptoms as are objective lack the striking features observed in many other functional diseases. Another circumstance which has been most prolific of misconception regarding the nature of neurasthenia is the fact that physicians have loosely described as neurasthenia symptoms which properly belong to other diseases. Thus the nervous symptoms associated with anaemia, chlorosis and other diseases of the blood, the nervous symptoms associated with the diseases of the pelvic organs or with chronic disease of the stomach have been loosely termed neurasthenia. If the nervous symptoms associated with general somatic or organic visceral diseases are to be termed neurasthenic, we should be careful to bear in mind that they represent something very different from true neurasthenia. I have myself proposed for this spurious neurasthenia the term *neurasthenia symptomatica*. If the fact that there exists a true neurasthenia separate and apart from symptomatic neurasthenia, is once firmly fixed in our minds, much of the confusion clinging to the subject passes away.

The next fact of importance to recognize is that in true neurasthenia, or as I prefer to term it, *neurasthenia simplex* or *essentialis*, in addition to symptoms primarily indic-

ative of the disease, others make their appearance which are secondary in character and importance. Frequently these secondary or subsidiary symptoms are superficially evident or unusually prominent and thus their importance is mistaken and over-rated. Charcot also recognized these differences in the symptoms of neurasthenia, for he separated the symptoms into, first, cardinal symptoms or neurasthenic stigmata and, secondly, secondary or accessory symptoms. In Charcot's group the fundamental symptoms or stigmata are the following: First, neurasthenic headache; secondly, sleep disturbances; third, rachialgia and spinal hyperaesthesia; fourth, muscular weakness; fifth, the disturbances of digestion (nervous dyspepsia); sixth, sexual disturbances, and seventh, mental symptoms. To these Charcot added the secondary or accessory symptoms which group consists of all symptoms which are not essential to the diagnosis of neurasthenia. Among them he placed such symptoms as giddiness, disturbances of the special senses, respiratory, circulatory and secretory, disturbances, disturbances of general sensation, disturbances of motility and febrile conditions.

Charcot in his classification of the symptoms of neurasthenia merely grouped together as ~~the~~ stigmata or fundamental symptoms the most prominent clinical features of the disease. We will find by analysis that these ~~symptoms~~ are not by any means of equal value. Similarly the secondary symptoms of Charcot, which we have just enumerated, are of very unequal value.

If we grasp the conception of neurasthenia, that it is in reality a *fatigue neurosis*, the symptoms group themselves very readily in a logical and orderly sequence. Primary or fundamental symptoms then stand out boldly and with definite relations to each other. They ~~are~~ always symptoms which present the essential characteristics of weakness and irritability and which are always expressive of fatigue. The secondary symptoms are all such symptoms ~~as are~~ adventitious or mere secondary outgrowths of the primary or fundamental symptoms. I can make my meaning clear by enumerating some of the various primary symptoms and

contrasting them with some of the secondary symptoms. Beginning with the sensory disturbances, we have, ~~first~~, a general sense of fatigue or tire. This sensation may be diffused throughout the entire body, but ~~it~~ is generally accentuated in special regions or limbs. It is characteristic of this sense of fatigue, whether ~~it be~~ referred to ~~the~~ head, ~~to~~ ~~the~~ back or ~~to the~~ limbs, that it is, in ~~the~~ simple and typical cases at least, always relieved or lessened by rest and ~~further it is~~ always brought on, if absent, or made worse, if present, by exertion. This readiness of fatigue, ~~this~~ ^{or} general sense of tire, I regard as the primary symptom, if indeed not the most fundamental of ~~all the~~ symptoms, of neurasthenia. Fatigue sensations when they become exaggerated become painful and ~~they~~ are then described by the patient as aches of various kinds. It frequently is a headache, almost as frequently a backache or the ache may be referred to a leg or to an arm. In the latter instance a few questions with reference to the avocation will almost always reveal the reason for the accentuation of the pain in one extremity. Thus, in a collector, the fatigue sensations were most pronounced in the legs, in a physician who used his right hand constantly and for many hours daily in laryngeal manipulations, the fatigue sensation was accentuated in the right arm.

These fatigue sensations, ~~these~~ aches of various kinds, let it be repeated ~~again~~, are primary symptoms. Not infrequently, however, we have associated with these ~~symptoms~~ others which are secondary and which I have in some of my writings termed adventitious. Thus the headache of neurasthenia may be accompanied by a sense of pressure or constriction or by a sense of fullness, lightness or distention. These sensations depending as they probably do, ^{depend} upon disturbances of the circulation are secondary and adventitious. They are not necessary parts of the neurasthenic headache and may or may not be present. Sometimes other sensations are noted, such as throbbing, sense of increased weight, whirling sensations, or vague and ill defined feelings of distress; all of these are secondary in value.

As regards backache, the simple feeling of fatigue referred to the lumbar region, may be complicated by hyperaesthesia, especially over the spinal gutter where it may be distributed, as is well known, in patches; I refer to so-called spinal hyperaesthesia or spinal tenderness. This spinal tenderness, I regard as a secondary symptom—~~as one~~ the indirect outgrowth of a normal fatigue sensation. It is a pathological exaggeration or intensification of the fatigue sensation. The hyperaesthesia, the sense of burning and the deep-seated boring pains, sometimes complained of, are clearly adventitious and not primary. The aching referred to the legs or to the arms, present a similar illustration. It is very frequent to find that in addition to or in place of aching ~~in the limbs~~ the patient complains of throbbing or thrilling or tremulous feelings in the limbs. These sensations are likewise to be regarded as secondary. They are not necessarily present and are clearly adventitious. Likewise, is it with the various curious paraesthesiae of which neurasthenics every now and then complain, such as pins and needle feelings, numbness, prickling or of velvety sensations, all of which belong to the group of secondary symptoms.

If we pause to analyze the various visual disturbances of neurasthenia we find that the same truth is evident. Here the principal symptoms are those expressive of ready fatigue. I will not ~~pause to~~ analyze them in detail, but simply to allude briefly to a few of them. One of the most common statements which we meet with from neurasthenics is that they are not able to read for more than a few minutes at a time, and that if they persist, the letters become blurred and indistinct and that the effort gives rise to pain, generally headache. It is probable that in this symptom there is involved a three-fold weakness of retina, muscular apparatus and cerebral centres. Irritability is noted in the fact that many neurasthenics are unable to withstand any but the slightest exposure to light, the light giving rise to exaggerated and painful sensations. It is for this reason that so many neurasthenic subjects spontaneously begin the use of smoked glasses. These symptoms, ready fatigue and irritability, are primary symptoms. Other

symptoms, however, are frequently present; thus patients will declare that everything appears as though seen through a mist or veil or that objects look exceedingly dull, or, on the other hand, unusually bright, or that objects look as though they were far away or at times excessively large. All of these symptoms are clearly secondary in value; they are all of them adventitious to the primary symptom, namely visual fatigue.

The same difference also obtains with regard to the disorders of hearing. Slight impairment of hearing coupled with auditory hyperaesthesia, great irritability to sounds and noises, obtains in a very large number of cases and these symptoms are beyond cavil primary and fundamental. In addition, however, paraesthesiae are frequently complained of. They consist of various forms of tinnitus, such as roaring, buzzing, whistling sounds and at other times of throbbing, beating or tickling sensations. These are beyond a doubt adventitious and bear but a secondary relation to the fatigued condition of the auditory apparatus. I might ~~pause to~~ point out a similar truth with regard to the disorders presented by the senses of smell and taste but it is hardly necessary. I need only to briefly allude to the excessive sensitiveness of some neurasthenic patients to odors and also to the fact that olfactory paraesthesiae sometimes occur. This is equally true of the sense of taste. The accuracy of the latter is often distinctly lessened and very frequently paraesthesiae are present, so that common articles of food like bread and meat present strange and often disgusting flavors.

When we turn to the motor phenomena we find that these also resolve themselves into primary and adventitious symptoms. Muscular weakness is so pronounced a symptom of the average case of neurasthenia that it was constituted by Charcot one of his fundamental symptoms or *stigmata* and termed by him *amyosthenia*. This amyosthenia is a primary symptom and yet it is frequently associated with other symptoms, such as tremor. Tremor may present itself in a characteristic manner as a fine intention tremor of the hands or it may be limited to certain groups of muscles or

even to a few fibres of a muscle. When present as an intention tremor it is most readily demonstrated in the extended hands. When limited to special bundles of fibres it is most frequently observed in the muscles of expression, notably in recurring twitchings of the orbicularis palpebrarum or of a few fibres of the frontalis or, it may be of a few fibres of the orbicularis oris. These intention and fibrillary tremors are evidently not primary but are adventitious and secondary and should be so regarded. The term primary should be restricted to the amyosthenia itself.

When we turn to the disturbances of digestion, of circulation, of secretion and of the sexual functions, the same general truth is again noted. For instance regarding digestion, the primary symptom is that of digestion enfeebled and delayed; i. e., atonic indigestion—an indigestion also associated with an atonic constipation. Now what are the secondary symptoms that sooner or later make their appearance? To the existing delay of digestion, the symptoms of a gastric catarrh, the result of abnormal fermentation accompanied by the formation of abnormal acids, such as butyric, are added. Evidently gastric catarrh with its abnormal acidity, excessive or diminished, is to be looked upon as a secondary or adventitious condition. The disturbances of the circulation afford another illustration. The coldness of the extremities, the feebleness of the pulse are primary symptoms and expressive of general weakness. The disturbances in the rhythm as manifested by irregular action of the heart or of cardiac palpitation are to be regarded as adventitious symptoms. The circulatory apparatus, together with the nervous mechanism controlling it, is in a condition of irritable weakness and that as secondary outgrowths of this irritable weakness there should be gross disturbances of its rhythmic action is not surprising, but these disturbances must be looked upon as secondary and as not essential to the clinical picture of neurasthenia. The disorders of rhythm may be so great as to mount to most frightful attacks of tachycardia. The various heart murmurs that are occasionally noted in neurasthenic subjects are likewise to be relegated to the secondary group. The loss

of vaso-motor tonus, as made evident by involuntary flushings of the face or other portions of the body, or on the other hand by such symptoms as aortic pulsation, are also to be regarded as secondary.

Again the sexual disturbances also reveal as primary symptoms, weakness and irritability and, in addition, as secondary symptoms, various paraesthesiae, such as pricking, creeping, throbbing or cold sensations. The secondary symptoms here as elsewhere are indirect outgrowths of the primary weakness and irritability.

The psychic symptoms of neurasthenia can be isolated with the greatest readiness. The very first symptom that we note is the diminution in the capacity for study or for intellectual effort, just as the patient is incapable of long continued physical labor so he is incapable of long continued mental labor. To attempt to do mental work, sooner or later, brings on in the neurasthenic, symptoms of exhaustion. If the task be persisted in the fatigue sensations become very pronounced and in addition to headache, secondary symptoms, such as sensations of constriction, giddiness and even vertigo make their appearance.

The next symptom that presents itself is also one indicative of weakness. It consists in a lack of the power of concentrating the attention and this the patient frequently mistakes for loss of memory. Other symptoms of weakness are lack of spontaneity of thought, a diminution in the strength of the will, a condition of general indecision and mental and emotional irritability. These symptoms are all referable to the primary group. In a large number of patients, however, other symptoms make their appearance, symptoms which are clearly secondary in character; they associated with the general incapacity for exertion, the weakness of concentration and lack of spontaneity, there is often associated an apparently causeless, general sense of fear. This feeling of fear may be vague and ill defined and may consist merely of a general feeling of anxiety. More frequently, however, it takes some definite form. The

patient experiences a sudden sense of fear which is uncomplicated and may be slight or ~~may be~~ so intense as to be horrible and overwhelming. Now instead of assuming this generalized form the fear may assume a special form and here we have the special fears which have been described by various writers, notably by Beard. They are fears which find an apt illustration in the fear which a perfectly healthy person experiences when standing at a great height, even though ~~they know themselves to be~~ in a perfectly secure position. In neurasthenics, ~~as is well known~~,* these special fears assume the most aberrant forms. It is hardly necessary in this connection to refer to agarophobia, claustrophobia, and their congeners. Let it suffice to say that all of the forms of fear from the simple and purely generalized form to the most highly specialized forms all belong to the secondary group of symptoms. For some reason Charcot placed the various special forms of fear presented by neurasthenics in a *third* group of symptoms, but certainly if we regard neurasthenia as a fatigue neurosis with secondary outgrowths and complications this formation of a third group of special mental phenomena is not justified.

Neurasthenia is not a vague and ill defined affection, as Binswanger would have us believe. I contend that it is an affection with a syndrome as well defined, as well established, as any with which we as clinicians have to deal. The moment we regard neurasthenia in its true light, namely, that of a *fatigue neurosis* much of the mystery passes away and, as pointed out, the essential symptoms, those directly expressive of fatigue, stand out boldly and prominently and give to the disease its clinical features. The failure to assign to the secondary symptoms their proper value has been a prolific source of error and misconception. Often these secondary symptoms are quite prominent and striking, but they should not throw us off our guard. If the case be one of neurasthenia some of the fundamental or primary symptoms can always be found.

If time permitted I would enlarge this discussion by inviting your attention to the pathology of true neurasthenia, would allude to the studies of Hodge with regard to

* Will the author's name be given in the name of Dercum's

the changes which nerve cells undergo during fatigue and also spend some time upon the histo-chemistry of neurasthenia—upon the probable source of the uric acid which is so often found in excess and to point out how these factors enable us to draw still more clearly the differences between true neurasthenia and neurasthenia symptomatica or spurious neurasthenia. Finally permit me to allude to a condition which I myself have called Neurasthenia Terminalis. It is well known that prolonged and persistent derangement of function may be followed by actual tissue changes. Thus a heart which is constantly overacting, the result of repeated and violent attacks of palpitation, may undergo hypertrophy, or the walls of the blood vessels may become thickened and if the case persists sufficiently long and be associated with deranged tissue metabolism such as we have just alluded to, even atheromatous changes may take place in the vessels; or, again if digestive disturbances persist sufficiently long, secondary changes may ensue, i. e., *terminal* organic changes may occur in the digestive tract. That organic changes may also occur in other structures such as the muscles and even the bones, there can be very little doubt. These changes are often suggestive of premature senescence. When any of these changes are present in a marked degree the case is classed by us clinically according to the diseased condition which predominates. To state the proposition in other words, simple and uncomplicated neurasthenia if it persists long enough, results in actual tissue changes, and if the patient presents himself before these changes are accentuated in any one organ and are still slight and generalized the case should still be considered as neurasthenic, but should be regarded, as I have suggested, as the terminal form. These are the cases which are largely intractable to treatment. The subject merits extended consideration but time will not permit me to more than touch upon this interesting subject.

My object in this brief paper was merely to present in as condensed a way as possible my own interpretation of the symptomatology of neurasthenia and was prompted especially by the publication of Binswanger's untenable and

retrogressive views. I intended namely to point out the difference between true neurasthenia and spurious or symptomatic neurasthenia and also to give to neurasthenia its proper position in our nosology as a *fatigue neurosis*.

PRESIDENT'S ANNUAL ADDRESS.*

By DR. MARTIN W. BARR, M.D.

Chief Physician, Pennsylvania Training School for Feeble-minded
Children, Elwyn, Pa.

GENTLEMEN:—To me this year falls the pleasant duty of bidding you *twice* welcome, for we come together not only for our annual meeting, but also to celebrate the coming of age of our Association. Remembering that Pennsylvania was its birthplace I count it for myself a most fortuitous concurrence of events that calls me on this anniversary to the chair first filled at Elwyn by Dr. Seguin, and that I should be here to welcome back to the work our friend and my former associate, Dr. Alfred W. Wilmarth of Wisconsin.

Born of the inspiration of the Centennial year with such enthusiastic workers as Seguin, Wilbur and Kerlin as its originators, it is no marvel that the Association, passing the period of youthful inexperience, has lived to attain its majority in vigorous proportions. Growing in this time from a membership of six, to one hundred and sixty-three, with institutions and states falling rapidly into line, it to-day adds to its list the names of Polk, Pa., and Chippewa Falls, Wisconsin.

Gentlemen of the Association, let us "press forward." The days of mourning for our fathers are accomplished and eulogies and panegyrics have been too long our theme. Forget them! we would not if we could, as we pursue the paths they opened with such patience and courage, but we must recognize that the plans they proposed have already

*Read before the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons, Orilla, Canada, July 14th, 1897.

been fulfilled. Our work broadens and must broaden,—for one hundred years advance of civilization opens to us new fields of which they could give us only the “peradventure.”

Both within and without, the work assumes new aspects. Closer classification and growing possibilities, drawing clearer and more definite lines between the trainable and the untrainable, are fast changing our school rooms to workshops and art-rooms. The massing and setting apart in happy busy life of such numbers once deemed incapables, simultaneous with the movement of the new education to promote better classification in the schools, has presented a much needed object lesson and called the attention of the public to the study of mental defectives in their midst, and of its bearing upon practical pedagogics.

Classes in sociology, physiology and psychology come to us to observe, compare and report likenesses and differences between normal and abnormal minds. This interchange of thought cannot but be conducive to progress and must influence both their work and our own.

The recognition as defectives of those backward and feebly-gifted children who have hitherto so embarrassed the work of the teacher, has already led to new and better grading of the schools on the Continent, and in London; while with us, Providence, Rhode Island, is taking the lead in a like movement which must soon become general.

The new schools, made up of this backward class, will naturally seek to be benefited by our experience in classification and training, and we shall draw largely from them if indeed we do not absorb them altogether; and it is just here that our work in its second half century takes a new departure. Relegating many of the occupations and means of development first, employed by our pioneers, to asylums which may or may not be attached to future training schools, we shall press forward on the same lines to broader operations with the possibility of the ultimate establishment of communities of skilled artisans working in the various trades and applied arts. Here the imbecile, separated from the world and forbidden to marry, shall become a self-supporting, self-respecting citizen, who in the possession of an

assured freedom—always under careful direction and supervision—enjoys happiness and protection in lieu of ignorance, degradation and ignominy.

In addressing ourselves to work under these new conditions which are rapidly shaping around us, there are several points which conference may simplify and united action accomplish.

History already classes the rescue and training of the imbecile among the wonderful achievements of our wonderful age, and society aroused not only to the existence of such numbers, but also to the rapid increase, and agitated by questions which affect its very being, will soon demand of our century of experience some authoritative teaching as to remedy and redress. Are we prepared to answer the inquiries which must, and indeed, do come to us frequently many times throughout the year, such as:—For what are you preparing the imbecile? How can you secure the greatest happiness to the greatest number? How best render the imbecile harmless to himself and to the world? These are but a few of the many we are called upon to consider; to which might be added a discussion of: How to meet the inevitable demand of the future for trained professional workers—physicians, teachers, and attendants; The advantages to be gained in establishing communities of the feeble-minded; The advisability of seeking national aid in averting general and wide-spread calamity.

These are the practical problems we must grasp if we are to prepare for the momentous issues of this new era which, I might almost say, calls for a new pioneer work. Results obtained from training and also the grade of many applicants seeking training, plainly show that the day of the mere housing and self-help of the imbecile is no longer our one object, while, on the other hand, over-crowded conditions prove that we must educate the public to the difference between idiocy and imbecility. We must make some protest against the forcing into our institutions of the untrainable; and to this end might not an established sequence of manual work, following out the same line of development which we find so helpful in both kindergarten

and sloyd for the benefit of those who can enter upon it, be also a means of protection against those who cannot, and thus the legitimate work of the training school be not lost in that of the asylum?

Lest I absorb valuable time better spent in conference and discussion, I will not detain you by elaboration of these topics beyond a mere presentation.

For the first oft-repeated: For what are you preparing the imbecile? As to returning him to his friends after a few years of training, as the law in some states provides, the objections are manifold. In many cases our waifs and strays have neither home nor friends and the short period allowed, hardly suffices for permanent practical results. After training they have no will to work unless apprenticed to people who understand how to govern without hurting them, and where are they?

Again, the shifting conditions of American life forbid often any certainty as to locality of friends or stability of occupation. We cannot, as they do in European institutions, send the child out assured of that environment for which he has been trained. Indeed we are assured of but one thing when he passes from our care, namely; that his return to the world in almost every instance insures an increase of population not conducive to national prosperity.

As to the second proposition: How can you secure the greatest happiness of the greatest number? Whether within or without an institution, congenial employment that shall prevent deterioration and preserve the self-hood to which he has attained is the *sine qua non*. To him as for the normal must be given "honest work for the day, honest hope for the morrow"—that brief to-morrow of completed toil without anxious care, which is all he may know.

The benefit of such a training as above outlined would not be only the perfecting of our work, but by commanding the attention and respect of the public, tend also to aid in their work of eliminating the feeble-minded from the common schools.

Already our advance along these lines has removed greatly the sense of obloquy formerly associated with insti-

tutions, and this appreciation must increase in proportion as the public comes to understand us. Thus in time we may find their "slow pupils," sifted out and tested in these unclassified ranks already past rudimentary work, coming to form our middle and high grade classes, and we can then train competent artisans in the various trades and crafts in sufficient numbers to really reduce expenses and solve in a natural way the problem of "how to secure the greatest happiness to the greatest number?" But this you will say concerns only the imbecile for whom in low, middle and high grades may be found such occupation, while the future condition of the moral imbecile, the idio-imbecile, and the idiot demands equally our consideration. From these last, who, together with the epileptics, crowd upon us and impede so largely our work, filling the places of the imbeciles who, as I have shown, working at trades, might materially diminish our expenses, we trust the future may yet free us. It is to be hoped that the day is not far distant when they shall here, as in Europe, be gathered into asylums quite apart and distinct from training schools upon whom they are simply a burden, neither receiving nor contributing benefit.

As to the moral imbecile, it has become an accepted fact that he cannot be trained or properly cared for without greater restraints than those belonging to the ordinary training school. To confine him with idiots far below his intellectual grade is equally an injustice to him and a cruelty to those weaker brothers for whom he makes life miserable. A scape-goat for the sins of others, this unfortunate victim of heredity, who must be forever set apart, an inevitable enemy of society, seems doomed to a life-long penitentiary. The question for us is, how to lessen this isolation and atone to a for the unremitting and rigid surveillance necessary.

Enlarged bounds, suitable amusement and constant employment, together with proper facilities for control, should constitute an important department for this class in every institution. Entirely separated yet sharing to a limited extent—conditional upon a good record—in its general privi-

leges, these unfortunates while contributing by valuable labor to the support of the institution might yet find compensations, and a life service of comparative happiness.

How best render the imbecile harmless to himself and to the world? A question, so nearly akin to the case of the moral imbecile, touches also the whole race of weak-wills and animal propensities, and its consideration above all others, marks advanced thought, which, recognizing the effect of heredity, is fast materializing in Legislative enactments regarding marriage.

New York and Connecticut have taken steps towards forbidding the marriage of epileptics, and Pennsylvania records the following act of assembly: "no insane or feeble-minded person and no person who from natural causes as distinguished from accidental causes shall have been insane in the past and no person who shall hereafter have been twice convicted of felony as defined by the laws of the Commonwealth shall be capable of marriage in wedlock and any clergyman or civil officer who shall knowingly solemnize such marriage and any person who shall knowingly assist in procuring or abetting the same including the parties to such marriages shall be guilty of a misdemeanor, and shall be subject to imprisonment for six months and a fine of five hundred dollars both or either at the discretion of the Judge before whom the offense is tried."

This law—assuredly not stringent—will have its place as a check upon the *law abiding*, and must call the attention of the public to need of further protection against the lawless, for history shows that the attempt to legislate for conscience is a vain one.

In nations as in communities, wherever stringent marriage laws are enforced the inevitable result has been free-love, concupescence and prostitution. In dealing with the low and bestial, with the ignorant and weak, the silly and irresponsible, with utter incapacity to comprehend any law but that of self-will, there is nothing to convert or convince, for the moral sense is not there to appeal to.

To such a class, asexualization would come as a double release, freeing them from the power of harming

themselves and society, and granting in all else greater personal freedom to the individual whether without or within institution walls. Once rendered harmless, he is free to gather all he can from life.

With imbecility and its many phases of sexual perversion, recognized as a disease—a sure means of transmitting inherited taint—it does seem absurd that while we wage war upon microbes and bacilli, we turn loose this worse than leprosy to poison the very springs of life in more ways than one, forgetting, "The evil that men do lives after them." Why do we not more closely follow nature's law? All seeds, all buds, do not perpetuate their kind, and we but follow the lesson taught when we shake the bough from which falls defective fruit. We choose and set apart with care the animals best fitted for procreation, and by castration render more docile, because less passionate, the beasts of burden who are to mingle in the common herd. They rove at will free and unrestrained—because harmless. I need not point the moral nor draw further analogy.

Separate the love of one's kind, and the consequent desire to project one's individuality upon the onward current of humanity, and procreation has no element above the mere animal. We all know that with imbeciles, the first is impossible, then do we not best serve them when in loosing them from the thralldom of the second, we release them from restraints thenceforth needless, and therefore open to them greater happiness in individual and in community life?

Sir Thomas More says, "The world is undone by viewing things at a distance." Let not this mistake be ours!

Here, even more than in previous questions, it behooves us to prepare to speak authoritatively and to give when sought, as will surely be, of us an answer that cannot be misunderstood. I say, will—the issue is even now upon us. That which was spoken of with bated breath, and behind closed doors, already begins to be the subject of open discussion, and to appear in reputable journals. I quote from the July number of *The Altruist*:

“Besides being prevented from propagating their kind, the feeble-minded need constant care and training in order that they may use their limited faculties to the best advantage and get some pleasure from their blighted lives. This means complete isolation and special training and supervision, the expense and trouble of which could be materially lessened by the asexualization of those who were decided, by a committee of medical men appointed for the purpose, to be fit subjects for the operation.”

From this severe measure the mind instinctively shrinks, though it is now advocated by many of those best acquainted with the subject; and when calmly considered in the light of modern science, and as a choice of two evils, will probably be accepted as a necessary evil by all right thinking persons. Further, increasing surveillance would be necessary unless asexualization were legalized. But under any circumstances, isolated, and cared for, they would be safe from themselves and society, in congenial company, under no danger of ridicule, using their limited powers for their own benefit, and, in some cases, for that of the community, and in no danger of transmitting their misfortune.

The courageous attitude of Dr. Pilcher, of Kansas, as pioneer, strong to face ignorance and prejudice, has already had its good effect.

The report of the Trustees thus sustains his action: “A great deal has been said in the political press and medical journals of our country about the unsexing of eleven boys by Superintendent Pilcher, the political papers censuring and the medical journals sustaining him. As all forward steps have brought criticism to the person who had the courage to take them—so this humane act brought criticism to Dr. Pilcher. All that would be necessary to convince those most horrified by this act, of the wisdom of it, would be to have known the boys before and after the operation. Those who are now criticising Doctor Pilcher will in a few years be talking of erecting a monument to his memory.”

One of my own Board, Dr. De Forest Willard, of Phil-

adelphia, has already taken steps toward bringing this subject before the public in a circular letter, which, together with the replies received, he has kindly allowed me to use, and which I here present:

"Dear Doctor:—Will you kindly give me your opinion upon the following points. Please indicate your desires in regard to the publication or non-publication of your name in connection with these statements and your wishes will be strictly observed.

1. In what proportion of the inmates of your institution do you consider procreation advisable?

2. In what proportion of the inmates of your institution do you consider procreation possible?

3. What would be the probable effect of asexualization upon their mental and moral conditions?

4. What effect upon their physical conditions?

5. What operation would you advise upon the male; removal of the testes, ligation of the cord, or ligation of the vas deferens?

6. What operation would you advise upon females?

7. At what age would the operation be most effective?

8. Have you had practical clinical experience in this matter?

9. Should a State law be enacted to legalize the operation? If so, what would you suggest in regard to such a law?

Yours truly,

DE FOREST WILLARD."

From the fifty-nine institutions—twenty-five American, and thirty-six foreign, including those of Great Britain, France, Germany, the Scandinavian countries, Austria, Russia, Switzerland and Finland, he received but twelve answers,—nine American, one German, one Scotch, and one English. Nine could give definite answers, and while all agree that procreation is not advisable, they are slow to express an opinion, except that asexualization should be performed only on those of the highest grade, considering that the class to be most feared.

The first question is unanimously answered, "none." The second, an average of 80 per cent. The non-com-

mittal tenor of the replies to the third and fourth, as to mental, moral and physical effects, evidences the limited opportunities for collecting sufficient data, or timidity in expression of opinion. The fifth, sixth and seventh, as to the *modus-operandi*, and proper age, are more explicit,—the majority favoring testiectionomy in the male, and ovariectomy in the female, at or before the period of puberty.

To question eight, five state frankly that they have had no practical experience, and the others give but indifferent answers.

To the ninth, as to Legislative aid, two-thirds are of accord, two see no cause, and one is doubtful of success.

That the replies amounting to but one-fifth of the whole amount should be almost exclusively American, and in the main favorable, shows our confidence in both subject and leader; while the conservatism of the Europeans and their consequent carefulness in the adoption of new ideas may account for the meagre response from abroad.

My own experience, although limited, has been decidedly favorable; three cases of ovariectomy, and one of testiectionomy have resulted in improvement, especially marked in the boy, who has grown—mentally, morally and physically.

My preference therefore inclines to ovariectomy in the female, and testiectionomy in the male, pure and simple; but if one objects to this, a harmless and almost painless operation (although the temperature after it, does run alarmingly low)—vasectomy—is less heroic, and it is said, quite as effective as castration.

Pavone* reports thirty-four cases where he performed vasiectomy for other reasons, in normal persons with marked success.

On the whole the result of Dr. Willard's investigation shows a readiness to advance, wherever united action shall ensure encouragement, in the more difficult task of educating the public mind.

It remains therefore for us to confer upon a subject so

*D Policinico. No. 15, 1896.

vital, and as I doubt not that we are of accord, to devise ways and means, by which in addition to mere official utterances we may best further Dr. Willard in legalizing methods which shall alike benefit society, these unfortunates, and ourselves, the custodians of the race.

We cannot hope to convert the public in a single day, nor to secure Legislative enactments in a single year, but patience and indomitable perseverance in presenting the subject must finally overcome mere prejudice and prove conclusively, that this can bring but gain to society and the individual without loss to either.

Col. A. C. Holt,* a Southern legal authority, says that we have no clause in the Federal or State constitution which forbids emasculation where necessity demands it.

Dr. Willard has drawn up for suggestion the following outlines of a resolution for an act.

"AN ACT FOR THE PREVENTION OF IDIOCY."

"WHEREAS: Heredity plays a most important part in the transmission of idiocy and imbecility;

"Therefore, be it enacted by the Senate and House of Representatives of the State, that on the first day after the passage of this bill, it shall be compulsory for each and every institution in the State, entrusted with the care of idiots and imbecile children, to appoint upon its staff at least one skilled neurologist, and at least one surgeon of recognized ability, whose duty it shall be in conjunction with the Chief Physician of the Institution to examine into the mental and physical condition of the inmates.

"If in the unanimous judgment of this committee of experts procreation is unadvisable, and there is no probability of improvement of the physical and mental condition of the inmate, it shall be lawful for the surgeon to perform such operation for the prevention of procreation as shall be decided safest and most effective.

"This operation shall not be performed except in cases that have been pronounced non-improvable, after a year's test; and in minors, the consent of both parents, or the

*J. M. Frizler, paper read before Central Texas Medical Society at Waco Jan. 15, 1896.

guardian, if living, shall be procured,—in writing if possible.

“Penalty, \$100 fine for the non-fulfillment of any of the provisions of this act.”

The future has for us yet another question—another work in which we are called to press forward.

What are we doing for those who are to follow us? For what are we training our assistants? The trend of the times shows a demand for specialists. We take a young man fresh from a medical college, filled with theories, with little or no practical knowledge, into the weary rounds of institution duties which in the best are yet the same—and with the idea of specializing uppermost in our minds, we immure him, bend him, break him, impose our personality upon him, and let him have no thought beyond that of the superintendent and his senior assistant. Train him? We violate the law of personal liberty, destroy his manhood, teach him that life, as well as nature, has its night-shade berries, and what have we at the end of ten years? A man in years and a dwarfed mind, despite nature's original purpose. In fact, he ceases to be a man and becomes an automaton, a lay-figure—the creature which in our arrogance we pride ourselves upon having made, blindly ignorant of having perverted from natural channels the gifts of God.

I have in mind one hospital, where I gleaned an experience literally by the sweat of my brow and the work of my hands, when I occupied an anomalous position, not having the authority of the supervisor nor the personal liberty of the attendants; being left entirely out of the superintendent's confidence, I lived apart from all society with only study for recreation. How can a man's mind flourish, his faculties live, in this refinement of cruelty?

Let us cast aside these musty ideals and learn a better lesson from the creative Florentine artists of the Renaissance, to whom art meant, “the embellishment of the daily life.” *

There should be better opportunity for choice of material unfettered by personal or political influence. Then with good men and women to work with, we should see to

it that there be no cases of arrested development or crushing out of individuality. Would it not be well to bear this in mind in training our assistants who are to lead the future medico-pedagogic schools; and equally so with all assistants in the various departments both higher officers and attendants, whenever we recognize earnest devoted purpose; not only permitting, but encouraging a freedom which shall further this, and, even at the cost of a few mistakes, go to build up a true motor force?

The enlarging of existing institutions, the growth in numbers, the possibilities demonstrated in methods of training and the recognition of a class who will surely come to us, bringing to a much higher figure the one hundred thousand which late statistics give—all these, coupled with the need of greater facilities for training workers for all departments, point to a third epoch in our history, where, having developed, first, School, second, Institution, we now come to add the more extended sphere of Community Life.

Assuredly, if we are to rise to the responsibility of the times, to grapple with this enemy, one hundred thousand strong, which enters all homes alike and threatens the very life blood of the nation, we must enlarge our borders and extend our operations. We need space, and yet more space, and who than we are better fitted to claim it?

United and persistent warnings on our part must convince the most skeptical, and in less than another decade the return of the imbecile to the world will be deemed almost a crime, and opposed to all ideas of sound policy.

The wonderful Colony of Mercy at Bielfield, Hanover, the efforts of the Industrial Colony Association with us, and the inauguration of the various Child Republics following close upon the success of W. R. George's philanthropic experiment, should command our attention and generous emulation, knowing, as we do, that these must number of our class not a few.

The National government has provided for the Deaf-Mute, the Negro, and the Indian—then why not for this branch of population increasing as rapidly as they, and becoming yearly more inimical to national prosperity?

A reservation set apart, affording facilities for agricultural pursuits as well as all the varied industries of a town, would provide an outlet for the surplus population of our institutions, to find there a home with definite life aims constantly realized. Such a colony under such restrictions and protective care as our experience has proven is essential, a congregate number of institutions so to speak, each with its own corps of officers and supervisors might in time draw largely upon us for its inferior force—sub-assistants, attendants, and foremen in shops and work-rooms—which we, if relieved of extraneous burden, and training with definite aim, could readily supply: a community not of paupers, but of honest laborers living under a system of “wise protection,” insuring the personal liberty and personal responsibility which alone renders permanent the moral tone.

It was an axiom of the Romans that purity of descent preserved the harmony of both public and private life.

To the Greeks we ever turn for pure ideals, and in the light of the nineteenth century, Spartan customs far from cruel, by preserving the integrity of moral law, forbade the filching of the great gift of life; granted according to the will of the gods—Divine!—clutched at and hurled through ignorance or passion—Infernal.

“The sable land—flood from some swamp obscure,
That poisons the glad husband-field with death,
And by destruction bids its fame endure,
Hath not a sense more sullen, stagnant and impure.”

NEURASTHENIA.*

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burgh Medical Society; West Virginia State
Medical Society (Honorary).

“NEURASTHENIA” is not accepted by all the profession as a term expressing a wide meaning. In fact, it is a word to cover our ignorance for want of a name for the existing condition, they say. However, “neurasthenia” possibly expresses the condition better than any other, and as it is established in medical literature we shall not get rid of it.

It is not a disease, but a condition. It is not limited to any part of the nervous system, but is extremely generalized. It is more often associated with other functional diseases than existing alone. In fact this is true to such a degree that many medical men deny its existence as a separate trouble; but symptomatology and pathology both point in the same direction, showing a well marked clinical picture.

Causes: Heredity, most fruitful of all. Other causes are tuberculosis, inherited syphilis, strumous diathesis in parents, gout, consanguinity (the latter possibly more neuropathic than neurasthenic). Further causes are; example, defective education, etc. Never tell a child or others in its presence that it is nervous. Subordinate that nature to all others. Too close attention to school and especially to set

* Read before the South Pittsburgh Medical Society May 10th, 1897.

studies is dangerous. Excesses in alcohol, drugs, tea, and coffee, dissipation, sexual excesses, continued loss of sleep, etc.

Long continued sedentary lives such as teaching, banking, stenographing, etc., without proper out door exercise and vacations often prove most disastrous. Any great strain, uncertainty, excitement or worry may develop neurasthenia. A number of times have I had to advise teachers to quit the school-room and book-keepers, bank tellers and others to seek a change of scenery, atmosphere and climate. Sometime even a change of vocation.

The symptoms are legion. In many will be found the stomachic and cardiac crises, atonic dyspepsia, gaseous eructations, palpitation and intermittent pulse. These symptoms we often find in men still attempting to attend to business. They have to be assured and reassured by their physician in order to keep up their courage. So long as they are near a street car line or any other method of readily reaching help or home, or even accompanied by a small child who can run for aid, the symptoms are at abeyance. But so soon as they are beyond reach of anyone, a fear comes over them that an attack may come on and the patient becomes pale, perspires freely, heart palpitates, breathing is labored, gaseous eructations, fullness in precordial and stomachic regions—a pitiable condition. They are moral cowards. With others, mostly women, there is an indescribable uneasiness, a fear that something will happen, often that death or insanity will overtake them. Patient complains of muscular weakness, easily fatigued, sometimes muscular tremor, tendon reaction easily exhausted. One may complain of feeling tired, dizzy, heavy, a feeling of uncertainty, formication and vague sensations. Visual weakness and disorders of hearing, smell and taste may be present.

Patient is easily fatigued mentally or physically. Also disturbances of the digestion, secretion, circulation and the sexual functions exist.

Pathology. Little is known as to the true pathological condition of neurasthenia. In a great measure it is spec-

ulative. The most plausible theories to my mind is a toxic condition of the fluids of the body. The uræmic and lithæmic diatheses the most often found. The neuron theory advocated by Dercum of this country and one or two authors abroad leads to a better understanding of the physiology and pathology of the nervous system. Many of the profession look upon nervous diseases as something beyond their domain; that it is to be relegated to the specialist; that to him alone belongs the province of seeing something more than an abyss black as the river Styx. This is a very great mistake. Until we associate the nervous system with other organs; until we associate nerve cell and nerve tissue; until we see that it is not a system, independent, but a part of a great system, each dependent upon the other, in its correct physiological action as a whole, will it be so. We must apply to the nervous system the pathologic principles we do to any organ or system. The brain, cord and nervous system must be studied, as coming under the jurisdiction of the general pathologic law governing the system as a whole. Nerve cell and nerve fiber is not governed by a pathologic law peculiar to itself. Van Gieson has said so tritely that I can do no better than quote him: "The nervous system is a part of the organism as a whole and must be amenable to the same laws of disease and decay."

Diagnosis. Neurasthenia simplex is readily recognized; but when it is association with organic trouble or accompanied by other disease, functional or otherwise, we may have a very complicated clinical picture. I have known traumatic neurasthenia, possibly complicated by the presence of hysterical symptoms, to be diagnosed as a true hysteria. Also have I seen some of the psychoses confounded with neurasthenia. The psychosis has been taken for the inability of intellectual effort of cerebral neurasthenia.

Prognosis. Neurasthenia is said to be chronic in its course as most nervous and mental troubles are. I deny that many nervous troubles are chronic, because of the time to cure. Just as well compare the course of typhoid to that

of cholera morbus and say that typhoid is chronic. Many cases, however, are chronic, as are other cases of disease, beginning as acute. It is a condition of slow recovery, but many times under proper treatment uneventful.

Treatment. Rest, and in many cases, absolute rest in bed. The patient is to go to bed at an early hour and rise late. Serve the breakfast in bed in severe cases. I have followed this plan with great success. Twelve to sixteen hours in bed and some cases the full twenty-four hours. Massage over the abdomen and stomach following the course of the colon; especially when indigestion and constipation are present. Massage the extremities well but gently. Warm sponge bath at bed time and passive motion of joints. These are to be done daily on retiring. Mild faradism two or three times a week. These are to take the place of exercise. These increase the metabolism. I find this is not so successful at home as when the patient is sent away, either to a hospital or preferably a private place. Only a few months ago I saw a very rapid recovery of a most aggravated case by this treatment in a private place.

Food is next important. Milk and eggs is the sheet anchor. Egg lemonade (egg phosphate) is excellent. Milk can be taken by almost anyone in small quantities oft repeated, but some cannot take it. Recently I treated a case who protested, but I insisted, rewarded by two or three attacks of what proved to be extremely severe biliousness, followed by copious vomiting and of course a relapse each time. I put my patient on malted milk with most happy effect. I had no more bilious attacks to contend with and my patient went on to rapid recovery. So soon as exercise is safe, driving is one of the best, provided the patient enjoys it. I have found that any exercise in which the patient takes no interest is to be abandoned at once. With the beginning exercise, cold sponge baths in the mornings may be commenced. Many cases need no drugs except to prescribe occasionally for indigestion or acid urine and occasionally a weak heart. When found necessary to give other drugs the following have been found to do good:

Iron and quinine (bark and steel), phosphates and phosphites, hypophosphites, strychnia, if there is no irritability of the nervous system.

Moral suasion and moral impression. The one thing indispensable is to gain the confidence of the patient. I have seen decidedly good results from a trip to the seashore or to some of the numerous springs when it is not necessary to put the patient to bed all the time. For headaches, joint-aches, bone-aches, etc., accompanying these diseases, I have been using Antipyrin since 1884. Sometimes I combine it with Caffein citrate or Sodium Salicylate. **R.** Caffein citrate, gr. ij to gr. iv; Antipyrin gr. xxx; Elix. Lactopeptine or Elix. Simplicis, oz. j. Misce. Sig.: Teaspoonful every hour till relieved. **R.** Sodium Salicylate and Antipyrin aa gr. xxx; Elix Lactopeptine or Elix. Simplicis, oz. j Misce. Sig.: Teaspoonful in water every hour till relieved. This is a good prescription where there is any rheumatic diathesis to aggravate the pains.

I find that a small dose oft repeated usually acts nicely. However, I have given Antipyrin in gr. x and even gr. xx at a single dose. There is only one objection to Antipyrin noticed by me. If there is an elevation of temperature it is likely to produce too severe a diaphoresis. If the stomach is irritable the sodium salicylate, though the dose is small, may produce emesis.

TREMOR AND TREMOR-LIKE MOVEMENTS IN CHOREA.

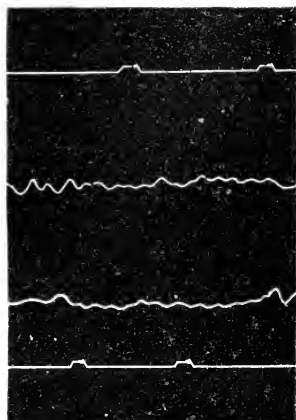
By DR. J. H. WALLACE RHEIN, Philadelphia.

Chief of Clinic for Nervous Diseases, St. Agnes' Hospital; Medical Electrician to Orthopædic Hospital and Infirmary for Nervous Diseases; Instructor in Neuropathology, Polyclinic Hospital; Bacteriologist to Elwyn Training School for Feeble Minded Children.

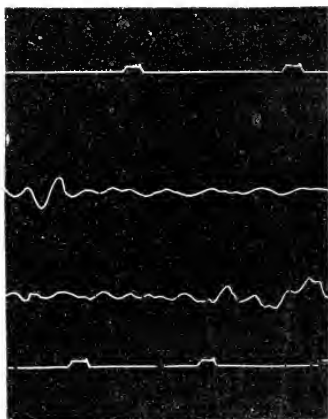
WITHIN the last few months I have seen a few cases of chorea which presented some unusual and novel features. We are accustomed to think of the movements of chorea as awkward, incoördinate and irregular. The affected limbs are agitated in a most capricious and fantastic manner, in fact it is the irregularity of the movements which has been always considered as characteristic of the malady, so much so indeed that the older writers spoke of the jactitations, as an insanity of the muscles.

In the cases just referred to, details of which will be given later, the muscles are not agitated in the manner just described. In some the movements have assumed a rhythmical character, while in others a true tremor was present which either replaced or accompanied the usual clonic movements.

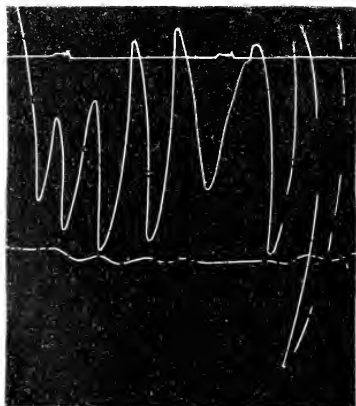
The case that first led to this brief study was seen at the dispensary for nervous diseases at the St. Agnes Hospital. The patient, a girl of thirteen years, presented herself for the relief of a tremulousness in her right hand, which she had noticed for a year back. A careful study revealed the presence of a tremor not alone of the right hand, but of the head and of the hand on the left side. There was no tremor in the lower limbs, but instead irregular inconstant motions, quite typically choreiform. At once



CASE I.



CASE I.
Showing effect of intentional effort.



CASE II.

it was suspected the child was suffering from chorea and the other symptoms together with the subsequent history confirmed this diagnosis.

The family history was negative. She had suffered from scarlet fever at six years of age from which she had recovered entirely. In early childhood she had measles, diphtheria and whooping cough, but never rheumatism. At four years of age after an attack of acute indigestion she had a number of spasms, lasting off and on for twenty-four hours, but has had none since. She had not yet reached menophania. She was anæmic, had daily head-aches, was emotional and thin. Her appetite was fair, the tongue coated, the bowels regular and she suffered from indigestion. There was no nystagmus or loss of power. The knee jerks were slightly increased, equal on both sides, but there was no clonus. A soft systolic murmur was heard at the base of the heart. Her pupils reacted normally and there existed a slight degree of hypermetropia.

The tremor was rhythmical and fine, and as before stated involved both arms and hands and to a slighter extent the head. The tremor was about the same on both sides, there being seven vibrations per second on the right, six on the left. When voluntary muscular effort was attempted, the tremor became slightly more rapid and a trifle larger. It was not constant during muscular inaction; the interval of rest being only a few seconds. It seems a plausible theory that the tremor had for its origin the same cause as the chorei-form movements observed in the legs, and this is confirmed by the subsequent history of the case. When the patient was placed in bed and given the usual treatment for chorea, both the tremor and the chorei-form movements disappeared entirely. (See tracing.)

In the second case, a girl of eleven years, the movements were vibratory and rhythmical and very suggestive of a large tremor. They were distinctly more like a tremor than like the movements of chorea. They occurred about four times a second and were not continuous. Intentional effort, such as lifting a spoonful of water, or taking a glass of water in the hand, made little or no difference in the

character of the tremor. They were not present during sleep and were only slightly controlled by efforts of the will. The vibrations on the left side were large and occurred four times a second; on the right side much smaller but synchronous with than on the left. Voluntary muscular acts and voluntary restraint had practically no effect upon the motions. The general appearance was typical of chorea. She had the facies choreica; her physical condition was fairly good though her digestion and appetite were poor; the bowels were irregular and she was restless in her sleep. The knee jerks were capricious; there was no loss of muscular power. A low hypermetropic astigmatism existed and there were slight remains of the pupillary membrane. Otherwise the condition of the eyes was negative. This was her first attack of chorea and began in February of this year, after an emotional disturbance. The family history is negative. The patient has had measles and chickenpox but no rheumatism or scarlet fever. Otherwise the previous health of the patient had been good until the onset of the present trouble, which dated five weeks prior to her applying for treatment. As she was an out patient at the clinic, it was not discovered whether she eventually recovered entirely or not. Under the usual treatment for chorea she improved immensely and then disappeared from observation. (See tracing.)

The third case, a girl of thirteen years of age, presented movements very like those described in the last case. The family history was negative. She herself suffered from measles in early childhood but had never had scarlet fever or rheumatism. At eleven years she suffered from an attack of appendicitis. The present attack began in Oct., 1894, two months prior to her applying for treatment and was her first attack. The movements were left sided, coarse and rhythmical, resembling as in the last case the tremor of disseminated sclerosis. During rest or muscular inaction it was often absent, but when she attempted to drink a glass of water or perform a similar fine muscular act, the tremor became at once very much worse. There were no other symptoms of disseminated sclerosis. The knee jerks

were slightly irregular. There was no loss of power, the dynamometer registering sixty on the right, on the left, fifty-seven. She had the facies choreica. Her general condition was otherwise good save for a slight systolic murmur at the base of the heart, probably hæmic in origin. There was slight hypermetropia. Under treatment the patient recovered.

In the fourth case, there was besides true choreic movements a fine tremor of the hands. The patient was a girl of fourteen, with a negative family history. At five years of age she had diphtheria with nephritis following. Otherwise she had enjoyed good health, except for attacks of chorea which had recurred every Spring and Fall for the last six years.

The present attack began in March, 1896, a few weeks before her application to the hospital. It began in the left arm becoming rapidly general. The movements were quite marked though not violent. Upon examination it was observed that there was in addition a fine rhythmical tremor in both hands. It was not constant, but would come and go, and was of such brief duration as to prevent a careful study being made. It is identical to the tremor observed in the first case, but of shorter duration.

The chorei-form movements were controlled by volition slightly, and by willed muscular efforts completely; while during rest they were continuous. She had the choreic face and appeared anæmic. The digestion was fair, the appetite good, the bowels regular and she slept well. There was a soft systolic murmur at the base of the heart and a diastolic murmur transmitted to the base of the sternum. The pupils were normal; the knee jerks were capricious. The ultimate outcome of this case cannot be definitely stated as the patient returned but a few times to the clinic.

In the fifth case a condition existed very similar to that presented by the last case. The patient was twenty-one years of age and had a history of having had previously eleven attacks of St. Vitus' dance. In 1887 she was admitted to the Orthopædic Hospital and Infirmary for Nervous Diseases under Dr. Osler, in one of these attacks and

remained three weeks, recovering entirely. There was no record of the tremor at this time, nor indeed until the present attack. There was nothing of note in the family history bearing on the case. She had measles in early childhood, but has never had scarlet fever or rheumatism except at the onset of the present attack when she complained of fleeting pains in the knees. The present attack is her twelfth and followed a fright by a dog. The movements began on the right side, involving first the hand and arm and then shortly spread to the left side becoming finally general. The movements were continuous and typically chorei-form. Examination revealed the presence also of a fine rhythmical tremor in both hands. The tremor was constant and was very much increased by efforts of intention, as was true also of the gross chorei-form jerkings. The general condition was that usually met with in chorea. She appeared anemic and had the choreic face. The digestion and appetite were poor, the bowels regular. There was a loud systolic murmur at the base of the heart probably hamic in origin. The patient was admitted to the hospital, where she improved greatly under treatment.

In 1896 the writer read a paper before the Philadelphia College of Physicians, which embodied the results of a study of the movements of chorea, made by Dr. S. Weir Mitchell and himself. The following conclusions were drawn: There are cases which show some at one stage of the disease, some throughout their course, an absence of movement during rest and require muscular acts to develop what may be either mild or severe chorei-form movements; (2) there are cases in which the movements are continuous during rest but become greatly increased on intentional effort; (3) there are cases with severe chorei-form movements, which disappear when muscular acts are performed; (4) the movements in some cases seem to be unaltered by voluntary muscular efforts; (5) there are cases which present during their course more than one of the types described.

Since consummating this study the case first cited in this paper came to my notice, and it brought to mind the

other four cases here recorded which had been seen in the past, and in which the tremor had been noted but its significance overlooked.

In three of the cases there existed aside from the typical chorei-form movements a fine rhythmical tremor of the hands. These cases presented the usual symptoms of chorea; in two of them there was a history of previous attacks. Save the tremor there was no symptom which was not typical of the disease. The signs of organic spinal cord disease were wholly lacking and no other cause for the tremor could be elicited. Furthermore there was, under the usual treatment for chorea, an improvement in the tremor along with the disappearance of the choreic movements. In the remaining two cases the movements were large, coarse and rhythmical, but without the irregularity and awkwardness of the typical choreic jactitations. It may be described as a gross tremor and is not unlike that of disseminated sclerosis, except that it was rhythmical. There was no other symptom of the latter disease.

It may be concluded (1) that a tremor exists in some cases of chorea, replacing in part the usual movements of this affection or may occur in association with them and (2) that the movements in some cases differing from the characteristic choreic motions, are rhythmical and vibratory resembling a large tremor. I have been unable to discover any reference to these phenomena in the text books or in the literature of the subject, hence it would seem to be an original observation and an important addition to the syndrome of symptoms presented by the affection called chorea. Nothing definite can be claimed as to the frequency of these phenomena as they are illustrated in a small number of cases.

In conclusion I take pleasure in thanking Drs. S. Wier Mitchell, Lewis and Sinkler for the privilege of studying some of the cases, and Dr. A. A. Eshner for making the tracings.

SUICIDE.*

By C. H. HUGHES, M. D., St. Louis, Mo.

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THE question of suicide has its moral and physical aspects, or rather its purely moral and its physio-moral points of view; i. e., the question of responsibility to "God who gave" and the suicide's friends who have claim upon his life and its valuable use to Him and to them and to the man himself who may be allowed to have some personal rights in the premises; the Creator's claim to the continuance of that life being always conceded to whatever extent the same may, by reason and Holy Writ be established, "for God gave and God taketh away," as appears in life's story from its beginnings in "the Garden," the destruction of the earthquake and pestilence, the lightning's wrath and ocean's storm. God oftimes sets but little value on a single life, as the world's woe and death under operation of nature's laws approve.

If we look from nature up to nature's God, we see that God and nature in their general providence deal with human life with unselfish and unsparing hand,

"So careful of the type she seems
So careless of the single germ."

Individuals of genera and species in animal and vegetable life come and go, but the type of the animal and plant is maintained. Like the great rivers of earth whose waters are continually disappearing in the sea, they go on forever,

*Read before the Missouri State Medical Association at St. Louis, May 19, 1897.

at least, apparently, for rivers have dried up, though seldom, and seas have disappeared.

The strongest moral argument against self-destruction on the part of man, especially who has others dependent upon him in weakness of maintenance or strength of affection, is the golden rule, "For whatsoever ye would that men should do unto you do ye even so to them," and, conversely, it is the truth of truths of moral duty and conduct. And in this world of woe and weakness in human conduct where the wills of so many grow

"Weak and powerless as a trembling king
When millions rise up hungry,"

who has not some other one dependent upon himself for affection and support or who has not around his "heart-strings" twining the tendrils of some other heart; it may be the unquenchable affection of a fond forgiving mother; may be a brother or "a nearer one and dearer than all other." Thus it is that "no man liveth to himself and no man dieth to himself," as the Scripture saith, and thus are man's social relations and consequent obligations such that, abstractly speaking, no well man has a right to take his life, because he has no moral right to violate the moral code of duty to his God, his fellows or himself. The welfare of his brother is upon him. He is in part his brother's keeper, notwithstanding Cain's disclaimer after his great crime. And if true to himself, he "cannot then be false" in duty "to any man."

A man cannot do as he pleases with his life more than he can with his money, without peril to himself or others, unless he pleases to do the proper thing. In the social and moral world, the Scripture saith "we are members one of another," that is a man who is morally and physically healthy.

Besides, life is a gift from God and ought not to be under-valued or polluted or destroyed, that is when it comes to us pure and unpolluted. This is the general law taught by revelation and revealed "by sight of science" likewise.

But there are circumstances and times and places and

seasons when suicide is duty and devotion, a commendable courageousness and a god-like heroism, a blessing and a rescue to thousands, a filling of the law of love that what you would that others do for you, that you should do for them.

There are times and places and circumstances when the *argumentum ad hominem* and the voice of God approve of *felo de se*. That is, if we may reason from man's nature (physiological and pathological) as we reason from the physiological inanimate nature up to nature's God and man's duty under God.

In the Book of books, it is written that Judas, after the betrayal, went out and hanged himself, and so he ought, and no word of condemnation of that proper and timely suicide of that greatest of ingrates is recorded in the Bible.

The specious plea that as the gift of life came unbidden, it may be destroyed at the pleasure of the involuntary recipient, loses some of its force in the fact that it is generally voluntarily accepted as a precious gift after the age of discretion, and obligations to live are incurred by ties voluntarily formed and duties voluntarily assumed. This argument is again offset somewhat by the fact that man's volitions are much the result of environment, education and the predestinations of hereditary entailment.

And herein lies the proof that every man who lives is not bound in honor or in morals to live till natural law kills him despite every adverse environment, every affliction, every inherent vicious endowment, every entailment that insures misery to possible descendants and unhappiness to all allied to him.

On the contrary there exist those in whom suicide would show the highest of virtue in themselves and prove the greatest of blessings to mankind. To suicides the world owes much of its moral, physical and mental advancement. The records of history are not wanting in the proofs. The suicides have done as much good as the martyrs.* The lat-

*What a blessing would Nero, Caligula or Napoleon have conferred upon the world by self destruction early in their careers?

ter by their example stimulating to heroic endeavor and sealing the truths of conviction, the former by ridding mankind of its weaklings and of breeds of weak and unworthy progeny that might have sprung from their loins unfit to live and do manful combat in the battle of life, ridding the world of a race of mental and moral weaklings and cripples, doing by their own hands what Lycurgus did for the Spartans. It is cowardly for one to destroy himself because the battle of life goes against him; it is profaning the temple to destroy it because peace and joy does not always reign within it, but when the consciousness exists, founded on indubitable proof, that to live on is to be doomed and to doom generations after to the misery of a weak and unstable and wrongly endowed nervous organism, suicide has in its elements of virtue. A world of woe has often been averted by timely suicides. Suicide is the pruning knife of civilization. It cuts out the weak and the miserable from the social tree and destroys neuropathic and psychopathic vines that would but cumber the earth with more sin and folly and crime than it now has to endure.

Not all men who commit suicide ought and more ought to that do not, for the good of the race.

A selfish man, living as though all the world was made for his sport or gust, giving free course to every impulse of lust and passion, bringing the natural satiety, disgust, disappointment and disease on himself of unregulated indulgence, who destroys himself, because he has made himself miserable and unfit to live, is a benefactor to his race in taking sudden leave of the world and the world should "speed the parting guest." The act, though selfish and thus unmanly, is also unintentionally philanthropic to his race, because he thus insures the cutting short of his kind, so far as he is concerned in the community.

If the breeding of the unfit to live could be stopped by more frequent suicides of the morally and physically unstably and viciously endowed—the neuropathic cripples, the mentally squint-brained and obliquely visioned, the lame and halt and blind in mind and morals, the cataract-covered consciences—the millenium of earthly happiness would begin.

As it is and has been, the suicides, though they have given much sorrow in special instances, they have as a rule, done the world far more good than harm by taking themselves away, their departure averting the compounding of the world's misery through the multiplication of such miserable beings, unable, unfit or unwilling to lift and carry their share of life's burdens or do a proper and manly or womanly part in the world's work and duty.

Though to the well endowed,

“Duty requires we calmly wait the summons,

“Nor dare to stir till Heaven shall give permission,

“Like sentries that must keep their stand,

“And wait th' appointed hour till they're relieved.”

and though

“Those only are the brave who keep their ground,

“And keep it to the last.”

and though against self-slaughter “there is a prohibition Divine,” it is against the well and the strong, the rightly dowered of brain and nerve. It holds not against weak, unstable organisms whose mental reactions to environment give pain and despair where others feel pleasure and hope or courage so mingled with mental pain that adversity gives to life's battle a zest as to warrior on battalioned field.

To the theologian, suicide is always sin; to the philosopher, it may appear as cowardice, crime, selfishness or virtue. To the physician, it may appear as to the divine and the philosopher. But to him, it may also appear as a virtue and a benefaction to mankind, according to the causes which may impel to it or suggest it, and the conditions which surround it and the consequences averted by it.

Suicide to the psychological scientist has its *odi et amo* aspects, as well as its phases of indifference. The time and the place, the man and the circumstance, anti-natal or posthumous conditions giving significance to the subject.

He sympathizes with the

“One more unfortunate,

“Weary of breath,

“Rashly importunate,

“Gone to her death,”

and asks not only the same questions as Hood, but many

others. Among them, whether she might have borne a race of mentally unstable, incapable of contending successfully in life's unequal struggle and adding to the misery of unborn generations a crop of suicides, imbeciles, dements or otherwise mentally maimed.

He knows she must have had a mother and likely a brother, and doubtless "a nearer and yet dearer one far than all other," for most maidens of her age, "so young and so fair," have felt reciprocal and reciprocated tender passion, and he looks with compassion on her sin, knowing that now not only "all that is left of her is pure womanly," but that she was probably "more sinned against than sinning" and that much that preceded her rash act was both humanly and womanly.

To the student of psychiatry, physiology and psychology "to be or not to be" is not all the question of suicide, and the soliloquy of Hamlet falls far short of answering it.

"Whether it is nobler in the mind
 "To suffer the slings and arrows
 "Of outrageous fortune,
 "Or to take up arms against
 "A sea of troubles
 "And by opposing end them,"

is the egotist's view of the subject, and that egotism may and often is morbid in the self-murderer, who considers not his value to the world or the world's need of him and the effect and value of his life to others, but solely the world upon himself, as "a sea of troubles" to be ended by his own suicidal hand. Hamlet's whole soliloquy is ignoble and selfish. He showed the morbid egoism of the insane, as well as some simulation in his conduct. To take up arms against a sea of troubles and by manfully opposing, end them with face unflinching to the foe and without retreat in suicide, is noble, brave and manly. But to so oppose them as to die by one's own hand, "to sleep, perchance to dream" and to pause at the contemplation of "what dreams may come" in that self-induced death, is the ratiocination and indecision of agnosticism without settled convictions of the hereafter.

The fear of bearing "fardels" and of "the proud man's contumely" and the rebuffs "that patient merit of the unworthy takes," is not justification of suicide, except in the mind of the overwrought insane.

The real extenuation of suicide when it is excusable in the sane, is in the fear and proof of consequences to others than ourselves of living. The hereditarily dowered with a deadly heritage of transmissible brain instability, incurable disease and mental and physical woe, may entertain the idea of suicide with a view of its practical application. No man has a moral right to live and breed a generation of lepers and moral vipers. No man has a right to so live as to people poor-houses and penal institutions with crime and famine-cursed defectives. No man has a right to so live as to give to the state a heritage of lunacy, imbecility, deaf mutism or blindness, and to such as can not otherwise than so live, it were a virtue to die.

That law which seeks to prevent suicide without discrimination and encourages the conception of the unfit, as some of the short-sighted regulations of Mr. Anthony Comstock moulded into law, do, is not always in the right line of conserving the welfare of man.

There are circumstances and occasions, times, places and individuals, of which, where, when and of whom it may be said;

"What Cato did,

"And Addison approved,

"Can not be wrong."

Yet I do not approve of Cato's *felio de se*; Cato took his own life under the chagrin of Cæsar's triumph. Cato's nerve tone had failed. His trials and disappointments had broken him. Prostrated by over brain strain he had become cerebrasthenic. In our day he would have been advised to take treatment for neurasthenia and instead of being applauded he would be pitied for his weakness. Cato was out of harmony with his surroundings. He was not his normal, courageous self, doing and daring the worst as it was his nature to do, in his healthy mental estate. His

great brain gave way under the great strain of his unexpected reverse of fortune, the weight of his trials, the oppression, chagrin and mortification of defeat. He misinterpreted her misfortune in an abnormally melancholy light, and in a morbidly despairing moment, he blotted out a life which he insanely thought was no longer worth living. But when he did the deed, it was not Cato's hand, but disease that did it.

SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

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SYPHILIS is one of the most frequent causes of organic disease of the central nervous system. Among every one hundred patients admitted to one of the London hospitals for patients suffering from diseases of the nervous system. Althaus found syphilis as an etiological factor in five, of every 100 cases of paralysis, in twenty, and in every 100 in which the memory or intellect was affected, in no less than sixty. But not only on account of its frequency is syphilis of spine and brain important to us. The fact that it gives rise to the gravest of symptoms, very frequently causes death and is almost the only organic disease of the central organs in which we may hope for good results from correct diagnosis and proper treatment, makes its study as interesting as it is momentous. During the last years much has been added to our knowledge on this subject. The most important progress has been made in the study of the predisposing causes and in earlier and more definite diagnosis, thus placing us in a position to warn patients in time so as to prevent, in some instances, at least, an outbreak of the malady, or, when it is too late for that, to recognize at an early stage the nature of the trouble. Some new methods of treatment, too, have come into use, and the older methods have been modified so as to be more effective. I could not attempt to

review all the work that has been done on this subject; that would take not one paper but an entire volume. The purpose of this paper is rather to discuss the most essential points in the etiology, diagnosis and treatment of the disease, thus enabling us to prevent serious trouble in some instances, to recognize its nature where it exists and to treat it properly when we have recognized it.

As the same etiological factors enter into the causation of spinal and cerebral syphilis, with but slight modifications, I shall discuss them all at the same time.

Etiology. The cause of syphilis of the central nervous system is, of course, the syphilitic infection. But fortunately not all of those who have acquired a chancre become the victims of nervous affections. The fact that in some instances a number of cases of Lues of the nerve-axis could be traced to one and the same source of infection, has given rise to the hypothesis that in some cases the virus may be of special malignity for the nervous system. Extragenital chancres, too, it is said, predispose particularly to the troubles which we are now studying.

Those cases in which the primary sore is followed by but slight and evanescent secondary symptoms seem to be more disposed to nervous syphilis than others. Of sixty-two cases of paralysis spinalis syphilitica, the histories of which I published some years ago, there were only six who knew of any secondary, and the same number who had had tertiary, lesions.

That an insufficient treatment in the early stages of syphilis has a disastrous effect upon the nervous system, is now conceded very generally. Thus one author in a series of 100 cases in which the extent of previous treatment could be ascertained, found only five who had been treated thoroughly. Another one states that in 82—85 per cent. of his 430 cases of cerebral lues, there had been no treatment at all or an insufficient one, and of eight of my cases of paralysis spinalis syphilitica, in which anti-syphilitic remedies had not been applied thoroughly, six had paraplegia within the first two years after the infection had taken place. Dana claims that the neglect in particular of

the early use of iodide of potassium tends to increase the danger of subsequent disease of the nervous centers.

Formerly the opinion was generally held, that syphilis of the nerves was always a late manifestation of the infection, but we know better to-day. Spinal syphilis in particular occurs quite commonly during the secondary stage, but even cerebral lues may appear before the chancre is healed. Such cases have been reported by Kahler (with post-mortem) and Rodet. Vidal gives an instance in which symptoms of a specific cerebral meningitis came on eight days after the appearance of the chancre. These of course are exceptional cases, but I treated a patient myself only recently who presented grave cerebral symptoms three months after infection.

As to the average time which elapses between infection and nerve lesions the following table will give a fair idea:

Of fifty-two cases of paralysis spinalis syphilitica the spine was affected in

| | |
|--------------------|--|
| 7 cases during the | 1st year after the infection. |
| 14 " " " | 2d " " " " |
| 13 " " " | 3rd " " " " |
| 2 " " " | 4th " " " " |
| 5 " " | between the 5th and 10th year after the infection. |
| 6 " " " | 11th " 15th " " " " |
| 1 " " | in the 16th year after the infection. |
| 4 " " | after 20 years or more. |

So that 34 cases occurred within the first three years.

Gowers gives 50 cases of brain syphilis in

| |
|---|
| 10 of which the brain became affected during the first 2 years. |
| 9 " " " " " " between 2d and 3rd years. |
| 7 " " " " " " 3d and 5th " |
| 9 " " " " " " 6th and 10th " |
| 11 " " " " " " 11th " 15th " |
| 4 " " " " " " 16th " 20th " |

Naunyn gives statistics comprising 325 cases with

| | |
|----------------|-------------------|
| 20% during the | 1st year. |
| 19.7% " " " | 2d and 3rd years. |
| 15.0% " " " | 4th and 5th " |
| 24.9% " " " | 6th and 10th " |
| 10.7% " " " | 11th and 15th " |
| 5.2% " " " | 16th and 20th " |
| 4.8% after the | 20th year. |

Occasionally we see cases in which almost a life-time has passed by without serious sequelae before the brain or spinal cord is attacked. The most striking instance of this kind is one in which the cerebral tissues became diseased after 37 years. In another one a patient afflicted with hereditary syphilis presented signs of brain trouble at 30, and I shall have occasion to give you a brief history of a spinal case with an interval of 25 years between infection and paralysis later on.

The early nerve syphilis is usually due to superficial and diffuse lesions, affecting more commonly the membranes of the nervous system, while the later manifestations are more often circumscribed, affecting the nerve tissues proper and hence less amenable to treatment.

It does not seem improbable that syphilis of the nervous system appears both more frequently and at an earlier stage than it did formerly.

The age at which infection takes place seems to exert an influence upon the development of nerve syphilis to which to my knowledge attention has not yet been drawn. It appears that both the spinal cord and the brain are on an average attacked the earlier after the infection, the later in life syphilis is acquired. This holds good not only of the 50 cases of paralysis spinalis syphilitica in which the necessary data were available, but also in 95 cases of cerebral lues which were gathered at random from literature.

Paralysis spinalis syphilitica:

| | | | |
|---|-------|--------------------|-------|
| Number of cases | 17 | 15 | 18 |
| Age at which syphilis was contracted | 19-25 | 26-30 | 31-45 |
| Av. time before spinal cord was attacked, years | 7.6 | 4.7 | 3.4 |
| Cases in which spinal cord was attacked during the first year after infection | 12% | 33 $\frac{1}{3}$ % | 46% |

Lues Cerebri:

| | | | | | |
|---|-----------|--------|--------|--------|---------|
| Number of cases | 1 | 9 | 24 | 32 | 29 |
| Age at which syphilis was contracted, | | | | | |
| Years: | under 10, | 10-20, | 21-25, | 26-30, | over 30 |
| Average time before brain was attacked. | | | | | |
| Years: | 18, | 9.9, | 9.0, | 5, | 3.4 |

Among 34 cases in which chancre was contracted be-

fore the 26th year, brain syphilis followed within one year in 14.4%.

Among 32 cases in which chancre was contracted between the 20th and 30th years inclusive, brain syphilis followed within one year in 36.7%.

Among 29 cases in which chancre was contracted after the 30th year brain syphilis followed within one year in 48.3%.

Since the age at which spinal cord or brain becomes diseased depends more or less upon the time at which infection takes place, it is but natural that we find the majority of cases occurring between the 25th and 40th years of life, that is, during the time at which a primary sore is most commonly acquired. Of 56 cases of paralysis spinalis syphilitica the disease began

| | |
|---------------------------------|-----------------------------|
| Between the 20th and 25th years | in six instances. |
| " " 26th and 30th | " " twelve instances. |
| " " 31st and 35th | " " eleven " |
| " " 36th and 40th | " " fifteen " |
| " " 41st and 45th | " " eight " |
| " " 46th and 50th | " " three " |
| At 55th year | " one " |

Statistics show that lues is about eight times more frequent in men than in women, about the same ratio is found in the parasyphilitic diseases, such as locomotor ataxia and dementia paralytica. Of 279 patients of Gaudichier who suffered from cerebral syphilis 39 were women, of my 62 cases of paralysis spinalis syphilitica 6.

Those whose profession involves great mental exertion, continuous worry or excitement, or much night-work, seem more particularly disposed to have brain troubles which occur quite frequently in artists, writers, physicians, etc. Gajkiewicz states that every year he has seen a number of students in whom syphilis of the nervous centers began suddenly at the time of the examinations. Another author (Vinache) claims that paraplegia is common among those who use their lower extremities very much. If he were right we should see any number of such cases among the "scorchers," but I have not heard of one as yet.

Sometimes we are unable to find any predisposing cause, but in the majority of cases either a hereditary

neuropathic disposition, cerebral over-exertion or venereal excesses have weakened the nervous system and prepared it for an attack. Sometimes this is done by other diseases, such as acute polyarthritis or diphtheria. Exposure to cold or dampness seems to be of some importance and it appeared to me as though the colder season usually brought a larger number of such cases to the physician's office.

Some of these predisposing causes probably have some influence in determining the localization of the pathological process. Thus, a neuropathic tendency, a trauma of the head, psychic influences, fright or alcoholism are frequently mentioned in the histories of patients suffering from cerebral affections. A patient who is at present under my care withstood the weakening influence of chronic alcoholism, but showed symptoms of specific arteritis immediately after having graduated from a Keeley Institute. Injuries to the spine, exposure to cold or dampness, physical over-exertion and possibly venereal excesses dispose to spinal disease.

The following statistics (by Tarnowsky) covering 100 cases of brain syphilis will convey a fair idea of the relative importance of these various predisposing causes. There were 43 cases with chronic alcoholism, 29 with neurasthenia, (18 of these with a hereditary neuropathic disposition), 5 with injuries to the head and 23 in which no predisposing cause was ascertained.

Hereditary syphilis is not a rare cause of lesions in the central nervous system, which most commonly appear during infancy and early childhood, not infrequently after some injury to the head. Rumpf estimates that about 13 per cent. of the children with hereditary syphilis have nerve lesions, but his figures are probably altogether too small. The spinal cord proper is attacked but rarely (Darrien,) but the bones, cartilages and periosteum are not infrequently the seat of gummatous changes in childhood (Jürgens). Fournier has shown that these lesions frequently do not become evident before the patients have reached the 9th to the 15th years of life and it is not improbable that they may even occur during the third decade of life. The statement that not only the children of a syphilitic

person, but the grandchildren as well may become the victims of their ancestor's disease can not be substantiated by convincing examples.

The *symptoms* caused by syphilis of the cerebral nervous system vary of course according to the nature and seat of the lesion. The most frequent and important forms of specific spinal disease are the following: (1) Syphilitic spinal meningitis; (2) Paralysis spinalis syphilitica; (3) Transverse syphilitic myelitis, and (4) acute syphilitic myelitis.

1. *Syphilitic Spinal Meningitis*: Usually begins with pain in the spinal column, which is commonly fairly well localized though it may radiate from a point of greatest intensity. At the same time the spine becomes more or less rigid. Then numbness in the extremities appears, associated with various other forms of paraesthesiae and followed sooner or later by a more or less complete paraplegia. In most cases the sphincters are affected early. Besides this the patients often complain of intense lancinating pain along the spine or in the extremities, of a girdle sensation or of girdle pain. In those regions in which this pain is located there frequently exists an area of well marked hyperaesthesia. When the meningitis is localized in the cervical region of the cord the symptoms of pachymeningitis cervicalis hypertrophica may occur. If the anterior roots are involved in the lesion paralysis with atrophy of the limbs is found. As a rule the disease spreads to the spinal cord proper, producing myelitis (q. v.). Quite commonly the symptoms of spinal disease are combined with cerebral disturbances. Two points are particularly characteristic of the *syphilitic* spinal meningitis: Nocturnal exacerbation of the pain and absence of fever.

2. *Paralysis Spinalis Syphilitica*. This form has been studied very carefully during the last few years and it is certain that its symptoms are but very rarely, if ever, due to any other cause but syphilis. The onset of the disease is a gradual one in most cases, though some few with an acute beginning have been reported. In quite a number of cases cerebral symptoms, such as transitory diplopia, optic

neuritis, etc., have preceded it. As a rule we get a history of a gradually increasing weakness and rigidity of the lower extremities, usually associated with paraesthesiae. Girdle sensation is not infrequently complained of, as well as creeping or burning or drawing sensations, a "feeling of velvet" or a sensation as though electricity were being applied to the limbs. Occasionally there is hyperaesthesia here or there. Pain is rather an uncommon symptom. Where it does exist it is usually but slight, affects the spine, sacral region or encircles the upper part of the abdomen in shape of a girdle. Some patients suffer from twitching or cramps in the legs. Quite frequently only one extremity is affected at the beginning, the other one following after a short time. One of the most important symptoms of the early stages consists in disturbances of micturition, usually in shape of retentio urinae. Defecation is often affected similarly and very commonly there is sexual weakness, rarely priapism. In one of the cases reported by me in my paper on Paralysis Spinalis Syphilitica incontinence of urine had preceded all other symptoms by three years.

When the disease is fully developed the following symptoms are found: A spastic paresis of the lower extremities with a very markedly spastic gait, the one leg, as a rule, being affected more than the other. The muscles are somewhat rigid, but very much less so than one would expect after having observed the pronounced spastic gait. The deep reflexes are exaggerated, patellar as well as ankle clonus are usually distinct. The disturbances of sensibility are relatively slight, principally subjective, such as creeping sensations, numbness, sensation of tension in legs, knees, back, gluteal region, burning sensation, girdle sensation, etc. Violent pain is the exception, but often there is slight girdle pain, lancinating pain in legs, or in the lumbar or dorsal region of the spine. In some cases the legs or the back were hyperaesthetic and this hyperaesthesia may be limited to the sense of temperature, of cold alone or of touch. Objective disturbances of sensibility are almost always present, but slight, limited to certain areas and often to certain qualities of sensibility. One limb is frequently af-

fected more than the other. It is rare to see an hyperaesthesia affecting all qualities of sensibility. Sometimes only the sense of touch or of pain, in other instances that of pain and temperature or of pain and touch, etc., is lost.

A complete motor and sensory paralysis may occur as a transitory symptom in the earlier stages of the disease, in the terminal stage it sometimes becomes permanent.

We do not find marked muscular atrophy with reaction of degeneration in this form.

Trophic disturbances, such as bed sores, are rare excepting in the later stages. The same applies to cystitis.

Cerebral symptoms frequently complicate the disease. In most cases the thermometer fails to show a rise in the temperature of the body.

A rare form of spinal syphilis to which I first called attention is very closely related to the one just described, only the seat of the anatomical lesion is to be found at a higher level in the spinal cord, i.e., in the dorsal region. Its symptoms are identical with those of Erb's form excepting that in place of spastic gait, rigidity of muscles and increase of deep reflexes, we find a paretic gait, loss of muscular tonus and absence of deep reflexes.

3. *Syphilitic Transverse Myelitis.* This form is very commonly combined with meningeal lesions, so that its prodromal stage is represented by the symptoms due to the latter. Paralysis of the limbs comes on with varying rapidity and is never complete. While the patients are, as a rule, unable to stand or walk, they are well able to execute certain movements in bed. In the beginning of the trouble we find no rigidity of the affected limbs and the deep reflexes are decreased in intensity, but after a few weeks, when secondary degeneration becomes established, sometimes after the occurrence of intermittent spasms, the lower extremities become rigid and contracted. At the same time the intensity of the deep reflexes increases and patellar as well as ankle clonus may be present. The sphincters become involved, as they do in paralysis spinalis syphilitica. The sensibility is always disturbed, the patients complaining of pain in the spine, girdle pain, lanci-

nating pains in legs or of deep-seated, continuous pain, or of a very disagreeable sensation of cold. At the same time more or less marked anaesthesia of the lower extremities develops extending up to the abdomen. Of trophic disturbances we often see bed sores and more or less atrophy of the muscles, though the latter rarely reach a high degree. Cerebral complications are occasionally met with.

4. *Acute Syphilitic Myelitis.* The prodromal stage is usually but poorly marked, may consist in a slight weakness or violent pains in the lumbar region, lasting but a short time in most cases. It is not uncommon at all to find a total absence of all prodromi in this type. The paralysis develops very rapidly, in a few hours or in but a few minutes. Even an apoplectiform beginning—without unconsciousness, of course—is not very infrequent. It may come on during sleep without interrupting the same. The sphincters are involved at an early stage and sometimes retentio urinae is the first symptom. The paralysis is very pronounced, often complete, and is combined with anaesthesia, also often complete of the lower extremities and the trunk. Both the loss of motility and sensibility is in some cases more marked on one side of the body than on the other. Sometimes circumscribed hyperaesthesia exists on the abdomen or legs.

Very often there is absolutely no pain, sometimes paraesthesiae or girdle pain are complained of. In the beginning there is no rigidity and the deep reflexes are either decreased or entirely absent. In the milder cases, however, rigidity and increase of deep reflexes come on later, while in the more grave ones rapid atrophy of the muscles with reaction of degeneration occur.

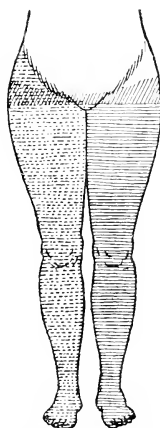
There is marked paralysis of the sphincters and bed sores are frequent and among the early symptoms.




These are the more common types of spinal syphilis, but the disease may closely imitate the symptoms of most any of the organic diseases of the medulla spinalis, such as acute anterior poliomyelitis (of the adult), Landry's paralysis, amyotrophic lateral sclerosis, tabes dorsalis, dissemina-

ted sclerosis or Brown-Séguard's paralysis. Compression of the spinal cord by gummata is very rare.

An example of one of the rarer forms came under my observation recently.

Mrs. J. L., 43 years of age, became the wife of a laborer 25 years ago. At that time, that is, at the age of 17 years she contracted a venereal disease from her hus-



 Hyperesthesia.
 Loss of Sensibility.
 Loss of Motility.

band. She has been pregnant five times, has given birth to two children who are alive and healthy and has miscarried three times. Fifteen years ago she had a pustular eruption all over the body, which was probably syphilitic in nature. One year ago she received an injury in the lumbar region, her husband having kicked her. She was confined to her bed for two weeks after the injury, suffering intense pain in the back, but after that she seemed to have recovered completely. About six weeks after she had returned to her household duties the pain in the lumbar region recurred and at the same time the lower extremities became affected in such a manner that there was loss of

motility in the right leg, while sensation was lost in the left one. Micturition as well as defecation became painful and the pain extended from the lumbar region forward into the right groin. The paralysis of the right leg was practically complete for some time, then improved spontaneously and of late became more marked again. The same applies to the loss of sensibility in the left lower extremity.

The physical examination showed paresis of the right lower extremity, increase of the deep reflexes, more marked on the right than on the left side, very slight atrophy of the right limb without reaction of degeneration. The disturbances of sensibility I have attempted to picture to you on a chart. The first lumbar vertebra was very sensitive to pressure and in the left inguinal region there is a long scar, which resulted from an incision made 25 years ago, when a suppurating gland was incised.

This case is of special interest; firstly, because it is a classical example of a very rare form of spinal disease, a case of Brown-Séguard's paralysis; secondly, on account of the long interval which elapsed between the time of infection and the appearance of spinal symptoms, and, finally, because it shows the influence of injuries upon the occurrence and localization of spinal syphilis. Perhaps it may be advisable to add that the correctness of the diagnosis was established beyond all doubt by the very prompt effect of antisymphilitic treatment. After a very short time the pain had disappeared and now after two months there is but a very slight paresis of the right limb with increased deep reflexes and an occasional crampus* in the leg. Sensibility and micturition are normal.

Before entering into the discussion of the diagnosis of spinal syphilis I should like to say a few words about the diagnosis of syphilis in general. We know from experience how little reliance can be placed upon a patient's statement that he has not had a chancre. A large number of those who have been infected are ashamed of that fact, others—and their number is perhaps larger than is usually

* Since this was written the cramp have ceased.

supposed—are perfectly truthful in denying all knowledge of an infection. This applies above all, of course, to cases of hereditary syphilis. It is not at all uncommon in women in whom the localization of the primary lesion may be such as not to attract attention and who, as a rule, are more ignorant about these things than men; but it does occur in men as well, particularly when the primary lesion was localized in the urethral canal. It is not advisable to ask a patient directly whether or not he has ever had a chancre, but better to question him about the existence of cutaneous eruptions, defluvium capillorum, about the occurrence of anginas without fever and the like. Occasionally we can obtain a history of antisyphilitic treatment from patients who deny ever having had a chancre. Miscarriages are amongst the most common consequences of syphilitic infection. According to Birsch-Hirschfeld not less than two-thirds of them are due to this cause, but these statistics come from a country where criminal abortion is rare. A history of abortus followed by the birth of a dead child at full term with cutaneous eruptions or other evidence of syphilis of course would be very important. Very often we must rely entirely upon the result of the physical examination. But it is not sufficient to look for a scar upon the genitals, for though we no longer believe, as Ricord did, that syphilis may occur without a chancre, we do know that a chancre may heal without leaving a scar. The skin, the testes, the throat, the bones—particularly the tibiae and the skull—the corners of the mouth, the palms of the hands and the soles of the feet, the iris, the cornea, the mucous membrane of the rectum and the glands should be carefully examined. We must remember, though, that in syphilitic women the inguinal glands are very often not enlarged. Where other signs exist a modern enlargement of the spleen is valuable additional evidence.

Where hereditary syphilis is suspected the following points are of importance: Such children are usually sickly, thin, have a poorly developed muscular system, the skin is frequently of a dirty grayish color, they are undergrown. In boys the testicles remain small, their hair is thin, it

grows but late in the pubic and axillary regions. In girls, too, the signs of puberty appear later than is normal. The skull is frequently deformed, sometimes hydrocephalic. The saddle-shaped nose is one of the best known signs of congenital syphilis. Exostoses and other deformities are to be found on other bones of the body, particularly the tibiae. Scars on the skin, deformities of the teeth, lesions in the eyes, deafness, enlargement of glands must be sought for. Finally, certain diseases of the nasal mucous membrane are common in syphilitic children. The importance of abortions and still-births in suspected families has already been mentioned.

Sometimes we do not succeed in finding any evidence of luetic disease in the patient, but can obtain it by examining his family. Thus I once was unable to detect any sign of syphilis in a patient who strenuously denied having been infected, but found a typical syphilitic ulcer of the palate in his wife.

An error which is rather commonly made consists in considering all organic diseases of the nervous system occurring in syphilitic individuals as syphilitic. That is of course wrong, for why should not such a person occasionally fall ill with a bulbar paralysis, an amyotrophic lateral sclerosis, etc.? In these cases only the effect of the treatment will usually decide the diagnosis. Even when neither the history nor the physical examination reveal any evidence of syphilis, we can frequently recognize its presence from the nervous symptoms alone. I have described the most common forms of spinal syphilis and where we have such a characteristic group of symptoms there can be but little doubt about the nature of the disease. In general the following points are important: The presence of a prodromal stage with the signs of meningitis; transitory cerebral symptoms, such as nocturnal headache, paralysis of ocular muscles; variation in the intensity of symptoms, i. e., the occurrence of remissions and intermissions; nocturnal exacerbations; absence of fever, excepting where it is caused by such complications as bed sores or cystitis; and finally, the effect of the treatment.

The following extract from the history of a case of paralysis spinalis syphilitica shows how frequently the symptoms may change in such cases.

- January 12. R. pupil larger than L.
 " 13. Morning; L. pupil larger than R. Evening; R. pupil larger than L.
 " 14. L. pupil larger than R.
 " 15. R. pupil larger than L.
 " 16. Pupils equal.
 " 17. L. pupil larger than R.
 " 18. Pupils equal.
 " 19. R. pupil larger than L.
 " 20. L. pupil larger than R. No reaction to light. Half hour later pupils react to light.
- January 11. Ankle clonus on both sides. No patellar clonus.
 " 12. No ankle clonus.
 " 16. No clonus.
 " 17. Ankle and patellar clonus on both sides.
 " 18. Morning; Slight ankle clonus, no patellar clonus. Evening; No ankle clonus, but patellar clonus.
 " 19. Both ankle and patellar clonus on both sides.
 " 20. Ankle clonus on right, patellar clonus on left, side.

Primary lateral sclerosis differs from syphilis of the spinal cord in this, that its onset is gradual and its course slowly but steadily progressive, that in it the sensibility and the sphincters remain intact and that a markedly spastic gait is always associated with pronounced rigidity of the muscles.

In the non-syphilitic transverse myelitis the paralysis of motility and sensibility is greater and usually equal on both sides of the body, trophic disturbances are pronounced, the muscles are more rigid and cerebral symptoms are absent. Disseminated sclerosis is usually easily differentiated by its characteristic group of symptoms: Intention tremor, nystagmus and scanning speech. In it we do not, as a rule, find any disturbances of sensibility or of sphincters and the rigidity of the muscles is proportionate to the spastic gait.

Locomotor ataxy comes on later after the infection than syphilitic myelitis. Paresis, or paralysis of muscles, is rare excepting in the terminal stage. Visceral crises never oc-

cur in myelitis, arthropathies and such trophic disturbances as atrophy of the maxillary bones but very rarely.

In compression of the spinal cord there is intense pain in the beginning followed by paralysis with atrophy and reaction of degeneration. The sphincters are affected later than is the rule in specific diseases. The course of the disease is chronic, progressive without remissions or intermissions. Very often the spinal column is deformed.

Haematomyelos comes on suddenly without prodromi; its course is also progressive and remissions do not occur.

Ataxic paraplegia is also essentially a chronic, slowly progressive disease with a gradual onset and in it nystagmus, disturbances of speech and tremor of the facial muscles are of frequent occurrence.

The *prognosis* is probably better in spinal syphilis than in any other organic disease of the spinal cord, but less favorable than in cerebral specific disorders. For the former lacks those "indifferent" regions which we find in the latter and on account of its small size any destructive lesion must necessarily affect important parts. The outlook will naturally be best in the more recent cases and more favorable when only the meninges and not the cord proper is diseased. In acute syphilitic myelitis the prognosis is most serious. The percentage of cures obtained by various observers varies between 15 per cent. and 35 per cent. where all forms are included in the statistics. In paralysis spinalis syphilitica I found that cures had resulted in 11 per cent., improvement in 69 per cent., no improvement in 13 per cent., while 7 per cent. of the cases published had terminated fatally. But my figures do not convey a correct impression, for there can be no doubt that a relatively large number of cases were published because the diagnosis could be verified by a post-mortem, while many of those which took a more favorable course were not recognized as specific disease.

The *symptoms of cerebral syphilis*, as well as those of spinal lues, depend largely upon the nature and the seat of the lesion. But in the majority of cases we find that the most serious signs are preceded by a prodromal stage which

is about the same in all forms. The study of this phase of the disease surpasses in importance that of the later symptoms, for it represents the time when no irreparable damage has yet been done and when by active and skillful treatment we can save our patients from becoming crippled mentally and physically in a large number of cases. The most common, and, at the same time, the most characteristic of these prodromal signs is headache, the cephalalgia syphilitica. It is found in no less than two-thirds of all cases of syphilis of the brain and is relatively rare only in those cases in which the disease was transmitted by heredity or else acquired at a very early age. Fournier has called it encephalalgia because the pain is usually deep-seated. It varies in character, but is most frequently described as being either pressing, hammering or constricting; its localization is most frequently the frontal or occipital region, while a small number of patients complain of a diffuse pain. In the latter cases, however, there is usually a point of maximum intensity from which the pain radiates to all sides. Very frequently pressure or percussion upon these regions causes intense suffering. This headache is almost always very violent, so violent in fact that it has driven some patients to suicide. The most important point about this pain, something that renders it almost pathognomonic, is the fact that it exacerbates periodically, is usually most intense toward evening or during the night, thus causing another symptom of which these patients very often complain—insomnia. It is not at all a very uncommon thing to hear from these patients that the headache always increases at a certain hour. A man whom I am at present treating for syphilis of the brain had considerable pain during the day, but states that every evening at 7:30 his headache would begin to become more intense, that it would increase until 2 a. m. and after that would gradually decrease in violence until it reached its minimum intensity in the morning. Another feature about this pain that is characteristic is its persistency and tendency to recurrence when no anti-syphilitic treatment is used. Simultaneously with the cephalalgia other symptoms usually occur, such as

pain or numbness in the extremities, temporary impairment of speech, even amounting to a transitory aphasia, weakness in this or that extremity, the signs of Menière's Disease.* At the same time a change in the intellect and character of the patient becomes noticeable. Cerebral activity is decreased, mental labor difficult, the attention is not easily fixed upon any one subject. Besides that the patients are liable to become more or less depressed, irritable, subject to unwarranted outbursts of passion. Sometimes states of stupor occur, more or less pronounced and lasting for hours at a time.

These prodromal symptoms may last for only a very short time, a few days, or a few weeks, or they may extend over a period of a number of years. Most of them—excepting the headache in a fairly large number of cases—are not permanent, they appear, last for a while, then disappear only to recur with a greater intensity sooner or later. Gradually, as they become more intense they also become more permanent and in addition to that, new signs become evident which vary in the different forms of brain syphilis. Of these various types four are most frequent and hence of greatest importance: (1.) The syphilitic meningitis of the base of the brain; (2.) the syphilitic meningitis of the convexity; (3.) syphilitic arteritis, and (4.) Gummata.

1. *The Specific Basal Meningitis.* The prodromal stage just described is followed by a state of stupor, in some cases by deep coma, associated with projectile vomiting, attacks of dizziness and general malaise. The state of consciousness differs from that in cerebral tumors, in that it is not a continuous, slowly-increasing mental hebetude, but consists rather of attacks of more or less profound unconsciousness or maniacal states, separated from each other by intervals of relative mental clearness. These attacks in some cases have a tendency to appear particularly toward evening. In a case which I recently had under my care there existed a condition of pronounced torpor during the day,

*Short attacks of vertigo or reeling, momentary dimness of vision or subjective noises.

followed by intense excitement and a tendency to violence during the evening and night. Later on as improvement set in, the patient was normal mentally during the day, but with dusk would again become agitated and excited.

In other cases we see attacks of mental depression take the place of the maniacal condition just mentioned. Usually both the memory and the intellect of the patients suffer. If at this stage of the disease we examine such a case we will find symptoms of a lesion, more or less diffuse, but indicating some trouble at the base of the brain. By far the most important among these is paralysis of cerebral nerves and of all cerebral nerves it is the oculomotor which is affected in the greatest number of cases. In his monograph on eye troubles in syphilis of the central nervous system. Uhthoff states that among 100 cases of brain syphilis—including, of course, all forms of this disease—the optic nerves were affected 32 times, the oculomotor 34, the abducent 16, the trochlear 5 and the trigeminal nerves 14 times. The preponderance of lesions in the second and third pair of nerves is explained by the fact that the disease has a pronounced tendency to localize in the region of the optic chiasm and the interpeduncular space. There is no cranial nerve, however, which has not been affected in some instances of basal meningitis. The olfactory nerve is relatively immune, while optic neuritis, primary optic atrophy and Hemianopia are of rather common occurrence. One of the most frequent combinations is the paralysis of the facial, oculomotor and trifacial nerves. When the auditory nerve is involved, tinnitus aurium or deafness result, according to Fournier a *signum mali ominis*. The 9th and 12th nerves are rarely reached by the pathological process. Quite commonly we find the paralysis of cranial nerves to be incomplete and involving only a portion of the nerve, so that such symptoms as isolated ptosis, paralysis of accommodation, absence of reflex to light, inequality of pupils, etc., result. Very often cerebral nerves on both sides are affected, and in general the distribution of the lesion is such as to indicate a diffuse, but not necessarily continuous, lesion at the base of the brain. Occa-

sionally the nerve palsies are associated with hemiplegia due to pressure upon the crura cerebri, and at times we see cases of so-called alternating hemiplegia, paralysis of the extremities on one and of cerebral nerves on the other side of the body, cases which are very apt to lead to the—incorrect—diagnosis of a central lesion.

Paralysis of the sphincters is rather frequent and polydipsia and polyuria not very rare. Convulsions do not, as a rule, occur. The temperature remains normal during the entire course of the disease, unless some complication causes fever.

In this as in all other forms of cerebral and spinal syphilis remissions and intermissions are the rule rather than the exception.

The basal meningitis is often associated with syphilitic arteritis (q. v.).

2. *Syphilitic meningitis of the convexity of the brain* is much less common than that of the base and its symptoms are less characteristic. It is one of those forms which are not rare in hereditary syphilis. The membranes covering the frontal and central convolutions appear to be the seat of predilection for this form, hence the frequency with which the motor centers are affected. Most commonly the usual prodromal stage, in which the headache is, as a rule, the most prominent symptom, is followed by such symptoms as Jacksonian epilepsy, monoplegia, hemiplegia or the various forms of aphasia. The onset is usually a gradual one, and frequent remissions and intermissions occur. Vomiting, dizziness or stupor are occasionally met with.

Jacksonian epilepsy is very frequent. The attacks are at first mild, but soon become more frequent and intense. In no variety of epilepsy are the cerebral functions affected more rapidly and more profoundly than in this. With these spasms loss of power frequently comes and it usually develops—as one author puts it—“in installments.” Complete paralysis is less common than paresis. In the paralyzed extremities paraesthesiae, such as numbness and creeping sensations, are common, while actual loss of sensi-

bility is rare. The deep reflexes are increased from the very beginning of the motor disturbances.

Aphasia, as I have already stated, is not rare in this form, though it is more commonly due to arteritis. It is very frequently intermittent and in this respect resembles greatly the transitory aphasia which we see so very often in dementia paralytica.

Mental disturbances are not rare. They may consist in mental depression which has a tendency to lead to secondary dementia, or in exaltation, or else in both conditions occurring alternately. Where exaltation exists we also frequently see delirium. This delirium is never systematized and no one illusion exists for any length of time; it is almost always accompanied by mental weakness and by such motor disturbances as have just been described. Hallucinations both of the special senses and of general sensibility are common. In some cases these mental disturbances closely resemble those of dementia paralytica. A marked impairment of the intelligence justifies us in suspecting a pathological process which extends over a large area of the brain. Where the inflammation of the pia extends backward to the occipital lobe hemianopia and visual hallucinations may result. The symptoms of increased cerebral pressure are rarely met with in the course of this disease and optic neuritis is not of common occurrence.

A point of great diagnostic value, particularly in the more acute cases is the absence of fever.

3. *Syphilitic Arteritis.* This is the most common of all forms of luetic diseases of the brain. Certain arteries are very much more liable to be affected than others, as was shown by Erlenmeyer, who found that of 100 cases of syphilitic arteritis the *arteria fossae Sylvii* was affected in 46, the internal carotid in 26, while the basilar and vertebral vessels are known to suffer from this disease less frequently and the *arteria corporis callosi* and the terminal cortical branches are almost entirely immune. Of the same arteries those of the left side are very much more liable to be affected than those of the right hemisphere.

The symptoms of syphilitic arteritis differ only in some

details from those of an arteritis due to some other causes, though the age of the patient often furnishes a clew as to the etiology, the specific troubles in the majority of cases occurring at an age at which diseases of the blood-vessels from other causes are rare.

The prodromal stage very commonly consists of a number of transitory symptoms due to temporary disturbances of circulation. Besides these the patients usually complain of headache which is more intense than that we meet with in senile arterio-sclerosis, while it but rarely reached the intensity of the cephalæa found in syphilitic meningitis. The most common symptoms are aphasia and hemiplegia or hemiparesis. The aphasia when once fully established can not be distinguished from that due to other lesions, but differs from the latter in that its permanent establishment is frequently preceded by brief transitory attacks of impairment of speech, which last sometimes for a few minutes, sometimes for a day or two, and may be separated from each other by intervals of some years. About a year ago I saw a patient who had two such attacks, the one having occurred a number of years ago and neither one of them lasting for more than about one day. This disorder is known under the name of the intermittent form of aphasia of Mauriac. It may be associated with slight paresis of right side of the body, also of short duration only, and with changes in the pupils, and is at times followed by mental torpor or a brief delirium. As a rule, each successive attack becomes more grave, the loss of speech is more complete, passes off less rapidly, is accompanied by more pronounced paralysis, and finally, unless appropriate treatment interrupts the course of the disease, permanent aphasia with hemiplegia may result. The hemiplegia, like the aphasia does not, as a rule, come on suddenly. Its onset is mostly preceded by paraesthesiae or weakness in one extremity or on one side of the body, and it develops either gradually, or else "in fits and starts." Unconsciousness is very much less frequent than a more or less pronounced attack of dizziness. While a slow development of the hemiplegia is not uncommon in senile arterio-sclerosis, transi-

tory symptoms are rather exceptional. Cases of syphilitic arteritis are on record in which a slight hemiparesis slowly changed into a complete hemiplegia in the course of a few days or weeks, but more often the stage of complete paralysis is never reached. The sensibility may be affected, though it is more commonly preserved. Double hemiplegia is not excessively rare in syphilitics, the two sides becoming affected within a few days in some instances, in others within a few weeks, and occasionally within some years. About two years ago I examined a patient who had developed a left hemiplegia within three months after the primary lesion had been noticed. He improved under antisiphilitic treatment, but did not continue it long enough. Six months ago he returned for treatment and then suffered from a spastic paresis of the right lower extremity in addition to his old left hemiplegia. Such bilateral lesions, if located in the proper part of the brain, may cause the symptoms of pseudo-bulbar paralysis.

Of mental disturbances a simple dementia is the most frequent. Depression and increased irritability are frequent early symptoms, insomnia and loss of memory not rare. Optic neuritis has been noticed in some cases.

4. *Cerebral Gummata.* These tumors are usually multiple. They are not at all infrequent in adults, but very rarely occur in children. Thus, Peterson found but one case of gumma in a child among 335 cases of cerebral tumors. They are most frequently located in the cerebral hemispheres or the pons, rarely in the cerebellum, hardly ever in the central ganglia. Usually they are superficial and attached to the pia mater. Their symptoms are those common to all tumors of the brain, as intense headache, general convulsions, vomiting, choked disc, slow pulse. The only peculiarities which may aid in making the differential diagnosis are, the frequency of a sudden onset, the occurrence of spontaneous improvement, of remissions and intermissions and the fact that to the symptoms of a cerebral tumor are often added those of other forms of syphilitic disease, particularly meningitis, which exists with the gummata. And here I wish to state that combinations of the various forms of syphilitic dis-

ease both of the brain and of the spinal cord are very common, so that we may find symptoms of a cerebral meningitis added to those of myelitis, or a spinal meningitis complicating those of a cerebral arteritis, etc.

We have found that the greatest variety of symptoms occurs in brain syphilis. In fact it may be said that no cerebral symptom is known which does not occasionally occur in syphilis. On the other hand, there is no one symptom which occurs only in syphilis, which is pathognomic for it. We must rely upon certain detail then if we wish to recognize cerebral syphilis without the aid of any signs of venereal infection and the patient's confession. Among them the following are the most important: The cephalæa syphilitica, the intense headache with nocturnal exacerbations; the frequency of certain ocular disturbances; the irregular character, association, and sequence of the symptoms, and above all the great and rapid changes in their intensity; the age of the patients—most frequently between 25 and 45 years—a time at which similar disorders from other causes are rare.

Meningitis basilaris syphilitica differs from carcinoma or sarcoma at the base of the brain in that its symptoms indicate a lesion which is not continuous and in its intermittent course. Tubercular meningitis is usually acute and progressive; in it there is a pronounced rise of temperature; in syphilis usually none. Rigidity of the spinal column and opisthotonos is, as a rule, much more pronounced in tubercular than in luetic disease, consciousness affected more in the former than in the latter. Tuberculosis of the meninges is more frequent in children, syphilis in adults.

Meningitis syphilitica of the convexity sometimes causes symptoms similar to those of brain tumor, but it is characterized by the typical cephalæa luetica and gives rise to less pronounced signs of increased cerebral pressure than a neoplasm.

Syphilis is the most frequent cause of arteritis in young individuals, and its existence is more than probable in such cases when alcoholism and plumbism can be excluded. In senile arterio-sclerosis the radial arteries are more fre-

quently affected than in specific arteritis, in the former paralysis of ocular muscles is rather rare, in the latter very common. Gummata differ from other cerebral tumors in that they usually do not cause the signs of pronouncedly increased cerebral pressure, in that intermissions and remissions are of frequent occurrence and even spontaneous cures not impossible.

The *prognosis* of brain syphilis is a fairly favorable one. Fournier published statistics comprising 90 cases. Of these 14 succumbed to the disease; 33 lived with grave, 13 with slight, infirmities; while 30 were cured. Naunyn saw eight out of 52 grave cases recover. There can hardly be any doubt that with greater age the prognosis becomes less favorable. The same is said of those cases in which more than ten years have elapsed between the infection and the outbreak of cerebral disease.

The prospect of a complete recovery varies, of course, with the nature of the pathological lesion, its localization and the length of time it has been established.

In basal syphilitic meningitis a complete recovery is not uncommon, even cases beginning with coma may be cured. Paralysis of cranial nerves usually will disappear if treated before it has existed for some years. Hemiplegia due to lesions in pedunculi frequently improves, but rarely disappears without leaving any trace. Optic atrophy, of course, is a permanent lesion. This is the only form in which a complete recovery may occur without any treatment at all.

Meningitis of the convexity gives a very favorable prognosis; in it a complete recovery is the rule rather than the exception, provided, of course, that prompt and energetic treatment is instituted. In cases with mental depression there is considerable danger of a secondary and permanent dementia.

In arteritis the outlook is very much more grave. It frequently terminates in cerebral softening and then, of course, is no longer amenable to treatment. Where hemiplegia exists we can hope for improvement only in very recent cases, before contractures have become established, though I have seen at least one exception to this rule in

which intravenous injections of corrosive sublimate caused a change for the better, which I no longer expected.

In gummata the prognosis is quite good, provided that there exists no complication with a more serious cerebral disease. Choked disc may even disappear and vision return, even when total blindness has existed for a short time.

Two points, however, we must always bear in mind, when giving a prognosis in these troubles; viz., that a certain degree of mental weakness is a rather frequent consequence of all these forms, and that there always is considerable danger of relapse.

The general condition of the patient is of great importance. Chronic alcoholism, lead intoxication and malaria have a disastrous influence, though I saw a case of syphilitic meningitis of the convexity in which a complete recovery took place in spite of the fact that the patient had committed excesses in baccho and in venere, had been a morphomaniac, and had smoked cigarettes almost incessantly.

Brain lesions due to hereditary syphilis are very much less liable to yield to treatment than those due to acquired chancres.

This is not the place to discuss the *prophylaxis* of syphilis in general, and in regard to the prevention of specific lesions in the central nervous system, the most important facts have been dwelt upon sufficiently in the chapter on etiology. The two most important things to be done are, firstly, to treat the early stages of syphilis energetically and thoroughly, and, secondly, to call the patient's attention to the dangers of mental over-exertion, sexual excesses, trauma, alcoholism, etc.

Treatment. When it has become too late to prevent nervous disease and it becomes our duty to treat it, we must prepare both ourselves and the patient for a long-continued therapeutic effort. Even when we see the patient during the prodromal stage and succeed in obtaining prompt relief for him, we must remember that this relief is almost

certain to be but temporary unless antisyphilitics are administered for a long time.

We no longer believe that since syphilis of the nervous system is a tertiary manifestation, therefore it must be treated with the iodides. Practically all authorities agree to-day that the mixed treatment is to be used, and not a few of them consider mercury the more powerful remedy in this form of syphilis, an opinion which my own experience seems to support.

Perhaps the best method of administering the mercury is that of giving it in inunctions; the iodides, of course, are administered per os and only in exceptional cases, when the stomach rebels, per rectum. In order to prevent as far as possible the occurrence of gingivitis, I have my patients gargle frequently with a saturated solution of chlorate of potash and if the gums should become affected in spite of that, apply a 1 per cent. solution of nitrate of silver to the diseased parts repeatedly during the day. After the antisyphilitic treatment has been continued for a month or two it usually becomes necessary to interrupt it for some time for it is liable to produce anaemia and emaciation. During this enforced rest it is good to administer tonics, such as iron, quinine and nux vomica.

Where we cannot give inunctions, as, for instance, in some cases of married men, who wish to conceal the nature of their trouble from their wives, intramuscular injections may be used. Of late Baccelli has recommended a still more effective method of getting the drug into the circulation by injecting corrosive sublimate directly into the veins. I have used this form of treatment in about a dozen cases of cerebral, cerebro-spinal or spinal syphilis, and among them were a few in which other methods of antisyphilitic treatment had failed. The results obtained have been very satisfactory, but the treatment has certain drawbacks such as the occurrence of thrombosis of the veins with oedema, the fact that it cannot be used in very fleshy persons, can never be continued very long, etc. In spite of all that, I have no hesitation in recommending its use in such cases in which other methods have been tried and have not given satisfaction, and above all, in those cases in which a very prompt effect is desirable.

We must not be discouraged if some time passes before improvement begins. These cases are frequently quite obstinate and may resist all therapeutic efforts for two months and even longer and still yield to treatment after that.

In addition to the drugs just mentioned sulphur baths sometimes prove useful, but I have seen so many bad results from baths of a very low or very high temperature in syphilis of the central nervous system that I never use extreme temperatures in hydrotherapeutic treatment of these diseases.

During the treatment the patient must have rest, both mental and physical, and should abstain from the use of alcohol, coffee, tea and tobacco. He must lead a quiet life, avoid excitement as far as possible and take plain and nourishing food. His bowels should be regulated carefully.

In some instances the application of sinapisms or vesicatories or of the actual cautery may prove useful.

If we wish to be successful in the treatment of these cases we must remember one thing: That we can expect good results only from prolonged and energetic administration of these remedies.

THE ACTION OF THE NERVOUS SYSTEM OVER THE NUTRITIVE PROCESSES, IN HEALTH AND DISEASE.

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IT is generally acknowledged to-day, that metabolic or tissue changes are largely under the control of the nervous system, and this of course means the nerve centers, or the cells from which the nerve fibers originate; therefore if there be an abnormal condition of these central cells we will have diseased manifestations at the nerve terminals.

The object of this paper is to demonstrate as much as may be according to our present light, first, the physiological action of nerve centers; and afterward, the results of pathological conditions within the nerve centers upon distant parts of the body, with remarks upon the treatment of the same as they are set forth. To do this lucidly, we must first refer to the different functions of central nerve cells as understood to-day, and, secondly, make as plain as is possible the action of the nerve centers upon the systemic circulation; and also the action of the blood circulating within nerve centers, upon them.

At present there are acknowledged to be five sets of nerves, and each set with a different function; these are the motor nerves by which we are enabled to move our muscles, and by which the involuntary muscles perform their functions; the nerves of sensation by which impressions are carried to the brain, and through which we experience pain; the vaso-dilator nerves, or those which from excite-

ment of their centers, expand the arteries, and the sympathetic nerves, the chief function of which is now acknowledged to be the contraction of the arteries when the centers are excited. There is another set of nerves, viz., those of secretion, supplied to the glands and organs of the body, and we may add, to all serous membranes, which when excited increase secretion, but we hope to show that they really come under the head of vaso-dilator nerves, because secretion and excretion in glands and organs cannot be increased without circulatory activity, and, therefore, without dilatation of the arteries within them.

Again, the circulation and the secretion from glands can be increased by stimulating cerebro-spinal nerves after section, by electricity; and by certain applications over spinal nerve centers, secretions from glands can be increased, and by other applications, diminished, such applications having as their object the expansion or contraction of arteries, and as their result, either greater or less secretion from glands.

Every human being in good health has a good circulation of the blood, a muscular apparatus in active working condition, a deep and full respiration, a quiet nervous system, a warm body, a good appetite, sound sleep, and a mind capable of active mental labor; and all the functions of secretion, both of waste and repair, are normally executed, while the whole body is fully supplied with oxygen. In such a presentation as this, we have the nerve centers which dilate the blood vessels, balancing evenly in their action, those which contract them; neither interfering with the other, and as a consequence an harmonious relation between the processes of waste and repair, and the individual blessed with such health often unable to understand the pains and aches experienced by others.

When there is, therefore, a proper equilibrium of the circulation of the blood throughout the body there is health; but when there is a loss of balance either local or general, there results, disease. This loss of balance may affect a nerve center, or centers, or it may be active in a part of the body distant from the spinal cord; but if the latter,

then a nerve center, or centers, must be out of the line of health; and if the former, there is sure to be a local manifestation of disease at the distal point controlled by the diseased nerve centers. If this be so, it appears to be a correct deduction that all forms of disease are first manifested by an excess or a decrease in the amount of blood circulating within nerve centers; and we believe this to be true.

Anatomy by its researches, has demonstrated the fact that cerebro-spinal nerves can be traced to the nuclei of the gland cells; and physiology has demonstrated, chiefly by the experiments of Claude Bernard, Brown-Sequard and others, that if the cerebro-spinal nerves ending in these nuclei be stimulated after section by electricity, the secretion of the glands will increase, and the arteries will dilate. Microscopic anatomy has also proven that the sympathetic fibers terminate, for the most part, upon the contractile coats of the arteries and arterioles, and Physiology has set forth the chief function of the sympathetic system to be the contraction of the systemic arteries.

Sthör, in his text book of Histology, informs us that "the capillaries are accompanied by encircling net works of delicate non-medullated nerve fibres."

In "An American Text Book of Physiology," published in 1896, Wm. H. Howell, M. D., Professor of Physiology in the Johns Hopkins University, Baltimore, and the author of the work, declares on page 485, that, "The existence of vasodilator nerves was placed beyond doubt by the following experiment of Bernard (Bernard, 1858, page 241) on the chorda tympani nerve; new facts concerning the vaso-constrictor nerves being also secured."

"Bernard exposed the submaxillary gland of a digesting dog, removed the digastric muscle, isolated the nerves going to the gland, introduced a tube into the duct, and finally sought out and opened the submaxillary vein. The blood contained in the vein was dark. The nerve branch coming to the gland from the sympathetic, was now ligated whereupon the venous blood from the gland grew red, and flowed more abundantly; no saliva was excreted. The sympa-

thetic nerve was now stimulated between the ligature and the gland. At this, the blood in the vein became dark again, flowed in less abundance, and finally stopped entirely. On allowing the animal to rest, the venous blood grew red once more. The chorda tympani nerve, coming from the lingual nerve, was now ligated, and the end in connection with the gland stimulated. Then almost at once saliva streamed into the duct, and large quantities of bright scarlet blood flowed from the vein in jets, synchronous with the pulse.

“This experiment may be said to close the earlier history of the vaso-motor nerves. It was now established beyond question, that the size of the blood vessels, and thus the quantity of blood carried by them to different parts of the body, is controlled by nerves, which when stimulated, either narrow the blood vessels (vaso-constrictor nerves) and thus diminish the quantity of blood which flows through them, or dilate the vessels (vaso-dilator nerves) and increase the flow.”

The author of this work not only applies the results of this experiment to glands alone, but also to all tissues and the arteries supplied to them; and as it is widely acknowledged to-day, that every motor nerve fibril has conjoined with it a vaso-dilator fibre, both anatomy and physiology speak very lucidly in favor of his conclusions.

Dr. Howell's deductions are precisely similar to our own, but while he has arrived at his from the physiological stand point, as well as, doubtless, from histological research respecting the termination of nerves; we have arrived at ours from both of these, and also from a very wide clinical observation in the treatment of disease by heat and cold over the spinal nerve centers, as well as from close observation of the action of drugs and medication upon the circulation and the glandular system; this contemplation being a natural result from noting the action of heat and cold over the spine. For instance: the first effect of a full dose of opium is to flush the face and warm the body from head to foot, and excite sensations of vigor and exhilaration, to increase the appetite and induce sweating, that is, in a

person in health, but fatigued at the time of medication.

Here we have not only stimulation of the mind and body, but distinct dilatation of every arteriole throughout the system. But what is the secondary effect of a large dose? Mental depression, sickness at the stomach, muscular weakness, constipation, loss of appetite, and cold legs and feet, arms and hands, and if the dose is a poisonous one, cold body, and syncope, as a result; therefore, a most powerful contraction of the arteries and greatly increased function in the sympathetic ganglia.

Opium as a stimulant evidently first acts powerfully upon the vaso-dilators, and, by reaction, more powerfully upon the sympathetic ganglia; and by the knowledge of these facts it is a comparatively easy matter to cure the opium-eater by cold applied over the spinal cord, expelling the excess of blood from the sympathetic centers, and thus allowing the blood-vessels to expand all over the body, and by this expansion increase the general nutrition, as well as withdraw the excess of blood from all the other spinal centers which have invariably given evidence of hyperaemia in this condition. We have relieved some very bad cases by this method of treatment, and with little suffering to the patient. Cold over the spine will always act to dilate the arteries in the same manner as stimulation of the chorda tympani nerve.

Cold over the spine in bags of the proper width and length will invariably dilate the arteries throughout the body, when unduly contracted; it will increase metabolic changes, thereby stimulating nutrition, give zest to the appetite, and restore the normal vigor, but it will check hypersecretion from the glands; and as we have seen in the experiment by Bernard, that the cerebro-spinal nerve was stimulated before the salivary gland began to discharge freely, so we can understand that while the cold over the sympathetic ganglia is dilating the arteries throughout the body, the same cold over the *spinal cord*, is checking the excitement of cerebro-spinal cells which may have been at the time the cold was applied the cause of profuse glandular discharge.

This result can be well appreciated in a case of diarrhœa with purging, vomiting, and partial collapse, and very cold body and limbs. Here, the spinal ice bag will quickly restore the circulation, warm the body, and restore the strength, and, at the same time, completely check the discharge from the mucous glands of the intestine. These results have been accomplished hundreds of times by the spinal ice bag, and upon the hypothesis that hyperæmia of spinal nerve cells induced the diarrhœa, and hyperæmia of the sympathetic ganglia caused the chilled surface of the body. Heat over the sympathetic ganglia and the spinal centers will do precisely the opposite to cold; it will contract the arteries and increase discharges from glands, as may well be illustrated by its action in a case of acute bronchitis. The result will be a rapid lowering of temperature, speedy relief to the breathing and sense of constriction in the chest, and a copious discharge of mucous from the bronchial mucous membrane.

The heat over the dorsal sympathetic ganglia, attracting more blood to them and increasing their function, causes them to issue stronger nerve impulses to the dilated arteries in the inflamed area, and the expanded vessels at once begin to contract; but the heat also attracts blood into the cerebro-spinal centers which dilate the arteries in the mucous glands, increasing their function and causing an increase in the secretion of the mucous glands which they control. The Tartrate of Antimony and Potash, sometimes given to break an acute attack of bronchitis, or bronchial catarrh, in vocalists, who, perhaps, must fill an engagement at once or lose their fee, acts precisely in the same manner as heat over the spine, producing free perspiration and free discharge from the lungs, with rapid lowering of the temperature; therefore, it appears that it must act upon the sympathetic ganglia and the cerebro-spinal system precisely as the heat does; demonstrating that the results are really arrived at by the action of the drug upon nerve centers, and serving to evidence that the root of the trouble is really in the central nerve system.

Whenever we have then a local afflux of blood to any

part of the body it means, according to the views set forth, a loss of function in the sympathetic ganglia, or, in other words, anaemia of these knots of nerve tissue. In plethoric headache, pulmonary congestion, congestion of the womb, congestion of the enteric mucous membrane, and in various forms of hemorrhage, we have never failed to contract the arteries in the affected region, by applying heat over the sympathetic ganglia, supplying the arteries with contractile nerve fibres, apparently proving the real disease to be located in the anaemic ganglia; cold over the spine, increasing the appetite, the general nutrition and the vigor of the patient.

Let us take another example of medication, to illustrate the effects induced as due to the action upon nerve centers; and as speaking an example as we know is that of oxygen by inhalation.

This gas if pure and properly diluted by a gas of lighter specific gravity, is easily absorbed by the capillaries of the lungs, and from our own observation acts almost precisely as the cold over the spine. The first effect of inhalation is to strengthen the muscular action of the heart, and the tone of the arteries, increasing the volume of the pulse, and rendering it incompressible. It gives a glow to the whole system, and warms the body, denoting thereby a general dilatation of the capillaries, and increased metabolic changes; and thus an increase of heat; and if taken in low conditions of health, it will soon begin to increase the appetite, by the very action noted.

Speaking of the effects of the inhalation of oxygen, the late Samuel S. Wallian, in his work upon "Oxygen and Other Gases in Medicine and Surgery," calls attention to the fact that oxygen always develops the appetite. He says: "The majority of invalids to whom we have administered this agent, have almost all experienced at the end of a few days, this need of reparation, as indicated by the appetite. This is an important point, since it indicates what is being accomplished in the heart of an organism of which the blood has been better oxygenated, a phenomenon accompanying reconstructive metamorphosis. Beddoes,

and all those who, like him, have employed oxygen, have been struck by this remarkable influence on the digestive function; but minds wholly occupied with the treatment of phthisis have not sufficiently comprehended what conclusion would be drawn from this invaluable action of oxygen toward the reconstruction of an enfeebled organism."

Caillens, however, one of the first to prescribe vital air in phthisis, very clearly saw that "*it is by restoring the vital energies that this gas acts as a curative means.*"

According to this exposition of the effects of oxygen, it evidently either stimulates the ultimate cells of all tissues to more active processes, directly; or else its first action is upon the vaso-dilator nerve centers, causing a general expansion of the arterioles throughout the body, thus "restoring the vital energies." Oxygen should only be administered properly combined and prepared for therapeutic purposes, or it will be found insufficient in action, and not only so, but injurious, also, on account of the chlorine and other gases contained in that prepared for commercial uses. The combination most widely endorsed by all competent writers upon the subject, consists of two parts of pure Oxygen, one part of Nitrogen Monoxide, and one per cent. of Ozone.

This formula is in use by the London Oxygen Hospital, and is undoubtedly the best for administration in the majority of cases, because it is pure, unirritating to mucous membranes, and will be absorbed by the capillaries to the full requirements of the patient.* It is almost impossible to give an over dose of oxygen, as the system invariably rejects more than is required; the patient turning away from the inhaling tube immediately a sufficiency has been inspired. Oxygen alone, is too dense in its specific gravity for absorption by the capillaries, and has too great a local oxidizing effect, therefore its dilution with a gas of lighter specific gravity is necessary to obtain successful results.

Cold over the spine has been successfully used in all spasmodic forms of disease, by expelling the excess of

*The Oxygen obtained in the Walton Laboratory, N. Y., is thus combined.

blood from the motor nerve cells, and by its action on the sympathetics at the same time, inducing expansion of blood vessels through the system, and a better nutrition of the organs, tissues, and muscular system; therefore permanently driving the excess of blood from the nerve centers through the greater demand for it, by the better nourished body; thus curing the disease.

In many forms of skin disease, cold over the spine will quickly relieve and cure; and in neuralgias, as well as in neuritis, it is, in the majority of cases treated, entirely successful. Enough has been said for one paper to demonstrate somewhat the effect of the circulation upon the nerve centers; and the action of those centers upon the systemic circulatory apparatus in health and disease, according to the amount of blood circulating within them. Our object has been to evidence the wide field of treatment that is open to the profession, by the study of the central nervous system as the originating source of disease in general, and the value of investigation into the effects of drugs upon these centers, as judged by their action upon the expansion and contraction of blood vessels. It is with the hope that we will create interest in what we are convinced is a study of deep importance to the profession, and to those under their care, that we terminate this writing.

The Significance of "Degeneration" to the General Practitioner.*

By HALDOR SNÉVÉ, St. Paul, Minn.

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Medical Society.

FOR the past few years the press, both medical and lay, has been full of what has popularly come to be known as "degeneration"; a word made notable by Max Nordau's book; and as each special branch of study has a great many technical expressions which simply cover up meanings to the uninitiated, I have adopted for our purpose here the word "degeneration," which really means in the sense that I use it, the anthropology of degeneration. I have also endeavored to avoid as far as possible technical names of all kinds. Now what do we mean by degeneration? For our purposes it means a decadence or defect of the mental and moral qualities of an individual.

As I hope to show you later, this is both frequently associated with, and dependent upon, physical degeneration or defects.

Let us first have a short glance at the history of crime, insanity, and prostitution in its broadest sense. Among the savages homicide has been frequently considered proper and justifiable; among certain African tribes it is counted proper

*Read before the Minnesota State Medical Society, June, 1897.

to extinguish life in old and useless people, by beating them on the head with a club.

Among more civilized peoples, as for instance, the vikings of old, it was not considered a murder to take the life of a slave at the caprice of his master, or to carry away treasures after conquering the owners; in our own times, war, or the murder of large numbers of individuals in battle, is still considered justifiable. Murder, parricide, infanticide and robbery, have not always been considered crimes, and crimes are acts which vary with the conceptions of right and wrong that may exist at a given time in a community.

Insanity in ancient times, was only a manifestation of possession by a demon or unclean spirit, and the treatment of the insane corresponded to this conception.

To-day it is our proud boast that medicine has established the fact that insanity is a disease.

The history of prostitution is a varied one. In Greece, prostitution was quite an honorable profession at one time, and fallen women were the advisers of the Great.

In the time of Louis the XIV and XV, an almost analogous condition existed. At other times these offenders have been compelled to wear red gowns as badges of shame, have their ears cut off, and even be flayed alive.

Paupers, idiots and imbeciles are other classes of degenerates that will here only be referred to in passing.

V. Krafft-Ebing has designated all of the classes referred to above by the appellation, "Nature's step-children," a peculiarly happy name.

The legal treatment of these unfortunates at different times in the World's history would fill volumes. Briefly it may be said that the primordial idea was punishment; and it may also be said that the primordial idea of punishment was vengeance. "An eye for an eye" and "a tooth for a tooth", it read; later it was also for the intimidating and deterrent effect that punishment would have on crime; and to-day it may be said that punishment for crime is a combination of the foregoing, together with—more prominently—the protection of society. It is of burning importance

that the foundation principles of degeneration, its manifestations and treatment be acquired, as it affects us not only as citizens, but as doctors or teachers. It behooves us to keep abreast of the march of knowledge, since it may justly be said that medicine has contributed more to all branches of learning than all the other professions put together; and furthermore, as will be indicated later on, we can do much in the direction of prophylaxis of crime in our capacity of family physicians and advisers; and lastly, it is in no sense fortunate for the authority of physicians, that a person is by two medical witnesses declared mentally sound, normal, and by others, insane and irresponsible.

In looking over the law-books of various periods we can see clearly the advances made by science, decade after decade, yea, even year after year, and no matter how different are the conceptions and conclusions, all questions of irresponsibility and the application of regulations and laws for the conservation of human happiness, must finally come to scientific medicine for solution. Therefore it is possible to-day, to speak of irresponsibility because of abnormal mentality, in a sense understood by all civilized peoples.

Especially do I wish to call attention to the modern criminal anthropology, or better, degeneration anthropology, to show you that the modern agitation of these questions is only friendly to crime and criminals, in so far that it wishes to substitute for punishment, something of more utility.

It is no longer possible for the well-informed man to say, "Crime is nothing but natural cussedness," and that "all murderers should be strung up," and thereby dismiss the subject.

We may with justice say that modern criminology is the fruit of the impulse given these studies by the Italian, Lombroso, although many great men had worked in these fields before. Gall has been called the grandfather of criminology, but it was not until Morel, in 1857, gave us his "Treatise on the Degeneration of the Human Species" that new light was cast on the subject. This work is to-day,

with all its faults, one of the epoch-making works in the literature of psychiatry. Lombroso has endeavored to show that the criminal can be shown to be a special type (*delinquentenato*), a man born to crime, which Lombroso conceives to be an atavism, or a return to carnivorous or savage ancestors, with anatomical ear marks whereby he can be recognized and a criminal career prognosticated.

Before we take up this question further let us first sketch briefly the development of the mind.

To me the brain can be compared to the wax-cylinder of a phonograph; before using it is perfectly clean, there is nothing on it, but it has certain peculiarities of structure; certain parts of it are more susceptible to impression than others, certain impressions are more indelibly marked by the vibrating needle and give back sounds more perfectly; thus, the infant at birth is perfectly ignorant; it is the sum of two lines of ancestors; and certain hereditary tendencies of both lines predispose it to development in certain directions *principally as regards form and structure*; these last affecting function powerfully.

Impressions now begin to stream in on the brain from the outside world through the senses, inducing activity in the brain cells which convert these impressions into motion, through the muscles, either immediately or remotely. In other words, the brain is only a reflex organ, being in its highest development nothing but an aggregation of the simple cell whose reflex action is well known to you all. Mind in its relation to the brain is the same as vision is to the eye. Both are abstractions not easily defined. Like the wax-cylinder in the phonograph the brain can only give back that which has been put into it. Consciousness is a function of the nerve cell, just as we speak of irritability or motion as a function of a cell.

The various faculties of the mind are therefore nothing more than conscious subdivisions of this complicated reflex act. A baby receives an impression through one sense associated with impressions from one or more of the other senses; this is the faculty of *perception*; future impressions of the same or analogous character traverse these various

associated paths, and the consciousness of the preceding odes we call *memory*; their comparison we call judgment and reason. (Under this comes so-called reflection). The strength of one suggestion over others induces some particular kind of muscular action; this apparent choice of action being called the *will*. Now there is nothing truer in the world than that everything is relative.

Around the question *will*, hinges most important problems. If it be true that mind is nothing but a sort of anatomic reaction to external (including also auto-suggestions) impressions, then there can be no such thing as an absolutely free will. Even granted that such a thing existed, one's choice would necessarily be bound by the number and kind of suggestions, past and present, coming to the consciousness. This question is one of the most debated in psychology, a science weighted down with the superstitions of past ages. Scientifically, we must, it seems to me, consider mind nothing but the activity of the nerve cells; the secretion of the brain if you will, and leave soul out altogether in the study of brain function.

The action of the brain depends upon its structure modified by heredity and its development, and by its environment; *and the keynote of mental action is suggestion*, broadly speaking.

If we look at mankind living in the various states of society we can see that man has a certain normal relation to the outside world; he lives according to laws, rules and customs made by society (God?) for its protection and pleasure, and according to laws that nature in its evolution has made for him, which he observes according to his understanding of them. If he offends against a law of society, its laws take cognizance of it.

If he offends nature she exacts a penalty. In other words, if he gets out of his proper relation to the outside world he commits a crime; crime is also a relative conception and varies in degree only, from the stealing of a pin to the murdering of a family. Given through proper heredity, the requisite form and structure, and the proper envi-

ronment (which means education) the being will become what we call a normal individual.

Now if Lombroso is correct in his assumption of a born criminal, we have a delinquent through improper heredity because of improper form or structure of the brain; consequently education cannot reclaim such a person, it can only improve him. The other class of criminals that I would make, is the criminal through improper environment; in this class are all those who have been educated in crime, the offender through passion, the occasional criminal and so on.

The last are all susceptible to improvement and reform by proper education. All that has been said with regard to crime applies to prostitution.

When his mental faculties are wanting or very imperfect we have what we call idiocy and imbecility; these conditions may depend upon heredity, or disease just before, at, or soon after, birth.

There is another variety of defective, in whom the mental perversity is manifest at or about puberty; I refer to the paranoiac.

This type, with the epileptic, forms the *insane* criminals, the most dangerous of all forms.

Now about insanity; all writers speak of the difficulty, nay, impossibility, of defining insanity, and yet each one offers a definition as different as the physiological and pathological psychology of each. Everyone seems to think that to define insanity is an impossible task, but it is no more impossible than any other relative thing. We must define insanity as it is necessary both for study and for law.

The impossibility of a *perfect* definition is obvious since we have by no means exhausted either physiological or pathological psychology.

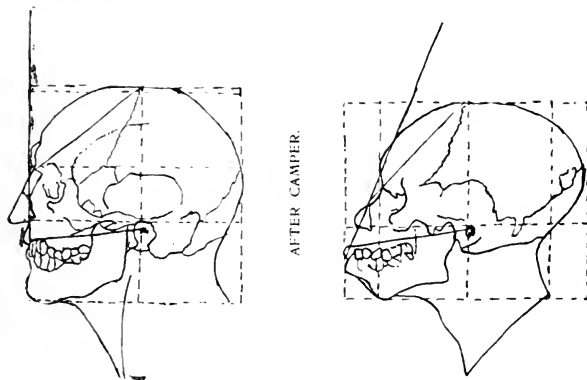
Definitions of insanity must necessarily vary with our knowledge of the subject. To-day it seems to me that a fairly good definition after the considerations above given is:

Insanity is that affection of the mind, due to disease of the

brain, which puts a person out of his proper relation to the outside world.

There are many flaws that may be picked in this definition, but on the whole I think it will answer fairly well.

Lombroso insisted that we should study all these forms of degeneration anatomically and anthropologically, noting the skin, the form, the skull, and particularly the functions, sensibility, etc., with the idea that these people are a special variety of the human race; and he thinks that he has found marks of degeneration grouped in the same individual sufficient to produce a type, in the proportion of 43 per cent.



CAUCASIAN. No. 1.

NEGRO. No. 2.

One thing strikes everybody, when visiting a penitentiary or an asylum, and that is that we are looking at inferior specimens of humanity. Of greatest interest in these studies are the cranial conditions. Camper discovered that the profile of the different races allowed the formation of a scale and gave us the *facial angle*. If a line be drawn from the external ear opening to the alveolar border of the upper jaw and from the last a tangent to the most prominent point of the forehead, an angle occurs which is small (40°) in apes, larger (70°) in negroes, and largest (85°) in Europeans.

This means that the size of the angle is dependent on the development of the frontal lobes, and it is here that we locate most nearly the intelligence.

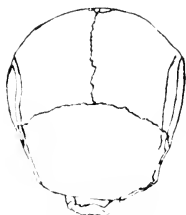
If therefore an European has a facial angle like a negro (prognathous), or yet less in the microcephalous, this must be considered a sign of degeneration.

The facial angle, however, is not sufficient as a mark of race. A much greater significance has been accorded the *cephalic index* introduced by the Swedish anatomist, A. Retzius. He expressed the greatest cranial breadth in percents of the length according to the following formula:

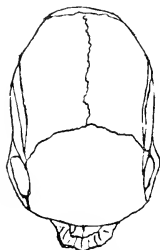
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and presented three groups of crania:

Dolicocephalous (long head) with an index of not over 78, *mesaticephalous* with an index of from 78—80, and *brachycephalous* (round head) with an index over 80.



BRACHYCEPHALY.



DOLICOCEPHALY.

These measurements are of scientific interest, but as yet they are of little practical value, because we have no normal type for comparison; and the purely technical difficulties in making them, present many sources of error. I will not even enumerate the many other stigmata of degeneration which are doubtless familiar to most of you, such as deformed ears, flat palate, masculine type of face in women, and so on, but I wish to briefly refer to epilepsy, with or without convulsions, which has been demonstrated to be present in criminals in the proportion of 40 per cent. (Rossi), and which is so frequently present in idiots, imbeciles, and sexual perverts.

Ferri finds that analgesia is extremely common in degeneration, and calls insensibility the key of innate criminality.

Lombroso* insists that at least *five* stigmata of degeneration must be present in order that we may prognosticate a criminal.

Dedichen,† from whose writings I have quoted freely, believes *psychic stigmata* of much more practical use. The most important of these is the so-called *irresistible impulse*, where a person feels impelled beyond the will, to perform some action, frequently a criminal one.

Sexual aberrations studied so carefully by Krafft-Ebing,‡ Tarnowsky and others, is another, as is also *Moral Insanity*, called *moral idiocy* by Krafft-Ebing, in which there is a defect of the moral sense probably due to some defect of brain structure of unknown character, which prevents the normal reaction on our body by a suggestion conveyed to the consciousness, so that the sight of suffering or torture produces indifference or even pleasure, instead of pity, pain, and remorse. This condition of the mind, so well exemplified by Harry Hayward, I prefer to call *moral defect*, and it occurs often in individuals in whom the intelligence is keen. I consider it closely related to paranoia. *Dipsomania* is another mental stigma.

Having thus merely touched upon evidences that there exist in a number of our criminals, especially those whose crimes are directed against our bodies, a physical basis for crime due to heredity or disease, there is another class whose lapses are due to environment.

This is the largest class by far and means in a broad sense an improper education of the aggregation of brain faculties which we denominate mind. Put a child into surroundings where vice is looked upon as virtue, where law is considered an oppression of the poor by the rich, and its officials as its natural enemies, is it a wonder that the child will grow up to look upon burglary as a profession, and

*Lombroso in *Forum*, Sept. 1895.

†Dedichen—*Fidsskrift f. Den Norske La geforening*, Sept. 1893.

‡*Psychopathia sexualis*, v Krafft-Ebing.

when placed in one of our prisons as they are now mostly conducted, will wish, when he hears of the grand exploits of others, that he had not been a greater criminal himself.

Carl Looft,* in a recent monograph on idiocy and imbecility, established pretty well that the physical stigmata of degeneration are dependant in a preponderant degree upon rickets in infancy or early childhood, or to other chronic infection or intoxication diseases.

This is of very great practical importance to us, as a proper recognition and treatment of these diseases which stunt both brain and body will enable us to prevent the later conditions due to degeneracy.

The family physician who conceives his duty to be something else besides writing prescriptions, will also be able to direct the parents to a better understanding of dangers to children in bad physical and mental hygiene, to suggest proper training, and indicate their responsibility to the unborn generation.

The general practitioner will also endeavor to prevent the marriage of epileptics, paranoiacs, dipsomaniacs, etc., both by advice and the education of his community to the passage of proper laws; also to place properly educated criminologists at the head of penitentiaries and reformatories, clothed with the power of the indeterminate sentence, and with the same responsibility that our superintendents of hospitals of the insane have; and also work for the erection of hospitals for the continual detention of insane criminals.

Criminology is now passing through the same sort of an evolution that insanity has had, and a rational distinction between the doctrine of "natural cussedness" and the real causes of crime will in time arise.

Gentlemen, the work of all these investigators enables us when examining a patient who presents a number—five or more—of the physical stigmata of degeneration, to prognosticate at least a *predisposition* to crime, insanity, or other aberration from the normal state. The

*Carl Looft "Kliniske og Etiologiske studier over Psykiske Udviklings Mangler Hos Born."

presence of *one* of the psychic stigmata enumerated, indicates the same thing.

You may ask, what does it signify that we establish in the case of criminals, that heredity or disease has rendered them unable to resist these bad impulses? They are just as dangerous. It signifies that we must only consider them with reference to the *protection of society*.

It makes no difference whether disease or education has made a criminal of a being, society demands protection from him and that is *all* that society can ask. Would you execute justice on an individual for a crime you would need to possess the attributes of a God, and frequently have to begin 200 years before the birth of the delinquent.

The savages who hang a poor negro to a limb because he succumbs to a temptation stronger than his moral education on account of inferiority and too recent civilization, think that they are intimidating others from committing the same crime; but the temptation occurs, the negro falls and the farce is repeated month after month and year after year, and in reality the executioners are only expressing their hate for an inferior race and complying with the ignorant dictates of their desire for vengeance.

When we deal with a criminal we are to take into account the presence or absence of the physical and psychic stigmata of degeneration and also a symptom known as recidivism or relapse, and the circumstances of the crime; then we can intelligently proceed to a consideration of the best means to protect society. If the man is a born degenerate and especially if he is a recidivist, we know that he should be confined; and in order to secure ourselves from more of his kind we should emasculate him or her as the case may be.

If he belongs to the second class, or criminal by environment, let us educate him and reclaim him. Here in Minnesota, thanks to some men of advanced ideas, we have the St. Cloud reformatory, certainly a huge stride in the direction of enlightenment and reform. Our prisons used to be only schools for crime. *Work* is the keynote of method of reform in our penitentiaries; and I think that

we should arrange our sentences in such a manner that the criminal's work should be made to recompense as far as possible the person injured.

After this, gentlemen, when you are called upon to adjudge a person insane in our probate courts, I hope that the presence of stigmata of degeneration will aid you in your difficult task.

When we were speaking of psychic stigmata I spoke of moral insanity; let me give you an illustrative example: One of my patients in the Dayton (Ohio) hospital for the insane, A. B., aet. 24, of neurotic heredity (mother was a delicate neurotic woman of unusual literary gifts), suffered in youth with an abscess of the brain affecting the frontal lobes; after this the boy became altered in disposition, irritable and incorrigible and soon his offenses started him on the penal circle. He went through the reform school, was confined in the city lockup and finally after an unusually aggravated offence escaped the penitentiary by being adjudged insane. During the many years of his confinement at the Insane Hospital he was nearly always pleasant and tractable, working at house painting and so on as occasion demanded, but twice he ran away, one time making a trip around the world. His stature was short, head dolicocephalous, jaws large and the lower one projecting beyond the upper, fond of tobacco and alcohol, but intelligence quite keen. He had a propensity for useless lying and for stealing. During my stay at the hospital he was taken home for a visit by his mother and one night being refused five dollars, hid an ax under his bed with the intention of braining the mother who had suckled him at her breast, but fortunately his purpose was discovered in time to defeat it and he was immediately returned to the hospital.

This patient was very suggestive, and imitated the attacks of an hystero-epileptic under his care. These I cut short by threatening cold douches; strong counter suggestions. In this case disease had worked a change in his brain which caused a moral defect, disturbing the normal

reaction to external impressions although he was keenly alive to the difference between right and wrong.

In conclusion I wish to say a word about the press and about the death penalty. What effect do you suppose the detailing of the minutest particulars of a brutal crime has on minds predisposed to abnormality. It is simply a suggestion to store away and be imitated when circumstances offer the opportunity. As a result of vivid descriptions crime is epidemic just as suicide is; the particulars possess morbid interest which frequently obscure our sense of honor, and instead of strengthening our morals weaken them.

The best safeguard against crime, as Arthur MacDonald* says, is education and proper instruction, and our modern newspaper certainly does not afford either one. "Life is absolutely inviolable; man is not master of it; he has no right to dispose of it; not free to renounce it if he pleases; neither the individual nor society has the right to dispose of it by a stroke; could we only protect society by capital punishment we would have the right, but even then an innocent would occasionally be sacrificed and confinement protects us from the criminal and emasculation from others of his kind. If execution did prevent capital crimes why do such crimes occur where such laws are in force? It is not death that deters, it is repression. Criminals condemned to a life sentence have killed their keepers in order to mount the scaffold.

"The death penalty instead of being an example is a corruption; it offers the public the details of executions, which harden the feelings.

"It leads to murder by the law of imitation."

*Circular of Information, No. 4, 1893. "Abnormal Man," "Essays on Education and Crime and Related Subjects" by Arthur MacDonald.

Insane Confessions, Errabund Lunatics, The Corpus Delicti and Crime.

By JAS. G. KIERNAN., M. D., Chicago.

Fellow of the Chicago Academy of Medicine; Foreign Associate Member French Medico-Psychological Association; Professor of Forensic Psychiatry,
Kent Law School, Chicago.

THE recent Illinois case of the People vs. Luetgert has attracted much attention to certain forensic relations of psychiatry to the topics announced in the title of this paper. Wharton and Stille* enunciate with emphasis the opinion of Lord Hale that no person should be convicted of manslaughter or murder unless the deed was proven to be done or at least a dead body found. They point out there-
anent that confession is too often due to mental disorder to be accepted without question. Indeed, Beccaria, the great reformer of Roman law, claimed (unlike Daniel Webster in one of his clap-trap demagogic teleologic speeches) that confession was always an evidence of mental perturbation at least, and hence of questionable value even when seemingly voluntary. This phase of the subject I have already discussed at length in the ALIENIST AND NEUROLOGIST† and hence only refer to it in passing.

Within the last thirty years, remarks John Paget,‡ the English Courts at Westminster were for many days occupied in the investigation of a charge of a most serious nature, brought against a physician by the husband of one of his patients. The lady kept a journal, in which she

*Medical Jurisprudence III. p. 777.

†January and April, 1895.

‡Judicial Puzzles.

noted down with the utmost minuteness the rise, progress, and entire history of an overwhelming and passionate attachment between herself and the doctor. This journal came to the husband's hands. The explosion may be imagined. The husband very naturally instituted proceedings for a divorce. When the trial came on, the journal, consisting of three bulky volumes and extending over a period of five years, was produced. Nothing could be clearer, more explicit, or more astounding than the disclosure it contained. But there was not a particle of confirmatory evidence to support any one of them. It was established beyond a doubt that the lady, though apparently conducting herself like other people and giving no external sign of disordered intellect, was upon this particular subject altogether insane, that the doctor was innocent throughout the affair and wholly unconscious that he had for years been made the hero of a romance revealing the adventures of Faublas.

This disease sometimes assumes a form even more dangerous than that of self-accusation. A crime is committed or supposed to have been committed. The details of an inquiry of an exciting nature fill the columns of the press. Presently the imagination fastens upon the circumstances as they are gradually revealed and the unfortunate patient fancies that he has been a witness of the whole transaction, comes forward believing that he is discharging an imperative duty and with all the clearness, coolness and certainty characteristic of truth, deposes to the creation of his heated brain. A case of this kind occurred at the winter assizes at Stafford, England, in 1857. The body of a girl named Elizabeth Hopley was found in the canal at Bradley early on the morning of April 30. There were no marks of violence. About ten o'clock on the previous evening she had left the house of her aunt for the purpose of going to the place where a young man to whom she was engaged to be married, was in the habit of working. Her road led past the place where her body was found and it was supposed that, dazzled by the light of some coke fires, she had missed her way and fallen over the low wall by which the canal was at that spot very insufficiently guarded.

About three weeks, however, after the girl's death, a neighbor of the name of Samuel Wells declared that Elizabeth Hopley had been murdered and that he had been present when the crime was committed. A day or two afterwards he was summoned before the magistrate when he told the following story. He said that on the night of April 29 he was on duty as a private watchman on some premises near the bridge which crossed the railway, that he saw two persons, a man and a woman on the bridge and heard a woman's voice say: "Philip, don't kill me! You said you would kill me before." That the man then raised his hand and struck the woman a violent blow on the head which knocked her down. Upon this he went up and instantly recognized the man as Philip Clare, whom he well knew. He exclaimed, "Philip, you'll have to suffer for this." Clare turned and replied; "If you speak I will serve you the same." Clare then lifted the young woman up from the ground and followed by Wall carried her over the railway bridge and down a road past some cottages until he came to the canal. Here he paused and turning round again upon Wall said: "Now if you speak or tell anyone I will kill you. I will serve you the same way as I served her and set some one else to watch instead." He then in Wall's presence plunged the woman who still seemed helpless and insensible into the canal close to the spot where the next morning her body was discovered.

Wall fixed the time when this occurred as twenty minutes after midnight and it must be remarked that he was employed as a watchman and was likely to be habitually observant of the time. He said that he returned to his employer's premises, being prevented by his fear of Clare from giving any alarm that after about quarter of an hour had elapsed, Clare came to him and renewed his threats terrified by the apprehension of immediate violence he locked himself up in the engine house until daylight. Upon the statement Clare was taken into custody and committed for trial. At this trial Wall repeated the story he had told the magistrates. There was a total absence of confirmation. It was met by proof that the body showed no

sign of having received any blow of the kind described by Wall, that there had been men at work pumping water during the whole night in the immediate neighborhood who must in all probability have heard something, had the affair taken place as Wall described. It was shown moreover that from half past six until about eleven p. m. Clare had been in a public house at Bilston which he left in company with four other men, one of whom accompanied him till within half a mile of his own house. Another witness, a neighbor proved that about twelve o'clock he met Clare and entered into conversation with him near his own door; that they remained together until two o'clock next morning. There could not be the slightest doubt of Clare's innocence and the jury of course acquitted him. Nor could there be any doubt that Wall believed the story told. The minuteness, the peculiarity, the graphic details, the conversation, all bear the stamp of that subjective truth which our language has no word to distinguish from objective truth. It is curious to observe in how many respects this case resembles that of John Perry. In both there was a period of incubation during which the mind brooded in silence over its creations, in both the accuser professed to have been present and thus a participant, though in different degrees, in the crime. In both the conversation with the supposed murderer are minutely detailed, in both the tale is solemnly repeated consistently and without variation at considerable intervals of time and subject to the test of judicial examination.

A gentleman of high social position instituted proceedings against his wife with the view of obtaining a divorce. The innocence of the lady was strongly asserted and finally believed. Counter charges of conspiracy and perjury were brought against the husband and his witnesses. The lady herself was in a state of disordered intellect produced, it was asserted, by the conduct of the husband which precluded her from taking any part, or affording any assistance toward her own defense which, however, was vigorously maintained by friends who were firmly convinced that she was wholly innocent. The inquiry lasted for nearly

four years and at length reached the House of Lords where the case on behalf of the husband had just terminated when Parliament rose for the Easter recess.

On the House re-assembling there appeared at the bar an elderly and respectably looking clergyman who to the surprise of every one deposed upon oath that six or seven years before, namely, in the month of May or June, in the year 1840 or 1850, he could not say which, he had been an actual eye witness of the guilt of the lady. He swore that he had never mentioned the circumstance during the six years that had elapsed but to one person and that person was dead. He had permitted his daughters and sisters to continue on terms of intimacy with the lady whom he accused. He was unable to fix the time of the occurrence even as to the year in which it took place or to state who was the partner in her guilt. Every avenue of contradiction was thus cut off and the story was left to stand or fall according to the respectable character and social position of the witness and the apparent conviction with which he told his story or the improbable nature of that story itself, coupled with the fact that during a most searching investigation carried on by adverse parties with the utmost eagerness for a period of between four and five years, no circumstance which in the slightest degree corroborated that story had ever come to light might be considered to be entitled to the greater weight which was not long, however, before the difficulty was solved. Within a few months the witness who had given this extraordinary history, gave himself up to justice, declaring with every expression of contrition that he had been guilty of forging certain bills of exchange, that they had nearly reached maturity, that he had no means of providing for them, that detection was inevitable and that he wished to anticipate the blow and make such reparation as was in his power by a full acknowledgment of his guilt. Upon investigation it turned out that there was not the slightest foundation for his story, no forgery had been committed, no such bills of exchange had been in existence. His delusion as to his own guilt was as complete as his delusion as to that of the lady against whom he had given

evidence, over whose strange history he had no doubt brooded for years until the thick coming fancies of his brain assumed the form and appearance of substantive creations.

Dr. Southwood Smith, after observing how common false self inculpativè evidence is, gives some remarkable instances in which it has occurred. Of these the following is perhaps the most striking. In the war of the French Revolution the *Hermione* frigate was commanded by Captain Rigot, a harsh man and a severe commander. His crew mutined and carried the ship into an enemy's port, having murdered the Captain and many of the officers under circumstances of extreme barbarity. One midshipman escaped by whom many of the criminals, who were afterwards taken and delivered over to justice one by one, were identified. Mr. Finiaison, the Government actuary, who at that time held an official situation at the admiralty stated:

"In my own experience I have known on separate occasions more than six sailors who voluntarily confessed to having struck the first blow at Captain Pigot. These men detailed all the horrid circumstances of the mutiny with extreme minuteness and perfect accuracy, nevertheless, not one of them had ever been in the ship nor had so much as seen Captain Pigot in their lives. They had obtained by tradition from their messmates the particulars of the story. When long on a foreign station, hungering and thirsting for home, their minds became enfeebled; at length they actually believed themselves guilty of the crime over which they had so long brooded and submitted with a gloomy pleasure to being sent to England in irons for judgement. The Admiralty was always able to detect and establish their innocence in defiance of their own solemn asseverations."

A magistrate of one of the northern counties of England well known for his active benevolence during the discharge of his duty, one of the visiting justices of the County Lunatic Asylums, entered into conversation with one of the patients and was much struck with his rational demeanor and sensible remarks. The man expressed himself grateful for the kindness with which he was treated and said he was well aware that it was necessary that he should be under restraint, that although he was perfectly well at that time he knew that he was at any moment liable to a

return of the insanity, during an attack of which he had some years before murdered his wife and that it would be unsafe to permit him to go at large. He then expressed the deepest contrition for his crime and after some further conversation the magistrate left him, not doubting the truth of his story. Referring to the case in conversation with the master of the asylum he expressed much interest and referred to the patient as that unhappy criminal lunatic who had murdered his wife, when to his astonishment he was informed that the wife was alive and well and had been to visit her husband only the day before.

Observation on this interesting subject cannot be better concluded than in the words of the old jurist Heineccius; viz., "confession is sometimes the voice of conscience." Experience however teaches us that it is frequently far otherwise. There sometimes lurks under the shadow of an apparent tranquility an insanity which impels men readily to accuse themselves of all kinds of iniquity. Some, deluded by their imaginations, suspect themselves of crimes which they have never committed. A melancholia temperament, the *tadium vite* and an unaccountable propensity to their own destruction urges some to the most false confessions whilst they were extracted from others by the dread of torture or the tedious misery of the dungeon. So far is it from being the fact that all confessions are to be attributed to the stings of conscience that it has been well said by Calphurnius Flaccus: "Even a voluntary confession is to be regarded with suspicion. According to Quintilain a suspicion of insanity is inherent in the nature of all confessions."

The relations of the errand tendencies of the insane to *corpus delicti* and hence to the necessary proof of homicide, are intimate and important. Two most decided cases of this relationship came under judicial determination in the United States. The first case I report in the words of the attorney for the defense, Abraham Lincoln.

The chief personages in the drama are Archibald Fisher, supposed to be murdered, and Archibald Traylor, Henry Traylor and William Traylor, supposed to have murdered him. The three Trailors are brothers. The first Archibald,

as you know, lives in town, the second Henry, in Clary's Grove and the third, William, in Warren county; and Fisher, the supposed victim, being without a family, had made his home with William. On Saturday evening, being the 29th of May, Fisher and William came to Henry's in a one horse dearborn and there stayed over Sunday; and on Monday all three came to Springfield (Henry on horse-back) and joined Archibald at Meyer's. That evening at supper Fisher was missing and so next morning some ineffectual search was made for him; and on Tuesday, at one o'clock p. m., William and Henry started home without him. In a day or two Henry and one or two of his Clary Grove neighbors came back for him again and advertised his disappearance in the papers.

The knowledge of the matter thus far had not been general and here it dropped entirely till about the 10th inst. when Keys received a letter from the postmaster in Warren county that William had arrived at home and was telling a very mysterious and improbable story about the disappearance of Fisher which induced the community there to suppose he had been disposed of unfairly. Keys made the letter public which immediately set the whole town and adjoining county agog.

The mass of people commenced a systematic search for the dead body while Wickersham was dispatched to arrest Henry Trailor at the grove and Jim Maxey to Warren to arrest William. On Monday Henry was brought in and showed an evident inclination to insinuate that he knew Fisher to be dead and that Archibald and William had killed him. He said he guessed the body could be found in Spring Creek between the Beardstown Road and Hickox's mill. Away the people swept like a herd of buffalo and cut down Hickox's mill dam *volens volens* to draw the water out of the pond and then went up and down and down and up the creek fishing and raking, and raking and ducking, and diving for two days; and after all no dead body found. In the meantime a sort of scuffling ground had been found in the brush in the angle or point where the road leading into the woods past the brewery and the one leading past the brick grove meet. From the scuffle ground was the sign of something about the size of a man having been dragged to the edge of the thicket where joined the track of some small wheeled carriage drawn by one horse as shown by the road-track. The carriage track led off toward Spring Creek. Near the drag trail Dr. Merryman found two hairs which after a long scientific (?) examination he pro-

nounced to be triangular human hair which term he says includes within it the whisker, the hair growing under the arm, and on other parts of the body, and he judged that these two were of the whiskers because the ends were cut showing that they had flourished in the neighborhood of the razor's operations. On Thursday Jim Maxey brought in William Traylor from Warren. On the same day Archibald was arrested and put in jail. Yesterday (Friday) William was put upon his examination before May and Lavelly; Archibald and Henry were both present. Lamborn prosecuted, and Logan Baker and your humble servant defended. A great many witnesses were introduced and examined, but I shall only mention those whose testimony seemed most important. The first of these was Capt. Ransdell. He swore that, when William and Henry left Springfield for home on Tuesday before mentioned, they did not take the direct route, which leads by the butcher-shop; but that they followed the street north until they got opposite or nearly opposite, May's new house after which he could not see them from where he stood, and it was afterwards proved that, in about an hour after they started by the butcher's shop from toward the brick-yard, Dr. Merryman and others swore to what is stated about the scuffle-ground, drag-tail whiskers and carriage tracks.

Henry, introduced by the prosecution, swore that when they started for home, they went out north as Ransdell stated and turned down west by the brick-yard into the woods and there met Archibald, that they proceeded a small distance further when he was placed as a sentinel to watch for and announce the approach of any one that might happen that way; that William and Archibald took the dearborn out of the road a small distance to the edge of the thicket where they stopped and he saw them lift the body of a man into it, that they moved off with the carriage in the direction of Hickox's mill and he loitered about for something like an hour, when William returned with the carriage, but without Archibald and said that they had put him in a safe place, that they went somehow, he did not know exactly how, into the road close to the brewery and proceeded on to Clary's Grove. He also stated that some time during the day William told him that he and Archibald had killed Fisher the evening before; that the way they did it was by him (William) knocking him down with a club and Archibald then choking him to death.

Dr. Gilmore, introduced on the part of the defense, swore that he had known Fisher for several years, that

Fisher had resided at his house a long time, at each of two different spells; once while he built a barn for him and once while he was doctored for some chronic disease; that two or three years ago Fisher had a serious hurt in his head by the bursting of a gun since which he had been subject to continued bad health and occasional aberration of mind. He also stated that on last Tuesday, being the same day that Maxey arrested William Traylor, he (the doctor) was from home in the early part of the day, and on his return about eleven o'clock found Fisher at his house in bed and apparently very unwell, that he asked him how he had come from Springfield; that Fisher said he had come by Peoria and also told of several other places he had been at more in the direction of Peoria which showed that he, at the time of speaking, did not know where he had been wandering about in the state of derangement. He further stated that in about two hours he received a note from a friend of the Traylor's advising him of his arrest, and requesting him to go on to Springfield as a witness, to testify as to the state of Fisher's health in former times, that he immediately set off calling upon two of his neighbors as company and riding all evening and all night, overtook Maxey and William at Lewistown in Fulton county. That Maxey, refusing to discharge Traylor upon his statement, that his neighbors returned and he came on to Springfield. Some question being made as to whether the doctor's story was not a fabrication, several acquaintances of his (among whom was the postmaster who wrote to Keys as before mentioned) were introduced as a sort of compurgators who swore that they knew the doctor to be of good character for truth and veracity and generally of good character in every way.

Here the testimony ended and the Trailors were discharged, Archibald and William expressing both in word and manner, their entire confidence that Fisher would be found alive at the doctor's by Calloway, Mallory and Meyers who a day before had been dispatched for that purpose; while Henry still protested that no power on earth could ever show Fisher alive.

When the doctor's story was first made public it was amusing to scan and contemplate the countenance, and hear the remarks of those who had been actively engaged in the search for the dead body; some looked quizzical, some melancholy and some furiously angry. Porter who had been very active swore he always knew the man was not dead, and that he had not stirred an inch to hunt him. Langford who had taken the lead in cutting down Hickox's mill-

dam and wanted to hang Hickox for objecting, looked most woe-be-gone, he seemed the victim of unrequited affection as represented in the comic almanacs we used to laugh over. And Hart, the little drayman that hauled Molly home once, said it was too damned bad to have so much trouble and no hanging after all.* The "deceased" made his appearance just in time to prevent re-arrest and conviction.†

The Boorn case is thus narrated by Wharton and Stille.‡

Mr. Boorn and his aged partner were respectable inhabitants of Manchester in the state of Vermont. They were the parents of a son and two daughters besides the unhappy victims, Stephen and Jesse.

Sally, one of the daughters, became the mother of several children by a man named Colvin, all of whom were dispersed among their relatives owing to the mental derangement of their father, which rendered him incapable of attending to his family concern and of providing for them necessary support. Mr. Colvin was in the habit of frequently absenting himself without giving any previous information and rambling in various parts of the country. At one time he was absent as long as nine months after which he was found in the state of Rhode Island. About eleven years after his marriage to Miss Boorn he was again missing which at the time caused little or no alarm as it was expected that he would return as on former occasions. But after a lapse of several years nothing having been heard of him surmises were circulated that he had been murdered. Suspicion rested on his brothers-in-law, Stephen and Jesse Boorn. This suspicion was created by a reference to the frequent altercations that had taken place between Colvin and the Boorns previous to the disappearance of the former and to some unguarded expression of the latter afterwards intimating that Colvin was dead and by their occasionally showing some signs of compunction.

A Mr. Boorn, uncle to Stephen and Jesse, a gentleman of respectability and unimpeachable character, dreamed that Russel Colvin came to his bedside and told him that he had been murdered. This dream was repeated three times. The deposit was a place talked of previous to the dream which was where a house had formerly stood and under it was a hole about four feet square which was made for the purpose of burying potatoes and then filled up. This pit was opened and nothing discovered but a large knife, a

*Lamon's Life of Lincoln, p. 372.

† 4 *Western Law Journal*, 25.

‡Medical Jurisprudence, p. 780.

penknife and a button. Mrs. Colvin, anterior to their being presented to her, described them accurately and on seeing them said all belonged to her except the penknife. A lad was walking from Mr. Boorn's, a small distance with his dog; a hollow stump standing near the path engaged the notice of the spaniel which ran to the place and back again several times lifting up his feet on the boy with winning notes as though to draw the attention of his little master to the place, which had the effect. A cluster of bones was drawn from the roots of the stump by the dog's paw. Further examination was made and in the cavity of the stump were found toe nails to appearance belonging to a human foot; others discovered in a crumbled state had to all appearance passed through the fire. It was now concluded by many that some fragments of the body of Russell Colvin were found. The cluster of bones was before the court of inquiry. They were examined by a number of physicians who thought them to be human; one of the profession, however, thought otherwise. A Mr. Salisbury, about forty years previous had his legs amputated which were buried at the distance of four or five miles. The limb was dug up and by comparing, it was universally determined that the bones were not human. However, it was clear that the nails were human and so appeared to all beholders. The bones were in a degree pulverized but some pieces were in a state of preservation. Suspicions were excited that the body was burnt and some parts not consumed cast into the stump and other bones put among them for deception. Some time after the departure of Colvin a barn belonging to Mr. Barna Boorn was consumed by fire accidentally. It was conjectured that the body was taken up and concealed under the barn and mostly consumed. About that time a log heap was burnt by the Boorns near the place where the body was supposed to have been disposed; it was thought by some that it was consumed there.

Previous to the general excitement Stephen Boorn with his family moved to Denmark, N. Y., about two hundred miles from the place of his nativity where they were comfortably settled; Jesse remained in Manchester where he was arrested and frequently brought before a Court of Inquiry. He at first boldly asserted his innocence but after several days confinement and every art made use of to induce him to criminate himself and his brother, being told that a confession would probably be the means of obtaining his liberty, he did confess that his brother Stephen had told him

that he (Stephen) had given Colvin a blow and laid him aside where no one could find him. Upon this the justice issued a warrant to apprehend Stephen. Capt. Truman Hill, grand juryman for the town of Manchester, Squire Raymond and Mr. R. Anderson set out for Denmark, arrived there in three days. They called on Mr. Eleazer Sylvester, inn-keeper, who in the night, together with a Mr. Orange Clark and Mr. Hooper, belonging to the town accompanied them to the house of the supposed criminal. Mr. Clark went in first and began some conversation about temporal concerns; the others surrounded the house and he (Boorn) was easily taken. The surprise and distress of Mrs. Boorn on this occasion are not easily described, they excited the compassion of those who had come to take away her husband and they made her some presents. The prisoner was put in irons and brought to Manchester. He peremptorily asserted his innocence and declared that he knew nothing about the murder of his brother-in-law. The prisoners were kept apart for a time and assigned to separate cells. Nothing material transpired and they were afterwards confined in one room.

Stephen denied the evidence brought against him by Jesse and treated him with severity. Both the prisoners were repeatedly admonished to pay the strictest regard to truth. Many days were taken up in public examination of the reputed criminals. Circumstantial evidence was brought forward which was so much against them, and they were bound over to await their trial at the sitting of the Supreme Court to be held at Manchester on the third Tuesday of September, 1819. Jesse Boorn, after an interview with his brother, denied that Stephen even told him that he killed Colvin and what he reported about him was false. For some time they both continued to assert their innocence, but being told that they would undoubtedly be convicted upon the testimony already against them and hopes of pardon being held out if they would confess the crime at last, Stephen wrote a statement of what he said were facts, in which he acknowledged he killed Colvin, deposited him in the place where the knife and button were found, that he took the bones from that place and put them under his father's barn, which was soon after burned and the body principally consumed.

A person in jail for perjury testified to a full confession of the murder made to him by Stephen and Jesse and it was so artfully framed to be corroborated by other facts that it had great weight with the court and jury, though it

was wholly false. But he had his ends answered, he got bail and went off. During the interval the prisoners were frequently visited by the Rev. Mr. Haynes in his official capacity, but they did not discover any symptoms of compunction, persisting in declaring their innocence with appeals to Heaven. Stephen particularly at times appeared absorbed in passion and impatience. One day Mr. Haynes introduced the example of Christ under suffering as a pattern worthy of imitation. He exclaimed, "I am as innocent as Jesus Christ," for which extravagant expression he was reprov'd. He replied, "I don't mean that I am as guiltless as He was; I know I am a great sinner but I am as innocent of killing Colvin as he was." The court sat in September and a judicious and impressive change was given to the grand jury by Judge Doolittle, and a bill of indictment was presented against Stephen and Jessie Boorn, but as it was not a full court the trial could not commence.

The court was accordingly adjourned to October 26th, 1819. It was with much difficulty that a jury was obtained. The court ruled that Stephen and Jesse Boorn be jointly tried for the murder of Russell Colvin.

About fifty witnesses were successively examined but they were only corroborative of each other, all tending to prove the leading facts. The jury retired and within about one hour returned and in compliance with a request of Mr. Skinner they were severally inquired of whether they had agreed upon a verdict and each agreed that they had found both of the prisoners guilty of the murder charged against them. The verdict was then publicly read by the clerk. After a short recess his honor, Judge Chase, pronounced the sentence that the prisoners be remanded back into prison and that January 28, between the hours of 10 and 2 o'clock they should be hanged by the neck until they were dead.

Mr. Taber Chadwick of Shrewsbury, Monmouth county, N. J., (brother-in-law of Mr. William Polhamus, of Dover, in the same state where Colvin had lived ever since April, 1813, seeing the account of the trial of the Boorns at Manchester, wrote that Colvin was still alive, and with his brother-in-law, Polhamus, in Dover, about forty miles from Shrewsbury. When the letter came to town every one was struck with consternation. A few partly believed but most doubted. It cannot be that Colvin is alive, was the general cry. Mr. Chadwick's letter was carried to the prison and read to Stephen, the news was so overwhelming that, to use his own language, "nature could scarcely sustain the

shock," but as there was some doubt as to the truth of this report it tended to prevent an immediate dissolution. He observed that he believed had Colvin then made his appearance, it would have caused immediate death, even now a faintness was created that was painful to endure. Soon a letter was received from New York stating that the man supposed to be murdered was still alive.

Mr. Whelply (formerly of Manchester) who was intimately acquainted with Colvin had actually gone to New Jersey in quest of him. Thus there was increasing evidence in confirmation of the letter. As soon as Mr. Whelply had returned to New York he immediately wrote that he had Colvin with him. A New York paper announced his arrival, also, and that he would soon set out for Vermont. Notwithstanding all this, many gave no credit to the report but considered it a mere deception. Large bets were made. Colvin was unwilling to return to Vermont with Mr. Whelply who was obliged to have recourse to stratagem. A young woman of Colvin's acquaintance agreed to accompany him, pretending that she only designed to visit New York. While there she was missing which excited some uneasiness in the mind of the exile.

While staying a few days at New York, to prevent Colvin returning Mr. Whelply told him there were British men-of-war lying in the harbor and unless he kept within doors he would be kidnaped. This had the desired effect. Colvin, when he set for Manchester, concluded that he was on his way home to New Jersey and never perceived the deception until he came to Bennington where he arrived December 22, and saw many people with whom he had formerly been acquainted which filled him with surprise. The county court being in session all were filled with astonishment. The court suspended business for some hours to gaze upon one who legally had been dead and yet was still alive. Stephen related the facts amid great excitement and rejoicing and Jesse was soon at liberty.

In the Luetgert case the evidence bearing on Mrs. Luetgert's mental state for a period greater than a week prior to her disappearance, was, by a ruling of Judge Tut-hill, excluded from the jury. Dr. Gilmore was permitted to testify in the Traylor case as to acts covering a much longer period. The circumstances of the Boorn case bore in many respects close resemblance to that of the Luetgert case, except that suspicion arose longer subsequent to the

disappearance. In the absence of positive evidence as to the mental state of Mrs. Luetgert, because of the judge's ruling, all that can be said is that insane errabund tendencies must, in the light of the Boorn and Trailor cases, be taken into account where a disappearance has occurred and suspicion of murder has been excited albeit no dead body has been found.

SELECTIONS.

NEURO-THERAPY.

ARE YOU IN PAIN?—Dr. Hugo Engel, in the *Boston Medical and Surgical Reporter*, commends Antikamnia as very reliable in all kinds of pain, and, though used internally only, as quickly acting as a hypodermic injection of morphia. [This is late news to the profession but it is still true, Hugo!]

THE FLESHIG METHOD AND HYDROCYANIDES IN EPILEPSY.—Dr. Livingston Hinckley, Superintendent of the Essex County Hospital, among other valuable clinical records in this institution, gives the following: The Fleschig method of treatment of epilepsy, after diligent experiment, was found to be wanting in curative results. Explosions of the status epilepticus supervened in the majority of cases and Bromides resorted to in usual doses to save life. The Hydrocyanate of Iron has also been given some trial in the treatment of epilepsy. I append the results of its use:

L. B., 25 years old; duration of epilepsy, six years. Began to take 1. tablet t. i. d., each tablet containing $\frac{1}{2}$ gr., on October 29th, 1896. Took these tablets eight days, then discontinued. For two months previous to this had an average of about fifteen fits per month, but since taking the Hydrocyanate he has had only about an average of eight per month.

G. B., age 17 years; duration of epilepsy, thirteen years; admitted early in September. Took tablets of Hydrocyanate of Iron, gr. $\frac{1}{2}$ each t. i. d., a little over one month after admission. For a month previous to taking had an average of fifteen fits per month. The average for first month after beginning it was four fits; two months, two fits; but then, although she continued to take the rem-

edy for three months longer, the number of fits began to increase, and several times she had spells during which she would be uncontrollably noisy and excitable.

A. S., age 21 years; duration of epilepsy, fifteen years. Began November 11th, 1896, to take gr. $\frac{1}{2}$ of Hydrocyanate of Iron t. i. d. Took it twenty-seven days. The average number of fits for the three months before taking the Hydrocyanate was seventeen. For one month after taking tablets number of fits were thirty-five per month. Several times he would have a series of four fits one after the other, so he was put back on Bromides, and the following three months on Bromides gave an average of fifteen.

D. W., age 28 years; duration of epilepsy, ten years. Hydrocyanate for six weeks. Patient had eight fits in October preceding the use of the medicine; was put on the medicine November 2nd. Had two fits during November, four during January, four during December, eight during February, five during March, and four during April.

THYROID GLAND IN INSANITY.—Dr. Hinckley also records on this subject as follows: Much has been written pro and con concerning the use of Thyroid in insanity. It has been claimed that there are indications for its use manifested by a definite mental and physical symptomatology. About a year ago Thyroid was administered to a large number of patients whose slow pulse, sluggish peripheral circulation and depressed mental state appeared to indicate its use, but as was then stated without satisfactory results.

About April 1st a series of experiments were instituted in which Thyroid extract was given to patients in whom there seemed to be an indication, based upon a differential blood count. The case cited below is given as a result of clinical experience; others are still under treatment at the present time.

Case L. R., 33 years old; admitted March 18th, suffering from melancholia of two years duration; born in Roumania of Hebrew parentage: married and subsequently divorced; gave a history of maternal heredity; was poorly nourished; tongue coated and had endured most obstinate

habitual constipation; knee-jerk slightly exaggerated. While her physiognomy gave no marked indications of psychalgia, the mental processes were sluggish; she was apparently dull and uncommunicative. On April 5th, some mental depression was noticeable in her variable moods, sometimes obstinately refusing food or medicine and at others consuming food voraciously. Bowels were so constipated that nothing but large enemata of oil would effect movement. On April 10th, her blood and urine were examined, the blood revealed 3,700,000 Erythrocytes to the c m m., 5,140 Leucocytes; ratio of 914 of the former to 1 of the latter. Lymphocytes 15 per cent. Haemoglobine 80 per cent. The urine showed a sp. gr. of 1020, acid, amber, chlorides diminished .003 per cent. The pulse and temperature were taken morning and afternoon until April 13th. Pulse ranged from 88 A. M. to 104 P. M. Temperature taken in the rectum 99 per cent. F., A. M. to 104 per cent. F., P. M.

On April 13th, Thyroid Ext. was given in grs. 5 doses repeated every three hours until five doses were given. April 14th, dose increased to grs. 6 and with the same intervals; at 4 P. M. pulse was 120, temperature 103, skin hot and dry, patient restless; it was difficult to keep her in bed.

Blood examined, Erythrocytes 5,000,000.

Leucocytes 112,000, Lymphocytes 25 per cent.

Haemoglobine 80 per cent.

The violent systemic reaction produced caused the discontinuance of the Thyroid until April 27th. meanwhile the pulse rate remained steadily from 100 to 120. Temperature range from 99 F., A. M. to 101 F., P. M.

April 27th, Thyroid was resumed and given in steadily increased doses by one grain each day until May 1st, when it was again discontinued on account of the depressing effects produced on the heart.

May 2d, blood examined, Erythrocytes 4,750,000. Leucocytes 12,600. Lymphocytes 25 per cent. Haemoglobine 75 per cent.

During the administration of the Thyroid the patient showed a progressive mental improvement, became communicative and cheerful, answering questions readily and

became interested in conversation, her bowels regular and appetite was increased.

THYROID EXTRACT IN MENOPAUSE MENTAL DISORDER.—According to M. Allen Starr, of New York, the peculiar type of depression pointed by Menson and others as occurring at the menopause is benefitted, as Clouston has claimed, by thyroid extract.

PSYCHIATRY.

STEPS TOWARD INSANITY.—Patho-psychical manifestations in the individual evidence neuronie structural defect; until otherwise proved, every neuronie structural defect should be regarded as evidence more or less conclusive of remote, untoward influence and exercise on the part primarily of ancestry. *Unphysiological marriage* is the most noticeable step towards vesania, not the union of obviously diseased persons but those unphysiologically related either physically or psychically. The result of such union is a certain tension which impresses itself on the progeny, not necessarily as insanity, but becomes the foundation of degenerative tendencies which evolve that disease in later degenerations, expressing itself in the earlier descendants as eccentricity and becoming more intensified until the explosion of insanity occurs. He includes in the category of unphysiological marriage the union between persons of different nationalities, too great disparity of physique or age, and too great difference of æsthetic or religious convictions. An especially prolific source of mental degeneration is the *fascination* which the degenerates themselves so frequently have for one another and which results in perpetuating and intensifying the morbid strain.

Another step toward initiating or confirming the vesanic tendency is taken when two healthy, well-mated people vitiate themselves by *overstrain and worry*, and the *nutritional perversions*, resulting from those during the child-conceiving and child-bearing period. Doubtless many insane people became so because they did not inherit a normal

structure, because their near or remote ancestors were exhausted, poisoned or perverted when their progeny were conceived and born. Stress of any kind during embryonic life, can exert a most baneful influence. The child should be the pivotal consideration in those living a physiological life; thus only can evolutionary progeny be expected.

Coming to the individual, *inadequate homing* is an important secondary cause of insanity. This defect is as frequently found among the higher and wealthier classes as elsewhere. The essential of a good home is adequate mothering. The mother who places selfish or social interests ahead of her special function, does more to fix degenerative tendencies in her child than all other influences combined. Neurologically there is a demand for a parenthood which shall live *with* its children much more than either for them or without them.

Faulty educational methods favor degeneracy. Education which does not take the individual and develop him symmetrically is physiologically defective. Other steps toward abnormal mentality are the universal leaning upon proxies of various kinds. A strong, independent, self-directing individuality is rare. Disease and accidents act chiefly by augmenting disease consciousness, which really many times is the basis of abnormal worry which in time lowers the health tone. Arrest of development at the period of second birth at puberty is a serious matter. "Altogether," he concludes, "it appears plainly that the steps toward insanity are to be looked for chiefly in ancestry and faulty nurture, and when found each step will prove to be definite and also perfectly intelligible. If so, then the science of vesania prophylaxis may lead to a prophylactic art not more accurate than useful."—Dr. Smith Baker in *New York Medical Journal*.

ETIOLOGY OF GENERAL PARALYSIS OF THE INSANE.—

Dr. B. Greidinberg, Medical Superintendent of the State Asylum for Insane, Symferopol, Crimea (*Neurologisches Centralblatt*, No. 10 1897), after stating that every country must have an etiology of paresis peculiar to itself, makes

the following deductions from an examination of his own series of cases as applied to his country:

1. General paralysis of the insane is increasing particularly in women.

2. The relation of the liability between men and women is not less than 10:4.

3. The limits as to the age of onset must be extended, but particularly the age of greatest liability must be set at 30 years.

4. Though the disease is essentially a "city" disease yet it is becoming more and more prevalent in villages.

5. The main causes of the disease are, lues, alcoholism and heredity.

6. While in a great number of cases a history of lues is found it does not follow that this was the sole exciting cause, because it was often found associated with alcoholism, while many cases were met with in which there had been no lues, and alcoholism was the principal etiological factor, particularly was this the case in women.

7. The etiological effect of lues, alcoholism and heredity is greater when in combination than alone.

8. The etiology of general paralysis considered in relation to the influence of its several most conspicuous causes must take careful account of the individual and race peculiarities exhibited by the patients from which any given statistics are drawn.

BED TREATMENT OF MELANCHOLIA.—Dr. Serieux reviewing this question, so much discussed of late as new, points out that Dr. Hurd of Baltimore some fourteen years ago urged its employment in certain selected cases of melancholia (*ALIENIST AND NEUROLOGIST*, 1883) Serieux claims (*Jour. de Méd de Paris*, Sept. 19, 1897) that cases of acute melancholia of diverse forms (simple, anxious, stuporous) are above all susceptible to rest treatment. Among the symptoms, which according to Serieux indicate in a more or less special fashion bed treatment, are cerebral anæmia, cyanosis, extremity œdema, neurasthenic symptoms, emaciation, chlorosis, stupor, agitation, tendencies to suicide

and auto-mutilation, insomnia and circulatory disorder (brachycardy, etc.), respiratory disorder, digestive disturbance and low temperature. Serieux states that all the good physical effects of rest cure are thus obtainable but also admits that in certain cases the psychic effect both in the direction of abulia and delusion, may be bad.

SPECIFIC TREATMENT FOR ACTIVE FORMS OF INSANITY.—Dr. Thomas S. Galbraith (*Indiana Medical Journal*) describes the following specific treatment of Insanity: The treatment consists in giving hyoscine in small doses (1-500 or 1-1000 grain) three or four times a day continuously during the acute stage of the disease. At the same time the phosphate of potash or the phosphate of iron, as each case may require, is given several times a day, with a view to maintaining the nutrition of the brain cells, which are rapidly exhausted by all forms of acute mental activity.

By this method of treatment there is a gradual amelioration of the disturbed conditions. The general physical condition of the patients is not noticeably depressed, their secretions are not disturbed as they would be by the gross use of paralyzing or narcotic drugs. It seems that by the mild action of the drug new groups of brain cells are stimulated, counteracting and equalizing the tension and giving rest to the cells that are overactive and causing the abnormal manifestations.

I have notes of a large number of cases of acute mania, the symptoms of which were markedly modified, the disease ran a much shorter course, and the terminations were far more favorable than I have ever before observed by any other plan of treatment.

The same course was pursued in the treatment of epilepsy, with the exception that atropia was used instead of hyoscine in some cases.

MALINGERING BY AN INSANE HYPOCHONDRIA.—Dr. E. J. Spratling, of the Matteawan State Hospital, Fishkill, N. Y. reports the following case (*Medical Record*, Aug. 21, 1897): In the winter of 1891-92 a beggar who pretended to be horribly deformed with rheumatism was refused

alms by a rabbi who had been warned against him as a fraud; for this refusal the beggar shot him. A conviction followed; in prison he would obey no orders, was filthy, noisy, and violent. He was given the benefit of any doubt that might exist and committed to the hospital for insane criminals. There he at once began to find fault with everything, and declared that he was beaten, poisoned, and in many ways persecuted, none of which complaints were based on fact. He soon began to break furniture, yell, and make assaults on those about him. For these acts, frequently repeated, he was placed in a separate room with screened windows, whereupon he pretended to become physically insensible and paraplegic, could not or would not take food or control the sphincters. He was then fed by means of a tube and received an infant's care. This condition lasted during the two following years, examinations being made from time to time, each apparently giving akinesia and analgesia of the lower half of the body. He resisted every examination and for a day or two afterward would pour out a stream of complaints in a whining tone, of heat, cold, bad odors, repulsive sights, annoying sounds, etc., all of which were baseless materially. At times he would show blood on his bedding, declaring that he had had a pulmonary hemorrhage, but under guarded observation it was found to come from self-inflicted injuries of the gums; and one night while under observation he was seen to climb up the window to get and eat a piece of cheese put there by another patient. The next day in spite of his resistance a Sayre's apparatus and a faradic current were used. A few days of this treatment and he began to walk, though in a halting manner, and the sphincter paralysis disappeared, but he would immediately relapse into his former state of pseudo-paralysis whenever the apparatus and battery were taken from the ward. He was kept up and made to go to the dining-room and exercise court, much against his will, till February, 1897, when he passed a small amount of blood by the rectum. Examination simply confirmed many previous ones, giving an enlarged spleen and small liver, but no reason for a sudden collapse and resumption of the old

state in all its details. But two days later anasarca of the feet and scrotum was noticed, followed rapidly by ascites. After only five days tapping gave nearly two gallons of fluid, and on every second or third day thereafter a like amount was withdrawn. He generally appeared insensible or pleaded paralysis, but at rare intervals would walk about the ward at will. In May he died. The post-mortem gave old excoriations of the leg centres and two inches backward on both hemispheres. No other pathological or developmental peculiarity of the brain or nerves could be found. Liver hobnailed and about one-third size; spleen about four times increased; heart, lungs, kidneys, and intestines normal. The patient was syphilitic. Absolutely nothing of his past could be learned, but he was supposed to have been born an Algerian Mohammedan and to have led a haphazard existence from childhood. The probabilities are that he had syphilitic paralysis at some time in the past and that locomotion was difficult and painful and his delusions and hallucinations were genuine, but that all mental and nervous troubles were many times multiplied for a malingering purpose. This belief is strengthened by the fact that he never did complain of the physical disease of which he died—cirrhosis.

NEURO-SURGERY.

SOME GENERAL PRINCIPLES THAT SHOULD GOVERN OPERATIONS FOR OTITIC BRAIN DISEASE.—Green (*Boston Medical and Surgical Journal*) includes among otitic brain diseases external pachymeningitis with extradural abscess, leptomeningitis or arachnitis, encephalitis or brain abscess, and phlebitis and thrombosis of the sinuses and the jugular vein; all caused by infections from the ear, the microbes being the same varieties as are found in the suppurating ear cavities, chiefly streptococci, staphylococci and pneumococci. In cases of otitic brain disease early operation is advisable, but an early exact diagnosis is often impossible. The chances are seventy-nine in a hundred that a fistula

through the bone from the ear will lead directly to the brain abscess disease. The infected ear requires operation in any case, and this operation can be combined with an exploration for the bony fistula and the recognition and treatment of the brain disease.—*Jour. Am. Med. Association.*

SURGERY IN EXOPHTHALMIC GOITRE.—Mikulicz, of Krakau, is favorably impressed (*Boston Medical and Surgical Journal*) by the operative treatment of this affection. His conclusions are based on the analysis of 11 cases. Nine had exophthalmos; all tachycardia, with pronounced nervous and mental symptoms. Most of the patients also showed typical trophic disturbances. There were seven cases of diffuse hyperplasia, three with circumscribed nodules; and in one case (a cyst with five) the trachea was compressed, causing dyspnœa. Two were treated by ligature of the thyroid arteries, three by enucleation, five by resection (three bilateral, two unilateral). There were no deaths. Six were cured (after one to nine and one-half years.) Four were much improved, one slightly improved (by ligation, unilateral.) Improvement of symptoms continued for a long time after operation. For diffuse goitre ligation of the four thyroid arteries is recommended; for circumscribed nodules and cysts, "Socin's" enucleation; and resection for those cases not benefitted by ligation (it is much more difficult and dangerous than in simple goitre.) The rate of improvement after operation is varied—the symptoms in some cases having ceased entirely in a few weeks, in others months and even years are required. The physical and nervous symptoms usually disappear first; for example, restlessness, insomnia, vertigo, cardiac palpitation, etc. The disturbances of circulation comes next; the exophthalmos and trophic derangement last. Mikulicz thinks that the most of the symptoms are due to auto-intoxication by thyroid products, and that the first effect of the operation is to reduce the supply of toxic substances. He considers operative treatment indicated where medicinal treatment has failed and where dyspnœa is present.

CLINICAL NEUROLOGY.

PARTIAL RUPTURE OF THE SPINAL CORD WITHOUT FRACTURE OF THE SPINE.—Watts (*British Medical Journal*) reports a case in which post-mortem examination revealed a partial rupture of the cord and dura mater between the sixth and seventh cervical vertebræ without either fracture or dislocation of the spine, contrary to the often expressed belief that there can be no gross lesion of the cord without fracture or dislocation of the vertebræ.

PSEUDOSPASTIC PARESIS WITH TREMOR AFTER TRAUMA.—Dr. Nonne (*Neurologisches Centralblatt*) describes seven cases observed by himself and refers to two described by Fuerstner, from which he draws enough common symptoms to serve as material for the elaboration of a new and pretty definite motor neurosis designated as above. The injury need not have any emotional associations, and may be received on any part of the body, preferably on some part of the trunk. Pain incident to the trauma may be severe or trivial, but in most cases it subsides entirely in a few weeks or months. Sometimes the patient goes on with his work for a few weeks. The symptoms may appear immediately after the accident or develop gradually a month later. When fully developed they consist in a tension of all the muscles of a limb accompanied by a coarse and often violent tremor in the limbs affected—and the distribution is variable—when voluntary movements are attempted. The disturbance of motility is sometimes so great that the patient has little use of his legs and arms and is greater when he is under observation or attempts to hurry. In cases that develop slowly there is at first a slight subjective sense of weakness of the legs with weariness in them on comparatively slight exertion.

In the slight cases the muscles are relaxed when the patient is at rest, but in those most severe some muscular tension and tremor occurs, whenever he is under observation.

There may be, unilateral sensory disturbance, peripheral restriction of the visual fields, paroxysmal polyuria and

tachycardia, but in most cases there are no sensory symptoms.

The reflexes are often unduly lively but there is rarely ankle or patella clonus. The sphincters are not affected and the pupils are normal. There is no mental defect. The general health is good, and intemperance, syphilis and hereditary tendency to nerve defect are absent.

Treatment is without avail, but in one case in which there were pronounced hysterical manifestations, recovered after two years. After the first year or two there was no substantial improvement in the remainder, which had been under observation as follows: one three, one four, one five, one six and one eight, years. Finally one had suicided after six years. Several of these cases were under observation some years after they had recovered damages. All of them had been accused of shamming.—*Medical Progress*.

INFLUENCE OF TOBACCO ON THE NERVOUS SYSTEM.—Buccelli (*Riv. di Patolog. Nerv.*, 1876, p. 327) concludes from his investigations of 200 patients with nerve and brain troubles, and others, that tobacco affects the *normal* nervous system to a comparatively trifling extent, but as soon as the condition of perfect integrity is impaired, its effect is extremely and progressively pernicious. The subcortical and bulbar nerve centers suffer particularly then from the toxic effect of tobacco.—*The Medical Times*.

THE NERVOUS MANIFESTATIONS OF SYPHILIS.—Dr. J. N. Allison Hodges (*Medical and Surgical Reporter*) enumerates the following nervous manifestations which are of diagnostic value in syphilis:

1. Headaches, which disappear if paralysis occurs.
2. Insomnia, nearly always associated with headache, and disappearing with the appearance of convulsion or paralysis. It differs from the insomnia of neurasthenia and melancholia in that it occurs in the early night, the victim arising in the early morning ready for his daily labor.
3. Vertigo, occurring usually with the headache. It may be transient, but becomes worse as the disease progresses.

4. Tremor, present in one-half of the cases. It occurs most often in the order named: In the hands, tongue, and over the whole body, accompanied by headache.

5. Hemiplegia.

6. Erratic distribution of paralysis, as aphasia, with or without hemiplegia, ptosis, insanity, or epilepsy, with paralysis of one arm or leg.

7. The use of electricity to determine central or peripheral lesions.

8. The presence of great weakness and mental dullness. This is one of the most valuable of the nervous manifestations, being out of proportion to the seeming condition of the patient.

9. History of the case. In women, the history of many abortions would point to syphilis.

CARDIAC NEUROSIS OF SEXUAL ORIGIN—Under this name, Kisch, of Prague, (*Presse medicale*) describes a set of symptoms that he has observed in certain nervous young women whose husbands made it a practice to withdraw just before the instant of ejaculation, leaving them overexcited and unsatisfied. The physiological tachycardia of coitus, he says, becomes particularly intense in such women and assumes the form of a very distressing palpitation which at first persists for sometime after each incomplete copulation, and after a while occurs during the day, repeatedly and without appreciable cause. For a time this palpitation is the only manifestation of the neurosis, but soon the clinical picture is completed by a feeling of anguish, headache, vertigo, syncope, and general weakness. The women are depressed and irritable; they weep on the slightest occasion and take a gloomy view of life. The appetite is impaired, digestion becomes difficult, and they are constipated. The pulse is small, soft, and accelerated, often intermittent and arrhythmical. The arteries, however, are supple, and auscultation of the heart discloses nothing abnormal. All these symptoms will disappear as by enchantment when the practice on which they depend is given up.—*N. Y. Medical Journal*.

ETIOLOGY OF GRAVES' DISEASE.—Dr. R. G. Curtin, (*International Clinics*) concludes as follows:

1. Graves disease is hereditary.
2. The marriage of those having such an inheritance should be discouraged.
3. A person who is known to have the inheritance should reside at an elevation of more than five hundred feet.
4. They should avoid great excitement or any highly exciting occupation.
5. They should not reside in a limestone region.
6. They should not reside in a malarial district.
7. It would be wiser not to select a home in a locality where the disease is common, no matter where the locality may be.
8. They should be careful to avoid all those things that are likely to produce anæmia.
9. They should avoid excessive study, any prolonged mental or sexual strain, or anything which can bring on a neurasthenic condition.

TACTILE AMNESIA.—Dr. C. W. Burr reported some-time ago a case (*Journal of Nervous and Mental Disease*, May, 1897) a case of a woman suffering from mind blindness who was unable to recognize objects by touch although the tactile sense was normal. At this time he had seen one other case in which this tactile disorder was also associated with other symptoms. He now reports (*University Medical Magazine*, October, 1897) the case of a man who at the age of ten was struck by an ax-handle and fell into a river. He was thought to have been drowned but was resuscitated and found to have sustained a depressed fracture of the right parietal bone over the motor area. He remained in alternate coma and delirium for three weeks. Temporary anaesthesia and hemiplegia resulted. These disappeared but the patient has lost the ability to recognize objects by touch of the left hand albeit simple tactile sense and so-called muscle sense are normal. Dr. Burr is inclined to regard the phenomena as hysterical.

THE GENITALIA AND GENERAL NUTRITION.—Anti-toxins, according to a paper read before the Moscow International Congress by Metchnikoff, are largely if not chiefly secreted in the genital organs which thus play that part in support (*Revue Medicale*, September 12, 1897) of general nutrition that they have long been suspected of playing. The disturbances in general nutrition resultant on oöphorectomy and orchectomy are thus explained.

MENTAL STATE OF THE NURSE AND HEALTH OF THE NURSLING.—Budin (*L. Obstetrique*, No. 4, 1896,) reports seven cases in which the mental state of the nurse exerted an influence on the nursling. In three cases children suckled by a woman suffering from pain, lost decidedly in weight. In two cases children suckled soon after a fit of passion in the nurse were attacked by diarrhœa and lost in weight. Two children suckled by menstruating woman lost in weight and developed erythema on the thigh.

TIC DOLOREUX.—Ewart claims that larvated gout plays a great part in the aetiology of this disorder (*British Medical Journal*). It may be recognized by the following indications: 1. It occurs often in the healthy with ruddy complexion, which is common in sthenic gout. 2. Presence of Heberden's nodules, or of tophi in the ears. 3. History of gravel or stone. 4. Nervous, gastric, intestinal, and hepatic disturbances of long duration. 5. Strength of pulse and endurance of patient after prolonged pain and insomnia. 6. Adverse influence of alcohol and certain diet. 7. Presence of uric acid in the urine. The nature of the aetiological action of gout is not explained, though it is thought to act by producing an irritability of the nervous system. His treatment consists of sedative, restorative, alterative, and tonic measures. As sedatives he recommends morphine and choral; as restorative agents, rest and a non-nitrogenous diet; as alteratives, salts of iodine, mercury, guaiacum, and for tonics the vegetable tonics, massage, and salt baths. The results which he obtained by mercury and the salts of iodine in cases which were not specific are most satisfactory. He gives the histories of

several patients about to submit to an operation, who recovered under this line of treatment.—*Medical Record*.

HYSTERIC PTOSIS.—E. Hitzig, of Halle, points out that disorders of the oculomotor mechanism are rare in hysteria, though diminution of the visual field, and other phenomena due to fatigue of the retina, are very common (*British Medical Journal*). His patient, a Polish laborer, aged 36, had previously suffered from inflammation in the eyes. He had indulged rather freely in spirits. In August, 1895, he wounded himself in the leg. The wound healed rapidly, but unfortunately he got the idea that, as there had been no suppuration, inflammation would occur elsewhere. After a week, in reality, he got inflammation in the eyes, followed by diplopia and ptosis. This condition lasted a long time without distressing him, but when he found himself unable to see two of his children, who had returned home in September, 1896, he attempted suicide by drowning, and for two days appeared insane. On admission (September, 1896) there was complete ptosis on both sides; both eyes were turned inwards and downwards. Later, in November, the pupils did not react to light, and the patient professed to see nothing. There was no evidence of any spasm of the orbicularis muscles. There was partial unilateral loss of taste and smell. Tactile sensation was absent over the whole of the body, and there was analgesia in the right arm, left leg, and left half of the trunk, neck and head. Temporary improvement in the eye symptoms had followed chloroform narcosis in October, but their complete disappearance followed electricity and suggestion in November. A temporary partial hysterical deafness was likewise recovered from, and in January, 1897, the patient's condition was practically normal in every respect. Some of the eye symptoms were evidently due to spasm, namely, the squinting and the myosis. Charcot in 1888 still believed that all so-called hysterical unilateral palsies of the facial, lingual, and oculomotor muscles were in reality hemispasms. Charcot and his followers had afterwards to modify their views. In the present case

Hitzig attributes the ptosis to hysterical paralysis of the levator muscles of the eyelids.

HEREDITARY HYDROCEPHALUS.—At the July meeting of the Paris Hospital Society, Marie exhibited two hydrocephalic adults. One became hydrocephalic during infancy. The other was born hydrocephalic of seemingly non-luetic parents. His intellectual powers were feeble. His brothers and sisters (*N. Y. Med. Times*) were not affected with the same trouble, but the elder of his two children had a large head like the father's. Marie insisted upon the extreme rarity of hereditary hydrocephalus, which must result from some arrest of development. Rendu called attention to the peculiar aspect of the patient's cranium. Jacquet had seen hydrocephalus developed in a heredo-syphilitic. Chaslin was reserved as to the diagnosis of hydrocephalus; the volume of the cranium does not prove the increase of the cephalo-rachidian fluid. Marie insists on the extreme rarity of hereditary hydrocephalus but in 1895 (*Annales Medico Psychologiques*, August and September, 1895) a well marked case was reported. The mother of the patient had a badly formed head, similar to that of her child; one of the brothers was clearly hydrocephalic, and a sister the same to a less degree. No syphilis on the father's side, but at least two generations of alcoholics and absinthe drinkers. The mother was not luetic but hysterical, an uncle was a suicide, an aunt a lunatic, and a cousin hydrocephalic. The same memoir published twenty-two detailed observations of different degrees of hydrocephalus, of which nineteen were revealed by autopsy. Their simple examination demonstrates the rarity of heredo-syphilis in the infirm of this kind, and the exaggerated place which has been given on *a priori* grounds to lues in the aetiology of hydrocephalic and all varieties of idiocy.

FISSURE OF ROLANDO—Dr. Morison gives the following method of outlining the fissure of Rolando (*Amer. Jour. of Med. Sciences*, Jan., 1897.)

"The measurements may be made with a piece of sterilized silk marked off by knots to form the triangle, or

by defining the sides of the triangle by means of the surgeon's finger, whose length is already known. A point is taken half-way between the glabella and the external occipital protuberance, and the breadth of the little finger behind it (about half an inch) indicates the apex of the triangle. An isosceles triangle is then mapped out on the scalp; its sides are three and three quarters inches long. One lies in the middle line forward from the point mentioned above. The base measures four and one-eighth inches, and is anterior. The posterior side of the triangle is over the fissure of Rolando. Trigonometrically the apical angle of this triangle is $67^{\circ} 27 \text{ min. } 52 \text{ sec.}$, and this is practically identical with the angle formed by the fissure and the middle line of the skull worked out by other methods, and from an examination of a large number of skulls of various sizes, is constant and correct."

THYMUS GLAND IN EXOPHTHALMIC GOITRE.—Dr. H. MacKenzie states (*Amer. Journal of Medical Sciences*, February, 1888) that thymus gland to be of value in exophthalmic goitre must be given in doses of at least one or two drachms a day, of the fresh gland or its equivalent in the form of extract or powder. The conclusion at which he has arrived is that the thymus gland possesses no specific action in Graves' disease. It in most cases has no effect either on the heart, on the goitre, or on the exophthalmos. At the same time it appears to be a remedy of some value, improving the general condition, and, in this way, may assist toward the recovery of the patient.

IODOTHYRINE IN MYXOEDEMA AND GOITRE.—At a recent meeting of the Society of the Hospitals, of Paris, Dr. P. Marie presented the case of a woman fifty-four years of age and suffering for several years from myxœdema, who was treated by the daily administration of three or four powders containing thirty centigrams each of iodothyrene (equivalent to one milligram of iodine in organic combination,) or thirty centigrams of fresh thyroid gland. Although the patient presented rather severe cardiac dyspnoea and some albuminuria, there was rapid improvement

and complete recovery was obtained within six weeks. In a case of goitre with dyspnoeic phenomena and tachycardia marked improvement was also obtained by the use of iodothyrene.

Dr. A. C. Bernays, of St. Louis, has lately recorded (*New York Times*) what he describes as "one instance at least where a great therapeutic success was brought about by internal medication, unaided by other treatment." The patient, a lady nearly forty years of age, has had a goitre ever since her maturity. It was treated in Germany by H. Lassen with parenchymatous injections of alcohol. The enlargement seemed to get a little smaller after about thirty injections. The goitre never disappeared entirely, but at times was larger. She noticed a decided, very disfiguring and alarming increase of its size soon after returning to St. Louis, after spending last summer on the Pacific coast. Dr. Bernays decided to try iodothyrene, the active principle of the thyroid gland of the sheep. He began by giving $7\frac{1}{2}$ grains per day and increased to 15 grains per day, which was continued for nearly two months. The patient is much gratified with the result, and says her neck is smaller than ever. This she accurately ascertained by a series of measurements of the circumference of the neck.

AETIOLOGIES OF EPILEPSY.—Dr. L. Pierce Clark, of the Craig Colony for Epileptics, remarks that organic disease (phthisis, gout, neoplasms, etc.) should be taken into account (*Medical Record*, Aug. 21, 1897) in the heredity. It is extremely difficult to obtain valuable and accurate information bearing upon prenatal causes of the disease or any abnormalities existing in the labor period; for this reason alone, such information has relatively but little value. Convulsions at birth and at detention should always be inquired into, as many persons are of the opinion that "spasms" at birth or at detention are perfectly physiological and that they have no special significance in the child's growth or the after-development of the nervous system.

In about eighty per cent. of all cases of epilepsy admitted to the Craig Colony in which the convulsions

began in early infancy they were found to be closely associated with dentition. Any abnormality of development in this epoch probably has more etiological significance than the mere process of dentition itself. As to the infectious diseases of childhood, scarlet fever, measles, and typhoid fever represent, in the order named, the manner in which they have been the causation of epilepsy. Occasionally pertussis has been given as a cause, but in such cases it seems purely incidental. Measles is rarely found to cause epilepsy, while scarlet fever has been found in the examination of cases at the Craig Colony to be a more frequent and certain factor than have all the other infectious diseases combined. This statement is quite in accord with former statistics upon this subject.

It is very difficult for one to elicit the proper information which has much or any bearing upon the real etiology of the disease. Whenever syphilis is present it is usually very easy to detect it, and seizures following syphilis of the brain are very easy of diagnosis by a careful observer. They should never be classed with true epilepsy, as they belong properly in that class known as epileptiform. Occasionally cases are seen following syphilis, in which the ravages of syphilis have been eradicated and yet convulsions continue; such resemble true idiopathic epilepsy, and have then probably become such to all intents and purposes.

Masturbation and sexual excesses have both been very much overestimated in the past, and are properly receiving at present but little attention as regards the causation of the disease, although when present such habits undoubtedly prolong and aggravate the malady.

The association which periodic attacks of headache and epistaxis have with disorders of the nervous system, as seen in epileptics, is very difficult of exact explanation, but that they do have some relationship to the disease is clearly proven in the case of six patients who were admitted to the Craig Colony, and in whom there was a record of periodic attacks of headache and epistaxis covering a period of four or five years prior to the occurrence of any seizure.

Headache of this character must be differentiated from that following a slight petit-mal attack, which is frequently observed. Probably the conditions underlying both are analogous. Epistaxis frequently disappears as soon as the seizures become at all frequent. The exact explanation of the presence of both of these symptoms when they precede the development of true epilepsy it would be of great interest to ascertain by future study.

The disorders of sleep, night terrors, and nightmare, as found in the family and patient's history, are of considerable interest and give some clew as to the sensibility of the cerebral cortex; or, in other words, they give an idea of the manner in which the higher cerebral centres influence the motor areas, which points to the instability of the motor area of the brain in epilepsy. It is not an infrequent observation to see those epileptics who have had some disorder of sleep, either in their family history or in their own personal history, show themselves particularly liable to automatism following petit-mal attacks. According to Dr. Clark any paralysis from which the patient may have suffered in early infancy, if slight in character and transitory in duration, will manifest itself but little in later life. Infantile cerebral palsies are particularly difficult to detect. About eighty per cent. of all such cases become epileptics in later life. Only by close examination of the reflexes, dynamographic examination, and comparison of the extremities as to size, muscular rigidity, and tonus, can one detect the presence of a slight lesion of infantile paralysis.

The kind of education and the manner of obtaining the same are very necessary to a proper conception of the degree of mental force which the patient possessed in early life. The occupation and regularity of work which the patient has performed in the past also give one some idea of the capacity of the individual and the effects the epilepsy may have had upon the organism in causing it to depart from the normal social status of conduct.

HYSTERIA AND EPILEPSY.—Dr. Clark (*Medical Record*, Aug. 21, 1897) remarks that there is a frequent association

of hysteria in its many forms with epilepsy, especially in women and occasionally in men—which latter association, by the way, is much more frequent than is stated by text-books upon epilepsy. Many text-books state that the differential diagnosis between hysteria and epilepsy is very easy to make to one who is at all familiar with both diseases. The anomalous forms in which both diseases may be associated in the same case renders it practically impossible for the clinician to state that one disease is more pronounced than the other, which gives us the name of hystero-epilepsy.

CHOKED DISC AND PROGNOSIS.—Eperon states that prognosis is favorable (*British Medical Journal*) in choked disc as follows: Choked disc with ill defined cerebral symptoms, such as occur in Gerlier's disease (paralytic vertigo); choked disc symptomatic of syphilitic tumors; choked disc with cerebral symptoms, probably caused by cerebral tuberculosis (meningitis); choked disc may disappear spontaneously when caused by intracranial hemorrhagic effusion of traumatic origin; in some cases of very slowly-developing cerebral tumors, while the cerebral symptoms still persist.

Details of several interesting cases in support of these assertions are given. Dufour relates a case of a boy, aged 7 years, who had cerebral symptoms with double choked disc, but who rapidly recovered after a dose of santonin and the evacuation of round worms.

NEURO-PHYSIOLOGY.

THE SO-CALLED CONVULSION CENTRE AND CENTRE FOR LOCOMOTION IN THE REGION OF THE PONS.—Experiments conducted by Suschtschinski and Wyrubow in von Bechterew's laboratory (*Neurologisches Centralblatt*, No. 4, 1897,) to determine the existence of a convulsion centre in the region of the pons, disclosed that a needle thrust into the pons of a rabbit causes a true epileptic attack,

such as is produced by cortical irritation. An electric needle placed within the pons produced convulsions in dogs. A transverse section, at the quadrigemina, of the brain of rabbits caused opisthotonos and clonic contractions of a few moments' duration, but a needle thrust into the region of the pons after the section causes increased opisthotonos, but the attack is not truly epileptic. After removal of the cerebral cortex, epileptic attacks could not be produced in rabbits by irritation of the pons with the needle, though the basal ganglia were left. These experiments prove that convulsions caused by irritation of the pons are due, not to irritation of the convulsion centre, but to transmission of the irritation to the cerebral hemisphere, especially to the motor cortex. In other experiments by Meyer, epileptic attacks were produced in dogs and cats by the introduction of absinthin and cinchonin into the circulation, and during the attacks transverse section of the brain was made at the quadrigemina, when the clonic convulsions immediately ceased, and only extension of the extremities and opisthotonos were observed. No true epileptic convulsions could be produced in animals in which the section had been made before the administration of these drugs, or in which the motor cortex had previously been removed. These experiments also show that the convulsions are due to irritation of the cerebral cortex, and that irritation of the basal parts of the brain can, at most, produce only tonic contractions. The experiments of Todoski and Borischpolsky have demonstrated that in epileptic convulsions there is apparently an increased flow of blood to the brain, with contraction of the arteries of the body, and von Bechterew believes a needle thrust into the pons causes this condition, and so produces the epileptic attack. A needle thrust does not produce convulsions in a dog, probably because of the larger size of the pons, the vasomotor centre is not sufficiently irritated, and as a more extensive lesion injures the motor tracts, convulsive movements are prevented. Von Bechterew believes that a bilateral centre for locomotion exists in the bulbopontine region, because transverse section of the brain above this region in higher animals does

not prevent regular, combined movements, such as are seen in running, although these movements are rendered impossible when the separation is made in the region of the oblongata. It is possible that irritation of this centre may cause tonic contractions, although those of the clonic type are not produced. Von Bechterew does not claim that clonic convulsions are caused only by irritation of the cerebral cortex; though he has demonstrated that the movements, so characteristic of epilepsy, are not produced by irritation of the pons or other subcortical parts.

HEART AND THYROID INNERVATION.—Dr. Ede Lyon recently reported (*N. Y. Medical Times*, October) to the French Academy of Sciences that he has discovered the physiological destination of the third branch of the depressor nerve which forms an anastomosis with the superior cervical ganglion, also with another branch of the same nerve coming from the superior laryngeal. 1. Excitation of this third branch causes a diminution of arterial pressure, very often accompanied with an acceleration of cardiac pulsation especially if the two pneumogastrics have been previously divided. At the same time a slight but persistent contraction of the two pupils is produced. 2. The branch which proceeds from the superior laryngeal—the largest in the rabbit—serves to put the heart in direct communication with the thyroid gland, and causes the heart to intervene in the function of this gland. The cardiac filaments of the inferior laryngeal nerve have probably the same destination physiologically. 3. The iodothyrene of Baumann, when introduced into the circulation of the blood, exercises a pronounced action upon the nerves of the heart and the vessels, and particularly upon the function of the depressors.

In certain phases of this action the excitation of the depressor nerve sometimes provokes so strong a force of blood pressure that the animal succumbs because of the inability of the heart to recover from the pressure. These new researches demonstrate the existence in the depressor nerve, besides the well-known centripital nerve fibres—others capable of reflex action upon the accelerator nerves,

and the oculo-motor apparatus, and directly upon the thyroid gland.

This diversity of functions of the depressor nerve, and also the reciprocal influence that the heart and the thyroid gland can exercise upon each other by the intermediation of this nerve, permits an explanation of the principal symptoms of Basedow's disease, of goitre, exophthalmia, the cardiac symptoms and the persistent diarrhœa, from paralysis of the splanchnic nerves, by the different actions exercised by the depressor upon the great sympathetic.

NEURO-PATHOLOGY.

TRAUMA, TABES AND MULTIPLE SCLEROSIS.—Mendel has recently discussed (*British Medical Journal*) the relation of tabes and multiple sclerosis to injury. In 7 out of 9 cases where the tabes had been referred to traumatism, the onset of the disease could be shown to be prior to the injury. In two cases, however, this was not so; one occurred three years after amputation through the thigh, but the patient had contracted syphilis six years before the operation; in the other the tabetic symptoms began three months after a fall in a patient addicted to alcoholic excess. The evidence in favor of traumatic tabes can not be considered conclusive, but it is certain that injury may considerably aggravate the disease when present. In four cases Mendel has seen multiple sclerosis follow an injury, and he considers that there is conclusive evidence that this disease may be caused by injury. This difference in etiology might be expected, for in tabes one particular tract and no other is affected in a typical case, and it is difficult to see how violence which affects the whole nervous system could produce so limited a disease; while if tabes be regarded as due to a poison, it is very improbable that a sudden transitory injury could give rise to such a poison. Multiple sclerosis, on the other hand, is generally admitted to have its starting point in the blood vessels. It is easy to see how an injury which causes severe disturbance of the cerebeo-spinal fluid might produce

rupture of vessels, stasis, migration of leucocytes, etc. This view does not, however, preclude the presence of some predisposing cause, such as the excessive development of neuroglia described by Zeigler, which renders the tissues less resistant.

PATHOGENESIS OF SYRINGOMYELIA.—H. Schlesinger, of Vienna, in a paper read before the Moscow Congress, point that (*Lancet*): It is not proved by any anatomy that leprosy plays a role in the etiology of syringomyelia. The great resemblance of the clinical features of the two affections does not authorize the admission of the same anatomical conditions; again, it is not probable that leprosy can produce the excavations in the medulla. The term "disease of Morvan" is replaced by that of "the symptomatic complexity of Morvan," which is met with in the central affections, syringomyelia, and in the affections of the peripheral nervous system of leprous nature. Life in countries exempt from leprosy and the absence of the specific bacillus is not sufficient reason to exclude the disease. The symptoms met with in each malady, to the exclusion of others, have a very great clinical importance. Syringomyelia seems admissible when unilateral vascular phenomena are seen, with spasmodic paresis of the lower extremities, rigidity and cramps of the same, increase of patellar reflex, nystagmus, violent vertigo, sensory and motor troubles disposed in segments. On the other hand, a leprous affection is present when there is peripheral facial paralysis of the sensory nerves, ocular troubles, also typical laryngeal and pigmentary and bulbar eruptions all over the body.

The anatomical bulbar lesion of syringomyelia, with the typical transverse phenomena, is only seen at the extremity of the protuberantia. The etiology of bulbar syringomyelia is not unique; vascular modifications, which are sometimes developed in early life, seem to play an important part. As very important etiological motors, there should be considered a progressive ischemia produced by arterial lesions and also the disruption of tissue by hemorrhage. The lateral cavities, unlike the median of the

medulla, always lack the covering of ependyma, which is always seen in the median cavities. This does not extend to the intra-bulbar tract of the first four pairs of cerebral nerves, and a small portion of the trifacial. In pachymeningitis of the medulla, a cavital formation is met with, which to all appearances takes its origin from a vascula modification.

EDITORIAL.

[*All Unsigned Editorials are written by the Editor.*]

Psychalia or Mentalia.—Under this term, never before applied to this condition, we propose to designate the perverted intellectual phenomena of soul speaking or mind talking.

Under the designation of the invisibles and the voices and auditory hallucinations, psychiatrists have described mental conditions which to a certain extent, include this state of mind. Nicolai, the famous bookseller of Berlin, Martin Luther, the founder of the reformation, in his verbal contests with the devil, and many men famous in theology, science and letters, have displayed degrees of this condition. Something like it has presented in famous over-wrought painters who have seen the creations of their brush start out in mental vision, animated as in life. People who "talk to themselves" approach this condition on the normal side. Highly imaginative poets and writers of fiction commune in fancy's wanderings with their fancy's creations and sometimes audibly. But this is not what I mean by psychalia. By psychalia I mean that morbid state of the mind whereby voices and images come into the mind and speak, suggesting, urging and threatening, and are spoken to, admonished, remonstrated with and threatened in return, the normal mind or a portion of it being still conscious of its autonomy, listening, looking on, perturbed and anxious, at the apparent reality of the imaginary conversations, yet not fully dominated by the mental commotion. The coincident mental state of the patient is one of painful emotion and anxious dread, at least. When the stage is reached at which the Neurologist is consulted which is often late, by reason of the long previous futile attempts of the family physician to remedy the trouble or of his failure to timely appreciate its gravity a condition of algopsychalia or of

psychodrama is the usual ultimate accompaniment of the perturbed, morbid mental state; a melancholia with audible voices and suggestions in the mind, sometimes with visions that cause dread and despair and inclinations, and impulses to suicide.

The condition of insanity has not yet been reached, the illusions and hallucinations have not yet passed on to their final destiny, delusion. The victim listens and dreads and doubts and fears, resolves to dissipate them as morbid fancies, then listens and looks upon the mental picture with inclination to redempt and to action, and so on, alternating between faith and distrust, till the climax is reached under treatment, or their total dissipation, or their dominance of the victim's life and insanity and its results follow. The shadowy line of sanity with its barbed wire trocha is passed and the real tortures of this painful, pitiable form of despairing mental derangement is reached. Psychalial is not insanity, but it is near to it and this and algopsychalial prestage its almost certain coming unless a skillful psychiatry promptly prevents it. It's a grave, premonitory symptom, as all persistent forms of psychalgia are.

Therapeutic Skepticism.—To the ignoring of the judicious use of medicine and in lieu thereof recommending travel, massage, hydrotherapy, the rest cure, dietetics, gymnastics, mechano-therapy, oxygen inhalations, etc., is due much of the ill repute into which medicine and many practitioners fall with the people and the transference of their clientele to the osteopaths, officialists, faith cures, springs and health resorts. Too many confiding, but troublesome, neuropaths are sent adrift in this way, without adequate and suitable treatment, to the final despair of the patient and the discredit of the medical adviser, whereas, the judicious employment of medicine should never be discountenanced by the good physician. There is always some medicine of service to every patient, not always for radical cure, not always for direct physical amelioration of grave disease, but always capable of exerting salutary neural or psycho-neural influence. Change may be absolutely essential to a patient's welfare but medical preparation for that change and proper medication while getting the benefit of change of air and environment, should not be ignored by the home medical adviser. The absolute abandonment of patients to the chance benefits of travel, without the constant aid of suitable medication, casts the patient adrift, as it were, and takes away the prop on which he has been accustomed to lean, and hurts

both patient and physician. Such psycho-therapy impairs hope and faith. It is well enough for the medical adviser to say: "I have done about all I can for you at home (after he is assured the patient has the means and the disposition to travel), you need the combined influence of change and medicine" and then to start him away with hope and a prescription, even though it be but a placebo or with a letter to another physician. But to say: "Medicine will do you no good, take no more, do not let anyone prescribe for you," is a professional error from a medical, a business and a moral standpoint, and displays egotism but not knowledge. Such advice handicaps the next medical adviser and may wrong the patient greatly, for cure may be possible in other hands and whether possible or not, the patient is harmed by being needlessly robbed of the sustaining *vis medicatrix* of hope.

A thousand influences may work for the weal of your patient while he is away. Do not help then to detract from the real merits of medicine by the admonition to take no drugs; say rather, take this prescription while away; it will aid you. Take judicious medical counsel in certain contingencies, and name if you can the kind of medical adviser you think might be of most service to the patient while he travels or while he rests at some natural health restorer. But do not send him adrift with a stab at the resources of your exalted and most serviceable art.

A Critique on a Crooked Idea.—My friend, Dr. T. D. Crothers, like the gentleman cornetist in the wild west orchestra, is doing the best he can in a difficult neurological role and we feel tenderly for him and much like the proprietor of the western show, and like said proprietor, we make the same request.

But read this, friend:

Under the caption in the *Journal of Inebriety*, "Some Unknown Phenomena in Intoxication," he says; "Acute alcoholic intoxication is always marked by general palsy of the senses and reasoning."

Is it, Doctor? Where is your proof? It often is, especially in the neuropathic; but some of the world's best work in every walk in life, even in poetry and in the pulpit have been executed under acute alcoholic toxicity.

But read further, gentle critical reader, if you know something of the subject yourself:

"At the first, *delusional egotism, with delirium of suspicion* and [in]credulity, and general confusion of thought are

present. Then an increasing confusion and mental enfeeblement, also a general lowering of all emotional and functional activities. The reasoning is obscure and deranged, certain ideas may fill the mind to the exclusion of all others, together with mental instability of thought, such as changing suddenly from one topic to another, are present. *In all cases*, degrees of dementia, with profound and progressive palsy, are the marked symptoms. These are so prominent and common to all cases that no one doubts the insanity and imbecility of an intoxicated person."

Can any cold, cautious, unemotional observer of psychical phenomena in all its phases subscribe to this statement as descriptive of anything more than a feature of intoxication in certain neuropathics? On the contrary, the picture does not paint the neurally stable, the inherently well endowed, but it only represents the neuropathic inebriate in one of his habitually recurring intoxications—the insanely intoxicated. But all intoxicated persons are not insanely so.

Dr. Crothers sees the phenomena of inebriety as it shows itself in the chronic inebriates of his institution correctly enough, but his generalization and deductions as applied to all drinkers outside of Walnut Lodge, are extremely faulty and often very erroneous. *In vino veritas* is nearer the psychologic and psychiatric rule. Liquor brings out the true latent nature of the man, normal or morbid. In the exhilarant stage it shows psychical exhalation and exhilaration in the line of the normal mental action of the individual. In the neuropathic it brings into morbid activity latent psychiatric tendencies and reveals neurotic perversions—delusions of suspicion, exaltation and strength, impulsions to violence, perverted and imperative morbid conceptions, etc. In the final stage of overwhelming alcoholic toxicity all inebriated are alike, the ending coma of all is the same.

This is not a true psychical picture of *all* intoxicated persons and will not be accepted as such by the expert alienist and neurologist, whose clinical observation embraces the normal as well as the abnormal psycho-neural mechanism under alcoholic excitation and toxæmia. There are many psycho-neural organizations which, under alcohol, can not be caused to present the symptom complex above described, but only reveal preliminary excitation in the line of exalted normal, mental activity and sequent stupidity and stupor and sometimes coma.

Alcohol is a good test of inherent neural stability. The

inherently neurotically unstable succumb soon to its influence and act unnaturally. While in moderate quantities short of overwhelming coma-inducing toxicity, it exalts intellectual function in the normally endowed in the earlier stages of its influence. Dr. Crothers has caught a glimpse of this fact in the following statement:

"In a certain number of cases in this condition, there has been noticed sane moments and intelligent reasonings, with clearness of judgment and perception, equal, if not superior, to the highest brain activity in its normal state. In a semi-comatose state, the mind will suddenly display a degree of wisdom and sanity in some opinion or advice, then sink back into its *demented condition*."

The Doctor makes an unfortunate choice of terms when he calls this toxic alcoholic somnolency a *demented condition* and semi-comatose state. There is no dementia or coma in it. It is simply the somnolent stupor of alcoholic toxicity to which the brain of a normally endowed and stably neural organism is superior under the stimulus of a proper external mental excitation. Daniel Webster, drunk, but volitionally urged to the effort, threw off the incubus of alcohol and astonished listening thousands, swayed by the eloquence of an alcoholized but neurally normal brain, the alcohol impulsion upon the healthy neurons of whose well endowed intellectual centers acted as the whip and spur of action. It is only when the integrity of the neuron is impaired either by hereditarily transmitted or neuropathically acquired conditions or after the neuropathic sequences of long continued and excessive alcoholic toxæmia appear, that we see the symptomatic expressions described by the writer we are discussing. He describes psycho-neuropathia, plus alcoholic toxicity, and mingles normal with abnormal nerve cell response to alcohol in the blood.

We should be careful how we do this, because medical men who see much of the effects of alcohol in homes for the inebriate are likely to be regarded as neurological experts in questions of inebriety and may be asked to enlighten courts and juries on the subject, and few things in human nature vary more than the response of the neurally stable and the neurally unstable to alcohol in the blood in quantity short of overwhelming poison. All persons under the influence of alcohol are neither insane nor fools. Within certain limits alcohol is a test of neural stability and a proof of neuropathic instability.

The following cases reported by Dr. Crothers support

another view than that he takes in his conception, or rather misconceptions, of inebriety.

In one case a man profoundly intoxicated, while being taken to the station-house, said to the officer: "I was overcome with the heat and drank some whiskey; my brain has given away. Take me to the hospital." He was found dead in the station-cell next morning. His statement was true.

A man in a pronounced alcoholic delirium, said: "I have willed my property to a banker to avoid arrest for using trust funds. I have returned all the money but he has refused to give up the deeds. He has been urging me to drink on every occasion and wishes to destroy me." He recovered, and this was found to be true, although he never referred to it when restored.

An inebriate in a comatose condition, suddenly begged me to write his mother in St. Louis where she was. He recovered and had no memory of this. The letter to his mother was the first news she had from him for two years.

A stupid *comatose* inebriate, son of a business man, was brought to me. The father complained of financial stringency, when suddenly his son said: "Discharge my brother and put a stranger in his place and times will be better." The father did this and wrote that he found and stopped a serious defalcation. The inebriate son did not remember this remark and could not understand why he made it.

Dr. Crothers could learn some valuable lessons on inebriety if he would try and find out practically by personal experiment how alcohol gradually introduced, as in ordinary drinking, will act. If he has a stable nervous organism, it will first exhilarate, then obtund the senses, the intellectual centers, exalting, then unsteady action, mental and physical, till somnolency comes from increasing potations of the poison.

Dr. Crothers sees as through a glass darkly. He ought to see his theme through a glass inebriately. I will agree to one experiment and only one for Doctor Crothers elucidation, only one, because I do not wish to risk the repeated poisonings of alcohol on my central nervous system; viz., I will take ounce draughts of pure old rye whiskey every hour till eight or ten ounces shall have been taken, making a full half pint in ten hours, with plenty of water and a luncheon accompaniment, and demonstrate to disinterested witnesses that the normal effect is as above described and increase to several ounces more in twenty-four hours, without coma following. I think Dr. Crothers is

steady nerved enough to demonstrate this fact on himself.

Thirty years, or more, ago I made the experiment and have repeated it several times since on a larger or smaller scale with the results indicated and know from personal trial and observation of others that there is a vast difference between normal and abnormal intoxication, that the display of that difference is dependent on the normal or abnormal response of the central and peripheral nervous system to the alcohol in the blood.

Dr. Crothers, viewing inebriety solely from the alcoholic and neuropathic wrecks that come under his observation and yet seeing even, among them, these "incidents" as he terms them, "that are not common to all intoxicated men" (though there are few incidents *common to all* intoxicated men) says, "occurring as they do in the *extreme palsy* from spirits, suggest the operation of consciousness below the senses," whatever that may mean. These cases show that certain ideas are formed and expressed unconsciously. "Probably some special exciting cause brings them to the surface as flashes of reason and conceptions of truth." In other and better words the individual is aroused from the incubus of alcoholic stupor, not coma, and the capacity of overwhelmed but yet unparalyzed psychic neurons shake off the toxic incubus and display their normal, but poison laden and oppressed, power.

Dr. Crothers justly notes, but does not explain by the several hypotheses he evokes, "the shrewd remarks and wise advice of intoxicated men at times out of harmony with their present or past actions in the same condition. These sane moments are marked in some cases, who, when clearly intoxicated, seem to have flashes of wisdom unusual at other times. The remark so often made by the laity, that states of intoxication in certain men are followed by greater wisdom and judgment than ever manifested during their sober periods, is a recognition of this condition." He says, "the theory of double consciousness applies and explains much of this phenomena. The ordinary consciousness is falsified by spirits and cannot act only along automatic lines. The sub-consciousness or subliminal sense breaks through this," etc.

The state of an alcoholized nervous system is a condition, not a theory. Evoking theories is not a specially elucidating process in science when facts are in reach.

The fact is that these displays of normal mind in the intoxicated depend upon the persistent integrity of the psychic neurons despite the presence of alcohol in the blood.

The overwhelmed brain centers rest and recuperate to a certain extent even under the incubus of alcohol and with re-accumulated psychic force they display their normal power for a brief period till again prostrated by toxic exhaustion.

There is a physiologically toxic symptomatology of alcohol and a pathologically toxic symptomatology; i. e., there is the normal response of a normal nervous system to the impress of the poison and an abnormal response of an inherently abnormal neural mechanism which responds in a different manner from the response of the normal type. It is because of the difference in organism that the expressions of alcohol differ in different persons, that extreme foolishness, delusion, insanity, suspicious melancholia, violence, etc., appear into one, and normal, though toxic, exhilaration, passing on limpuess and stupor if the doses be exceedingly large, appear in another.

We must keep this distinction and difference in mind for doctors who study inebriety much are recognized as expert, and if they decide only from a study of morbid inebriety as contradistinguished from normal inebriety, by which I mean the inebriety of the neurally healthy person, wrong light may be shed from the expert luminary, a shaded light falling on but one side of the picture, and what "if the light within be darkness on this subject?"

Duchenne and Neurology.—The monument recently erected at the Salpêtrière to the memory of Duchenne, of Boulogne, commemorates a name not born to die. His name is impressed forever on Neuro-Physiology and Electro-Therapy, with those of Claude Bernard, Dubois-Raymond, Legros, Onimus, and other immortals of French science. The relations of cell innervation to muscular nutrition were originally worked out by Duchenne in his description of the trophic cells of the anterior cornua of the spinal cord. His eulogists spoke eulogistically of his original and invaluable investigations into the nature of "the atrophic spinal paralysis of infancy and adult life", progressive muscular atrophy, and of locomotor ataxy, which have also immortalized him.

The First Medical Degree in New England.—

Dr. Francis R. Packard writes in the *Journal of the American Medical Association* that, "the first medical degree granted in these parts was an honorary one, bestowed on Daniel Turner, of Connecticut, by Yale College in 1720. As this was intended as a token of gratitude for Dr. Turner's liberal gifts to the college and not as a recognition of any particular fitness on his part to practice medicine, a wit of the time interpreted M. D. to signify *multum donavit.*"

Psychiatry and Neurology at Moscow.—Lack of space and time forbid us opportunity to do justice to the good work presented in these paramount departments of medicine at the late Moscow Medical Congress. Therefore with but the briefest reference to some of the very able papers presented, it must suffice us at present to say that the contributions of these sections at the Twelfth International Medical Congress have made a brilliant record of Russian and cosmopolitan medicine. Some of the world's intellectual giants were there and the *sarants* of the great Russian Empire took foremost rank among them. Russia, Germany, France, Italy, England and America made their ineffaceable impress on the history of the nineteenth century, and America not the least.

The uttermost parts of the earth were there represented. The following record will show, in brief, the work presented in the department of psychological, psychiatric, neurologic and neuriatric medicine and allied and subsidiary departments. In addition to the record below, Pavy of London maintained before the Section on General Medicine the neuropathic view of diabetes, and numerous papers belonging also to the department of neurology were presented to the surgical section by Bergmann of Berlin on Brain Surgery in Tumor Cerebri and Jacksonian Epilepsy; by Oppenheim on Diagnosis in Brain Surgery; Macewen on Brain Surgery; Sachs on the Surgical Treatment of Epilepsy; Lucas-Championniere on the same subject; by Voisin on a similar subject; by Doyen also, and by Bruns of Hannover. Following is the organization and work of the program for neurology and psychiatry, including the meeting of the surgical section held in common with the section on nervous diseases:—

COMITE D'ORGANISATION:

Les gérants: MM. A. Kojevnikov, S. Korsakov, W. Roth (Moscou).

Membres: MM. J. Anfimov (Kharkov), W. Bekhterev (St. Pétersbourg), L. Darkschewitch (Kazan), P. Kowalewsky, J. Mierzelewsky, J. Motschutkowsky (St. Pétersbourg), J. Orchansky (Kharkov), N. Popov (Tomsk), Runeberg (Helsingfors), Suelan (Helsingfors), J. Sikorsky (Kiev), V. Tschisch (Iouriev), A. Stcherback (Varsovie).

Secrétaires: MM. L. Minor et W. Serbsky (Moscou).

Prof. Pitres (Bordeaux) et Dr. Régis (Bordeaux). La séméiologie des obsessions et idées fixes.

James Shaw, M. D. (Liverpool). The Pathogenesis and Differentiation of Verbal Obsessions and Pseudohallucinations.

Dr. Boucher (Rouen). Forme particulière d'obsession chez deux héréditaires. (D'erythrophobie).

Dr. A. Marie et Dr. Ch. Vallon (Seine). Contribution à l'étude de quelques obsessions.

Dr. Otto Dornblüth (Rostock). Zur Behandlung von Angst- und Zwangszuständen.

Prof. E. Sciamanna (Rome). Tic et paranoïa.

Dr. J. W. Konstantinowsky (Moscou). Phénomènes psychiques avec le caractère d'irrésistibilité.

Prof. Otto Binswanger (Jena). Die Pathogenese und Abgrenzung der progressiven Paralyse der Irren von verwandten Formen psychischer Erkrankungen.

Dr. J. Althaus (London). Delimitation of general Paralysis.

Prof. Homén (Helsingfors). Nouvelle contribution sur une singulière maladie de famille sous forme de démence progressive.

Priv.-Docent W. Muratov (Moscou). Zur Pathogenese der Herderscheinungen bei der allgemeinen Paralyse der Irren.

Prof. Enrico Morselli (Genes). Les altérations mentales du tabes.

Dr. Greidenberg (Symferopol). Ueber die allgemeine progressive Paralyse bei Frauen.

Dr. F. Levillain (Nice). Neurasthénie et paralysie générale au début.

Dr. G. Montesano et Dr. M. Montessori (Rome). Recherches bactériologiques par rapport à l'étiologie de la paralysie progressive.

Prof. J. M. Bandera (Mexique). Pathogénie de la paralysie générale des aliénés; délimitation de cette maladie des formes morbides voisines.

Prof. Van Gehuchten (Louvain). L'anatomie fine de la cellule nerveuse.

Prof. Owsiannikow (St. Pétersbourg). La structure des cellules nerveuses et leurs relations réciproques dans les centres nerveux.

Prof. Apathy (Koloswar, Hongrie). Ueber Struktur, Entstehung und Verbindungen der Ganglienzellen, Nervenzellen und Nervenfasern, sowohl als auch über die Methoden jene Strukturen darzustellen.

Dr. G. Marinesco (Bukarest). Pathologie de la cellule nerveuse.

Prof. Ira van Gieson (New York). Normal and Pathological Cytology of the Ganglion Cells.

Prof. Goldscheider und Dr. E. Flatau (Berlin). Pathologische Strukturveränderungen der Nervenzellen.

Dr. E. H. Fricke (Prestwich). Pathological nerve-cells.

Prof. Gilbert Ballet et Dr. A. Dutil (Paris). Sur quelques lésions expérimentales ou pathologiques de la cellule nerveuse.

Prof. A. E. Smirnov (Tomsk). Sur les cellules particulières dans le cervelet des mammifères adultes.

Prof. Fr. Schultze (Bonn). Pathogenese der Syringomyelie.

Priv.-Docent Dr. H. Schlesinger (Wien). Ueber einige Kapiteaus der Pathogenese und der pathologischen Anatomie der Syringomyelie.

Priv.-Docent L. Minor (Moscou). Klinische und anatomische Beobachtungen über traumatische Affectionen des Rückenmarkes, centrale Haematomyelie und centrale Höhlenbildung.

Prof. Maixner (Prag). Quelques observations sur la symptomatologie de la syringomyélie.

Prof. Bernheim (Nancy). L'hypnotisme et la suggestion dans leurs rapports avec la médecine légale et les maladies mentales.

Priv.-Docent A. Tokarsky (Moscou.) De l'application de l'hypnotisme et de la suggestion au traitement des maladies mentales.

Dr. Gorodichze (Paris). La psychothérapie dans les différentes variétés du délire émoïif.

Dr. E. Bérillon (Paris). Les applications de la suggestion hypnotique à la pédagogie des dégénérés héréditaires.

Dr. Bertran (Barcelone). Action analgésique et sédative de la main appliquée en position hétéronome principalement dans les algies des sujets hystériques et neurasthéniques.

Dr. G. Galli (Binasco, Italie). Die Ausbeutung einer krankhaften Idee seitens des Arztes behufs Heilung.

Prof. H. Obersteiner (Wien). Die Pathogenese und das Wesen der Tabes.

Prof. Pierret (Lyon). La pathogénie du tabes en y comprenant ses localisations cérébrales,

Prof. W. Erb (Heidelberg). Ueber die Therapie der Tabes.

Prof. J. Grasset (Montpellier). Le traitement du tabes.

Dr. Althaus (London). Pathogenesis and Treatment of Tabes.

Prof. M. Benedikt (Wien). Die Theorie der Tabes dorsualis.

Prof. L. Darkschewitsch (Kazan). Ueber die Natur der Rückenmarksveränderung bei Tabes.

Prof. Borgherini (Padoue). Quelques observations sur l'étiologie et la pathogénie du tabes.

Prof. Eulenburg (Berlin). Ueber die Behandlung der Tabes.

Prof. Benedikt (Wien). Blutige Nervendehnung bei Tabes.

Dr. Frenkel (Heiden). Behandlung der tabischen Ataxie.

Dr. A. Raichline (Paris). Quelques considerations sur le traitement du tabes dorsalis. Indications et contraindications.

Dr. P. Jacob (Berlin). Die Behandlung der Ataxie bei Tabes dorsalis mittelst der compensatorischen Uebungstherapie (nach den Erfahrungen aus der I-sten Med Klinik des Herrn Geh.-Rath Prof. v. Leyden).

Prof. Daniel R. Brower (Chicago). Some suggestions on the Treatment of Tabes Dorsalis.

Dr. R. Hirschberg (Paris). (1.) Sur le tabes dorsal juvénil. (2.) Sur une forme réputée rare du tabes dorsal.

Prof. E. Mendel (Berlin). Ueber die Tabes beim weiblichen Geschlecht.

Prof. R. Colella (Messine). Contribution à la pathologie et à l'anatomie pathologique du tabes dorsalis.

Prof. Gilbert Ballet et Dr. A. Dutil (Paris.) Faits et considérations relatifs au tabes spécifique.

Dr. Lagoudaki (Paris). Etiologie du tabes et son traitement antisyphilitique.

Prof. Jolly (Berlin). Die psychischen Störungen bei Polyneuritis.

Prof. Cesare Lombroso (Turin). Chaque dégénération a-t-elle un type?

Prof. B. Sachs (New York). Hereditary Spinal Affections.

Prof. I. Crocq (Bruxelles). Un nouveau symptôme des maladies du cerveau.

Dr. Holst (Riga). Ueber die Anstaltsbehandlung der Neurosen.

Dr. F. Levillain (Nice). De l'utilité, des indications et du mode d'organisation des Etablissements Neurothérapiques.

Dr. Alex. Robertson (Glasgow). Some Newer Methods of Treatment in Diseases of the Central Nervous System.

Dr. G. E. Shettleworth (Richmond, England). Hereditary Neuroses in Children.

Prof. C. H. Hughes (St. Louis). (1) A Third Paper on the Virile Reflex in its Diagnostic and Medico-legal Aspects. (2) Bilateral Psychomotor Synchrony.

Prof. I. G. Orchansky (Kharkov). Role de l'hérédité dans l'étiologie des maladies nerveuses et mentales.

Hr. P. Viktorov. (Moscou). L'application de l'organothérapie au traitement des maladies nerveuses, en particulier, du tabes dorsalis, des paralysies alcooliques et de l'épilepsie jacksonienne.

COMBINED SEANCE OF THE SECTIONS OF NEUROLOGY AND SURGERY.

Prof. L. v. Bergmann (Berlin). Hirnchirurgie bei Tumor cerebri und bei der Jackson'schen Epilepsie: Erfolge der operativen Therapie.

Prof. H. Oppenheim (Berlin). Ueber die durch Fehldiagnosen bedingten Misserfolge der Hirnchirurgie.

Prof. Macowen (Glasgow). On Brain Surgery.

Prof. B. Sachs (New York). Surgical Treatment of Epilepsy.

Prof. I. Lucas-Championnière (Paris). Traitement de l'épilepsie Jacksonienne par la trépanation.

Dr. A. Voisin (Paris). Un cas d'épilepsie Jacksonienne traité avec succès par la craniectomie.

Dr. Doyen (Paris). Chirurgie du cerveau.

Dr. L. Bruns (Hannover). Ueber einige besonders schwierige und praktisch wichtige differential-diagnostische Fragen in Bezug auf die Localisation der Hirntumoren.

Dr. H. Delagenière (Le Mans). Epilepsie Jacksonienne.

Prof. P. Lavista (Mexique). Sur le résultat de l'intervention chirurgicale dans le traitement de l'épilepsie Jacksonienne.

Prof. S. Henschen (Upsala). Roentgen-Strahlen im Dienste der Hirnchirurgie.

(Other communications on the same subject were presented in the Section on Surgery, Seance, August 24th).

(Separate Seances of Neurology and Psychiatry were given in the clinics for Nervous Diseases and Psychiatry at the hospital).

Prof. R. Massalongo (Padoue). Arthropathies nerveuses.

Prof. S. Henschen (Upsala). Ueber Localisation innerhalb des aeusseren Kniehöckers (ganglion geniculatum externum).

Dr. A. Raichline (Paris). Communication sur un sujet de neuropathologie clinique.

Priv.-Docent A. Korniloff (Moscou). Ueber die Veränderungen des motorischen Functionen bei Störungen der Sensibilität.

Dr. G. Durante (Paris). Contribution a l'étude des dégénérescences propagées et en particulier a la suite des lésions en foyer du cerveau.

Dr. A. G. Abastante (Rossano Calabro). Meralgia paraesthetica.

Dr. C. Ballabene (Rome). Sur un nouveau traitement curatif der névralgies périphériques.

Dr. L. Bremer (St. Louis). Bluthefunde bei Neurasthenie.

Prof. Gilbert Ballet et Dr. Ed. Enriquez (Paris). Des effets déterminés chez le cobaye par l'injection de l'extrait de corps thyroïde et du sérum de chien éthyroïdé, isolés ou associés.

Docent Haskovec (Prag). Contribution a l'étude de la pathogénie de la maladie de Basedow.

Prof. Raffaele Vizioli (Naples). Contribution aux affections parasyphilitiques du système nerveux.

Prof. Maixner (Prag). Contribution a la connaissance anatomopathologique de la paralysie musculaire pseudo-hypertrophique.

Dr. Friedel Pick (Prag). Zur Kenntniss der Muskelatrophien.

Prof. G. D'Abundo (Catania). Les amyotrophies.

Dr. Taruella (Barcelone). Pseudo-sclérose en plaques.

Prof. A. Rubino (Naples). Sur l'épilepsie syphilitique.

Dr. Bertran (Barcelone). Valeur thérapeutique du courant galvanique dans le goitre exophtalmique.

Dr. Galli (Binasco, Italie). Ueber ertolgreiche Behandlung der Pellagramit Eisensalzen.

Prof. Xavier Francotte (Liège). Le délire généralisé (confusion mentale, Verwirrtheit).

Dr. E. Christian (St.-Maurice, Seine). Sur l'hébéphrénie.

Dr. Schule (Illenau). Zur Katatone-Grade.

Prof. Meschede (Königsberg in Pr.). Ueber Geistesstörung bei Lepra.

Prof. E. Morselli (Genes). Psychopathologie des hallucinations.

Dr. A. Marie et Dr. Ch. Vallon (Seine). Note sur le délire mélancolique.

Dr. A. Marie (Paris). L'assistance familiale des aliénés.

Dr. Pierson (Coswiz bei Dresden). Ueber den degenerativen Schwachsinn.

Dr. A. Marro (Turin). Prophylaxie des émotions qui mènent à la dégénérescence.

Dr. I. F. Sutherland (Edinburgh). La manie passagère de l'ivresse alcoolique, avec rapport particulier a l'attitude anormale et injuste des lois civiles (exemption) et criminelles (culpabilité).

Prof. R. Colella (Messine). Etude sur la psychose sénile.

— Nouvelles recherches sur les fines altérations de l'écorce cérébrale dans quelques maladies mentales.

Dr. S. De Sanctis (Rome). Contribution à la pathologie du délire de négation.

— Les altérations de l'attention (dysprosécie) chez les aliénés et les neuropathes.

Dr. Toy (Lyon). Délire de persécution.

Dr. A. Mendelsohn (St.-Petersbourg). Zur Wärterfrage in Russland

Dr. Dolsa (Barcelone). Gènese psychopatique.

Dr. Al. Athanasin (Marcutza). Des obsessions mentales.

Dr. Marti Y. Julia (Barcelone). Obsessions et idées fixes.

— L'impulsivité morbide.

Dr. Arie de Jong (La Haye). Sur les obsessions.

Prof. E. v. Bergmann (Berlin). Gehirnochirurgie bei Tumor cerebri und bei der Jackson'schen Epilepsie,

Prof. H. Oppenheim (Berlin). Ueber die durch Fehldiagnosen bedingten Misserfolge der Hirnchirurgie.

Prof. Macewen (Glasgow). On Brain-Surgery.

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Dr. H. Delagenière (Le Mans). Epilepsie Jacksonienne.

Prof. R. Lavista (Mexique). Sur le résultat de l'intervention chirurgicale dans le traitement de l'épilepsie Jacksonienne.

Prof. A. d'Antona (Naples). Sur les résultats éloignés dans les opérés pour épilepsie partielle (Jacksonienne) et générale.

Prof. Henschen (Upsala). Roentgen-Strahlen im Dienst der Hirnchirurgie.

Prof. E. Tassi (Rome). Vingt dernières craniotomies pour néoplasmes et pour grave traumatisme; quelques observations sur les fonctions des circonvolutions temporales et post-Rolandiques.

Dr. Krynski (Cracovie). Recherches expérimentales sur la chirurgie du cerveau.

Prof. Lonnescu (Bukarest). L'hemicraniectomie temporaire.

Dr. Fayst et Prof. Bieloussow (Kharkov). Un cas de sarcome du cerveau.

Prof. Tauber (Varsovie). Traitement chirurgical dans les hernies cérébrales et dans la spina bifida.

Prof. Tauber (Varsovie). Chirurgie cérébrale dans les cas de tumeurs et d'épilepsie Jacksonienne.

NOTES.

☞ No commission allowed agents or dealers on renewal subscriptions. ☞

Lord Roberts' "Forty-one Years in India."—

In the October 5th number of the *Scotsman*, our old friend and collaborator gives, under the above caption, a bit of history, which serves "to point a moral and adorn a tale," as to the danger of non-medical officers attempting to discuss medical matters of the field for history, without medical aid. For other reasons, too, the article will interest the reader, besides the lesson of Lord Roberts' book and the fact that the present article is written by the veteran psychologist author of "Through the Ivory Gate," "Golden Bulletin," "The Blot Upon the Brain," etc., so well known to the readers of the ALIENIST AND NEUROLOGIST the world over.

MAVISBUSH HOUSE, POLTON, Mid-Lothian, Oct. 4, 1897.

SIR—On the 1st of last month I addressed a letter to Field Marshal Lord Roberts, congratulating him on the success of his book, "Forty-one Years in India," and pointing out some errors which, through insufficient observation at the time, or through lapse of memory afterwards, he had given to the public in the first volume of his interesting work, which then appeared to have gone through fifteen editions. These statements were not only in direct contradiction to what I have written in my "History of the Siege of Delhi," Edinburgh, 1861, which Lord Roberts quotes several times, but were calculated to bring into discredit the military surgeons who served with the Delhi Field Force. Had his Lordship taken the trouble to acknowledge receipt of my letter and engaged to correct his mistakes in a future edition, I should have done no more about the matter. His book has had a circulation quite unprecedented for a work treating of Indian history, whereas my "History of the Siege of Delhi" is now out of print. The statements in question will, if not challenged, gain belief everywhere. I, therefore, in defence of my own credit, and the memory of friends now dead, ask you to give currency to the enclosed notes, which formed the principal part of my communication to the distinguished General.

Since then I have had an opportunity of comparing notes with some of the survivors of the Indian Mutiny and I find that there is some dissent from statements and opinions in Lord Roberts' book, of which he is likely to hear more.

Sir Aukland Colvin, in the "Nineteenth Century" has already come forward to defend his father's memory about the doings in Agra in 1857. It is dangerous to write events from memories of forty years back. My own recollections about the wound which Lieutenant Roberts received are not quite the same as those of the Field-Marshal, though quite creditable to him; but if I gave further details it might be urged that I had broken the silence incumbent upon a medical man, and I cannot afford to pay a fine of 10,000 lbs.—I am. &c.

WILLIAM W. IRELAND.

Some remarks addressed to Lord Roberts on his book, "Forty-one Years in India.": Writing about the siege of Delhi in volume I., page 195. you say that "the sick and wounded had a bad time of it. A few of the worst cases were put into doobies, but the great majority had to lie on the ground, with only such shelter from the burning heat and drenching rain as an ordinary soldier's tent could provide. Those who could bear the journey and were not likely to be fit for duty for some time were sent away to Meerut and Umballa, but even with the relief thus afforded, the hospitals throughout the siege were terribly over-crowded. Anæsthetics and antiseptics were then unknown, consequently few of the severely wounded recovered, and scarcely a single amputation case survived."

This passage is not in accordance with what I myself stated in my "History of the Siege of Delhi," p. 129:—Two or three houses in the cantonment that had escaped destruction were used by some regiments as hospitals, but the sick in general were found to do better in tents. Though quinine was scarce we had always medicine and a sufficient number of surgeons and apothecaries, and plenty of servants, even natives to fan those who were weak. The health of the men bore up well. The surgical operations were wonderfully successful. Cholera, dysentery, and fever were never absent, but not remarkably frequent. The wounded were dispatched from time to time, in litters and covered wagons, to Umballa, where a great field hospital was established under the care of Dr. Ballour, and the worst cases were sent from thence to the hills."

I was at the siege from the beginning, and was in most of the tent hospitals, and I cannot recall seeing any of the sick and wounded lying on the ground. They had all charpoys. As for anæsthetics being unknown, ether was first used in 1846 and chloroform in 1847, and was at once adopted in all the hospitals all over Europe. I never saw any operation performed in India without chloroform either in tent or hospital, where from the nature of the case it could be used. I myself may have done some minor operations to save life in the field without chloroform, but only under circumstances where it could not be administered. Chloroform was universally used by all the surgeons at Delhi. As for antiseptics, the theory was not yet in vogue, but we used strict cleanliness in our dressings; practically our washes served to destroy germs, and turpentine was occasionally used to keep the breeding of worms from wounds which had been exposed to flies.

The statements that few of the severely wounded recovered and scarcely a single amputation case survived, are incorrect. To the best of my recollection only one case of amputation in the two troops of Horse Artillery with which I had to do, died, and some surgeons whom I knew were very successful in their amputations and resections. Most of those severely wounded recovered. I may say that not only I did all the field work of two troops of Horse Artillery, but I did most of the hospital work, as Dr. John Campbell Brown was, from bad health, owing to recurrent fever, unable to do much work.

In the action of the 14th July, which you describe at page 193 of your book, I was standing quite near you when you were wounded. You were on horseback beside Captain Bunny, Adjutant of the 3d Brigade Horse Artillery. When you said that you were hit, Bunny said, "There is Ireland, he will be able to tell you what is." I put my finger through your clothes by the whole made by the bullet, felt the place, and was able to assure you that the injury was not serious. From what you said, I concluded that you had received a shock from the concussion of the blow, and told you to go out of action. I then went on, when I met Lieutenant Thompson, who was shot on the leg, but was still able to keep on horseback. He asked me to try to save the wounded artilleryman who had been left behind. I went forward and rescued some of the wounded, but saw if I went any farther I should be killed. I was much vexed that two artillerymen were left to the mercy of the enemy.

It is said, at page 157, that after the storming of the enemy's position at Badli-Ki-Serai, Wilson's column fought its way through gardens and enclosures until it reached the western extremity of the ridge. There was no opposition to Wilson's column till it appeared on the ridge to the right of Hindu Rao's house, when they were fired at from the bastion on the Lahore Gate, but none of the enemy appeared in sight between Hindu Rao's house and the city walls. The rebel army had lost what cohesion it had. They were mere crowds of fugitives, and had an attack been made upon the gates that night I believe we should have carried the town. This would have altered the whole course of the Indian Mutiny.

In the plan to illustrate the engagement at Najjafgarh, at page 210, cavalry and artillery are marked as "in reserve." The artillery were not all in reserve. Captain Blount's troop of Horse Artillery engaged thirteen of the enemy's guns at the place beyond the garden much about the same position where three oblong squares are marked, I suppose, to indicate infantry. This was a hard artillery engagement, which Blount conducted with great gallantry. It was here that I received a wound which compelled me to leave the service. It is thus recorded in my history of the siege:—"Three officers were dangerously wounded, two of whom died." "Modesty," as Sancho Panza observed, "may bring a man into misery," and also into neglect. In "Twelve Years of a Soldier's Life in India," Major Hodson writes about the action of Najjafgarh:—"Two of the killed were officers— young Lumsden of Coke's Corps, a most promising fellow, and Dr. Ireland." Apparently Hodson did not think that the latter promised much. I have read this statement even in the fourth edition. Lord Roberts observes that "two officers were killed and two officers mortally wounded" (page 211.) It therefore seems doubtful whether I am alive or dead. What makes me suspect that these distinguished men may have been mistaken is that one of them does me the honor of quoting a book which I wrote, about three years after the event.

In conclusion, though these remarks are wholly critical, the writer has not failed to recognize the general accuracy of the descriptions, and the value of the additional information about the siege of Delhi.

WILLIAM W. IRELAND, M. D.,
Formerly Ass't.-Surg., 3d Brigade Bengal Horse Artillery, Delhi Field Force.

SPURIOUS COCA WINES:—The *British Medical Journal* in its issue for January 23d and again in that for February 6th, speaks of the dangers that attend the popular use of so-called coca wine—that is, some kind of wine in which a salt of cocaine is dissolved. For the most part, the wine is of poor quality, but sweetened and highly fortified with rectified spirit. The amount of cocaine contained in many of these products is variable, too, and in prescribing them one really does not know what doses of that drug he is ordering. Moreover, the contention seems reasonable that the tonic and stimulant virtues of a real wine of coca—such, for example, as the well-known Vin Mariani—do not depend altogether upon the cocaine contained in it.—*New York Medical Journal*, March 20, 1897.

Every physician who uses electricity should send for a copy of *The Electro-Therapeutist*, a monthly journal devoted to electro-therapeutics for the general practitioner. Write the editor, Wm. F. Howe, M. D., Indianapolis, Ind., mentioning this journal, and he will send you sample copies gratis.

COD-LIVER OIL, EGGS AND BRANDY, is the way Messrs. Parke, Davis & Co's serve up Cod-Liver Oil for the profession. They say most of the cod-liver oil emulsions on the market contain less than 40 per cent. of oil the remaining 60 per cent. and upward being made up of gum arabic, Irish moss, and other emulsifying and flavoring agents, which not only add nothing to the therapeutic value of an emulsion, but actually retard its beneficial action by untoward effects on the digestive organs. Messrs Parke, Davis & Co's preparation is emulsified only with fresh eggs and flavored with a fine quality of brandy. This is certainly more palatable and nutritious than the ordinary emulsions of cod-liver oil we are familiar with. Some men would take the mixture for the egg-nogg in it. It's a good combination and a genius conceived it.

THE AMERICAN PEDIATRIC SOCIETY, making a Collective Investigation of Infantile Scurvy of North America, requests the co-operation of physicians, reports of cases, etc., whether hitherto published or not, and promise not to use information in such a way as to interfere with subsequent publication by the observer. Blanks containing questions to be filled will be furnished on application to any one of the committee. A final printed report will be sent to those furnishing cases.

[Signed.]

J. P. CROZER GRIFFITH, M. D., *Chairman*, and others,
123 S. 18th St., Philadelphia.

REVIEWS, BOOK NOTICES, ETC.

SEXUAL DISORDERS OF THE MALE AND FEMALE, by Dr. Robert W. Taylor. Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons of New York (Columbia College), with seventy-three illustrations and eight plates in color and monotone from the well-known press of Lea Brothers & Co., of Philadelphia, is a new and meritorious candidate for professional favor, well worth the reading. The chapter on psychical impotency is a specially meritorious presentation of the subject, an abstract of which herewith follows:—

The term psychical impotence is applied to certain conditions of sexual weakness or inability in which mental impressions interfere more or less with sexual desire and with erection and ejaculation.

It is not uncommon for young men who have lived chaste lives to find that at the first coitus they become so much excited that the penis does not become erect, and that it may even shrivel up. In some of these cases there may be partial erection and even a dribbling ejaculation. The result of this dismal failure varies in different individuals. Some men look at the matter calmly and philosophically, reason with themselves that they are sexually impetuous, and they wait and try again. Others (and they are in the majority) become very much depressed in mind and go post-haste to the surgeon. In all these cases it is usually found that a little good advice and wholesome common-sense put the man's mind at ease, so that he can soon perform the function satisfactorily. But in many cases a sense of timidity or fear is induced which, for a long or short time, renders the man sexually weak or impotent. Such cases, if properly treated, can be cured.

Another class of cases of supposed impotence is found among young men who constantly see and fondle their *fiancées*, and who naturally become sexually excited. As a result, such a person notices that a few drops of clear mucus escape from the meatus, and that he may have queer but mild sensations in the penis and testes. In many of these cases the mind is not at all disturbed, but in some, such is the sexual erethism and the impaired mental state that the man is unfitted for business and knows no comfort or pleasure. He feels certain that he is losing semen, and as a result of his worry his erections which usually occurred in the morning and in times of loving dalliance, are no longer present; but the so-called spermatorrhœa, which is only an escape of normal mucous secretion (*urethrorrhœa ex libidine*), keeps up. In this state of mind he dreads the thought of marriage, and

feels certain that he cannot perform the sexual act. In many cases when the courtship is prolonged, and the courting *scauces* are frequent and protracted, the lot of these young men is a very unhappy one. They are constantly and regularly exposed to a sexual erethism for which there is no legitimate relief at hand. After a time erections may not occur when in the company of his betrothed, and they may or may not occur at other times. As a general rule, though erections are not experienced, the escape of mucus occurs at each loving interview, and there may be pollutions at night. Many young men thus tried remain steadfast and loyal, and by the help of the surgeon (and sometimes by the patience and tact of the wife) soon after marriage lose their fear and enter into normal sexual life. Others, however, are less scrupulous, and essay coitus with public women. In many cases that I have known these men have found relief, and have by practice convinced themselves that they were potent, and they became correspondingly happy. Many of these backsliding men I have known to become faithful and uxorious husbands and happy fathers of healthy children. Other men may have a less fortuitous experience. They resolve to test their sexual capacity with some other female, and when the critical moment arrives their morbid fear, increased, perhaps, by feelings of shame or remorse at their unfaithfulness, so preys on their mind that sexual desire is absent and erection does not occur. The result is that the man is still more unhappy and his fear troubles him incessantly. In many of these cases men have sexual desire and erections and perhaps emissions when away from their prospective brides. To some this evidence of sexual activity is very reassuring, but to others the irregularity and abnormality of the condition are a source of even greater dejection. Under the stimulus of kindly encouragement and by the aid of judicious advice these men sooner or later may enter into a happy matrimonial state.

Many young men who have had more or less frequent and normal coitus before marriage, during courtship become fearful that they may not be potent in the marriage-bed. They very often go with their doubts to the surgeon, who should always advise them to entertain no fear in their mind, and should positively assure them that, notwithstanding they may have a few initial failures in their new relations, they will be competent. In some of these cases tonics and hygienic influences very often play a very useful part.

We sometimes see cases in which nervous over-sensitiveness or religious scruples so act upon a man's mind that when he attempts coitus with a female he loses all desire and retires in disgust. Then, again, some young men are so fastidious, and perhaps so scrupulous, that they cannot associate much less have sexual intercourse, with public women. In general these cases in time right themselves, but in some instances an abiding fear of sexual weakness or impotence is left which may prevent a man from contracting matrimony. In none of these cases is there anything seriously wrong, and a happy outcome may be induced if the patient be properly advised and judiciously comforted. As a rule, marriage to a congenial helpmate soon leads to normal sexual contact.

A goodly number of cases of sexual impotence are observed in young and even middle-aged men who are submitted to severe mental strain. In these cases there is usually an evidence of general ill health, even of neurasthenia. Such men may be overtaxed in their professional duties (lawyers, civil engineers, mathematicians, etc.), or they, in their eager efforts to make money quickly, are continually in a state of excitement and doubt which disturbs their whole economy. As a result, they may lose all sexual desire, and if they force themselves to coitus they experience failure, or they may simply become sexually weak, and coitus is with these unsatisfactory and feeble in character. In cases in which the sexual organs were previously healthy this temporary disability ceases after a time, and the patient again becomes virile. When, however, the sexual tract has been the seat of inflammation (posterior urethra, prostate, ampullations, and seminal vesicles) the return to the normal state may be slow and halting.

A large contingent of impotent young men is composed of those who have been addicted to long-continued masturbation and to sexual excesses.

The impotence which follows in the course of masturbation is sometimes very difficult to cure, and amounts to what may be termed irritable weakness. These patients have so long practiced this solitary vice that it is often difficult to (as one may say) switch them off into natural habits. Not only do they, in many instances, become averse to intimate relations with a woman, but they experience a sense of shame and are very fearful that they will fail in coitus. Such men frequently have nocturnal pollutions, which have a very damaging effect upon them mentally. In these cases there is very frequently more or less damage to the deep sexual parts, and as a result the disability is more pronounced.

In very many cases of impotence incalculable harm is done the patient by the mendacious exaggerations of quacks; but this bad effect is especially well marked in psychically impotent men who have practiced masturbation.

Sexual excesses naturally lead to reaction in which the sexual desire is much less keen than formerly. This condition very often preys on the patient's mind, and he fears that he has lost his virility.

It is natural in these cases for a condition of sexual inertia to ensue, but except in very bad cases sexual power is not wholly destroyed. Rest and general hygiene usually bring the men out of their slough of despond.

Men apparently vigorous in mind and body and of more advanced age sometimes consult the surgeon for very insufficient reasons. They have had one or several attacks of gonorrhoea, perhaps many years before, which in their cases have left no damage to the urethra and prostate, but lately they had convinced themselves that their sexual capacity was less vigorous than formerly, and that it must be due to their old trouble. In many of these cases the real condition is one of less keen sexual appetite and vigor, caused, in many cases, by mental and physical overtaxing, than was possessed in earlier years.

As a rule, most men suffer from psychical impotence at some period of their life for a longer or shorter time. Seeing that the mind exerts such a

far-reaching and controlling influence on the sexual act, it can be readily understood that in the multiplicity of disturbing causes which may operate on the brain a temporary impotence may be induced. Pleasant conditions and surroundings are absolutely necessary for normal sexual contact, and when in any manner these are disturbed the function is either interfered with or held wholly in check. Thus, a man may be disturbed by ominous sounds, by unpleasant odors, and by the necessity for haste, and by fear of discovery. Certain physical defects in the woman may abort all sexual desire. There may be a flabby vulva, or a very large vagina, laceration of the perineum, or great redness of the vulva, or the presence of a purulent discharge. Warts or red or eczematous patches in and about the labia majora and minora have been known to cause a sudden inhibitory effect. The fear of contracting a venereal disease often puts an end to the attempt of a man at coitus with a public woman. Then, again, a man may be indifferent or may feel a repugnance to a woman, or a husband may entertain a suspicion as to the fidelity of his wife. All these conditions may produce a disturbing effect on the brain and sexual centre.

In some cases the loss of a beloved wife or mistress so preys on a man's mind that for a time he has an aversion to the female sex, and he may be temporarily impotent. Cases have been reported in which men, in order to perform vigorous coitus with a woman to whom they were rather indifferent, have had to fix their minds during the act upon the voluptuousness of another and highly prized consort. Many men are very vigorous with some women and have only unsatisfactory coitus with others. Alcoholics, as a rule, stimulate the brain and sexual centre, and in cases of psychical impotence they (as we may say) "help many a lame dog over the stile." A case, however, has been reported in which a drunken man failed to copulate with a woman of the town, and when informed of the fact he was so depressed that for a time he was impotent. A curious case is on record of a man who had normal coitus with other women, but could only cohabit with his wife when he was much enraged. Many women have little sexual desire; to some sexual contact is unpleasant and even revolting; while others reluctantly consent to it, and wonder at their husband's carnal lust. Such frigidity on the part of the wife naturally reacts powerfully on the husband, who may become sexually weak or even impotent.

Some men have a predilection for certain women; one likes a blonde, another a brunette, while still another yearns for a fiery auburn consort, and none of these men can have full and satisfactory sexual intercourse unless congenially mated.

We occasionally meet with cases in which there exists what may be termed sexual apathy, due, perhaps, to some condition of the brain and sexual centre. In all of these cases (and I have seen fully a dozen) the virility of the man has never been up to the standard of normal development. As boys they may or may not have masturbated for a few times and generally at long intervals, and very often as a result of curiosity inspired by other boys. At and after puberty they may have infrequent sexual inter-

course, which gives them little or no pleasure. Then the sexual desire ceases, and they botact themselves no longer with the matter. In most of these cases the patients are hard workers mentally or physically, or in both directions, but they never become melancholic.

Finally, there is a class of cases of men who are temporarily impotent for the reason that they have got out of practice. Thus, a husband is away for a long period from or loses a beloved wife, and for a time so cherishes her memory that his sexuality is dormant. Or a man may lose a very congenial mistress, and for a time sexual desire seems extinct. Then, again, for various causes some men suddenly cease to have sexual intercourse, and for a longer or shorter time are much occupied mentally or are greatly worried. In these cases very often a feeling of doubt and timidity is developed and the man refrains from sexual intercourse. According to my observations, in the course of time most of these men, when not very old, find congenial females as wives or consorts, and then the supposed sexual incapacity soon gives way to gratifying vigor.

The treatment very properly concludes as follows: It is most important to invigorate the nervous system of these patients and for them to keep up their courage.

The author might well have added, and for the medical adviser to maintain the patient's hope and confidence in his ultimate restoration.

TRAUMATIC INJURIES OF THE BRAIN AND ITS MEMBRANES. With a special study of pistol-shot wounds of the head in their medico-legal and surgical relations. By Charles Phelps, M. D., Surgeon to Bellevue and St. Vincent's Hospitals. With forty-nine illustrations. New York, D. Appleton and Company, 1897.

This work is a concise and systematic exposition of the injuries which the brain suffers from external violence, a division of brain surgery which has the greatest practical importance and has received the least careful attention. It will not only be of interest to surgeons, but will meet the requirements of general practitioners in whose experience such injuries are infrequent, and who in exceptional instances have urgent need of the aid to be derived from a wider clinical observation than their own opportunities have permitted. It has been based essentially, if not exclusively, upon an observation of five hundred consecutive cases of recent occurrence. These cases are so large in number, and so varied in character, and in so many instances are complete in the record of essential historic and necroscopic detail, as in themselves to afford material for a comprehensive history of intracranial traumatism.

The generalizations which the author makes and the conclusions which he reaches from clinical observation, have been verified in each instance by necroscopic examination.

A MANUAL OF MEDICAL JURISPRUDENCE. By Alfred S. Taylor, M. D., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital, London. New American edition of 1897 from the twelfth English edition. Thoroughly

revised by Clark Bell, Esq., of the New York Bar. In one octavo volume of 831 pages, with 54 engravings and 8 full-page plates. Cloth, \$4.50; leather, \$5.50. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

SAJOUS' ANNUAL. A set of Sajous' Annual for 1896 just to hand on our table, has not yet received notice. The cause of our delay is the delay in transmission. This well-known Annual maintains its well deserved reputation in each succeeding issue. The readers of this journal will find something of interest in each volume, but will be especially interested in Vols. 1, 2, 3 and 4.

ABOUT CHILDREN. Six Lectures given to the Nurses in the Training School of the Cleveland General Hospital in February, 1896. By Samuel W. Kelly, M. D., Professor of Diseases of Children in the Cleveland College of Physicians and Surgeons (Med. Dept. Ohio Wesleyan Univ.); Pediatricist to the Cleveland General Hospital, Etc.; Consulting Physician to the Cleveland City Hospital; President 1896 and 1897, Ohio State Pediatric Society; Editor *Cleveland Medical Gazette*, 180 pages. Price, in buckram, postpaid, \$1.25, Cleveland; The Medical Gazette Publishing Company, 1897.

These lectures are practical and instructive and will be found of especial value to the younger practitioners and trained nurses. They contain also instruction for all who may read them.

The Nature of the Leucocytosis Produced by Nucleinic Acid; A Preliminary Experimental Study. By Delano Ames, A.B., M. D., Lecturer on Pathology and Director of the Pathologic Laboratories in the Baltimore Medical College, Etc., and A. A. Huntley, M.D., Assistant Demonstrator of Pathology in the Baltimore Medical College, Baltimore, Md.

Hemiparaplegia; with Report of a Case Completely Recovered After One Year's Duration. Read before the Section of Neurology and Medical Jurisprudence at the Forty-fourth Annual Meeting of the American Medical Association. By L. Harrison Mettler, A.M., M. D., Chicago.

Die Geschwülste des Nervensystems. Hirngeschwülste, Rückenmarksgeschwülste, Geschwülste der peripheren Nerven, Eine klinische Studie von Dr. Ludwig Bruns, Nervenarzt in Hannover mit 31 Abbildungen in Text. S. Karger, Verlagsbuchhandlung, Charitestrasse, 3, Berlin.

The Treatment of Malaria. Clinical lecture delivered at the Philadelphia Hospital by Judson Daland, M.D. (University of Penna.), Lecturer on Physical Diagnosis and Instructor in Clinical Medicine in the University of Pennsylvania, etc., Philadelphia.

Medical Education. President's address delivered before The Colorado State Medical Society, June 17th, 1897, by Robert Levy, M. D., Professor of Laryngology and Physiology, Gross Medical College, etc., etc., Denver, Colorado.

Ueber die Kerne der mit den Augenbewegungen in Beziehung stehenden Nerven (des Oculomotorius, Abducens und Trochlearis) und über die Verbindung derselben unter einander. Von Prof. W. v. Bechterew.

Ueber die Tabes; Eine Abhandlung für practische Aerzte von Dr. P. J. Moebius in Leipzig. Gr. 8°. Broch. M. 3.50. Eleg. gebd. M. 4.50. S. Karger, S. K. in Berlin NW. 6, Verlagsbuchhandlung für Medicin.

Home Treatment of Insanity. By B. W. Stone, M. D., Late Superintendent of the Western Kentucky Asylum for the Insane; Resident Superintendent of Morningside Retreat, Etc., Nashville, Tenn.

The Hemiplegic State and its Treatment. By Archibald Church, M. D., Professor of Neurology, Chicago Polyclinic, Professor of Mental Diseases Northwestern University Medical School, etc., Chicago.

The Appendix "in the Interval."—A New Method of Studying its Pathology. By Robert Abbe, M. D., Attending Surgeon to St. Luke's Hospital, the New York Cancer Hospital, etc., New York.

The Standard of Medical Education. By J. M. Bodine, M. D., Professor of Anatomy and Dean of the Faculty in the Medical Department of the University of Louisville, Louisville, Ky.

Treatment of Neuralgia. By Henry W. Coe, M. D., Sup't "Minds-ease" (Cottage Homes for Nervous and Mental Diseases); Neurologist to Portland Hospital, Portland, Ore.

A New Dynamometer for Use in Anthropometry. By J. H. Kellogg, M. D., Member British Gynecological Society, Société d'Hygiène of France, etc., Battle Creek, Mich.

Is There Ever a Serous Iritis Without an Involvement of the Ciliary Body, or Choroid, or Both? By William Cheatham, M. D., Louisville, Ky.

Auto-Intoxication. By Samuel Wolfe, A.M., M. D., Physician to the Philadelphia Hospital; Neurologist to the Samaritan Hospital, Philadelphia.

Fatal Hemorrhage From the Nose and Pharynx From Unusual Cause; with Exhibition of Specimen. By Robert Levy, M. D., Denver Colorado.

American Patriotism. Memorial Address, by Col. W. F. Cloud, delivered at Marysville, Kansas, Decoration Day, May 29th, 1897.

Thyroid and Ovarian Thyroid in Gynaecology. By Henry B. Stehman, M. D., Gynaecologist to the Presbyterian Hospital, Chicago.

The Collegiate Degree as an Evidence of Fitness for the Study of Medicine. By L. Harrison Mettler, A.M., M. D., Chicago, Ill.

An Exact Method for Determining the Capacity of the Stomach and the Amount of Residual Contents. By J. H. Kellogg, M. D.

Exaggerated Arytenoid Movement—Anchylosis of the Crico-Arytenoid Articulation. By Robert Levy, M. D., Denver, Colo.

Die Frühlingsgrippe als eine besondere Form von krankhafter Störung. Von Prof. W. v. Bechterew in St. Petersburg.

Special Sanitariums for the Treatment of Disorders of the Stomach. By J. H. Kellogg, M. D., Battle Creek, Mich.

Non-Surgical Treatment of the Pelvic Disorders of Women. By J. H. Kellogg, M. D., Battle Creek, Mich.

The Sensory-Motor Functions of the Brain. By L. Harrison Mettler, A.M., M. D., Chicago, Ill.

The Prognosis and Treatment of Acute General Peritonitis. By Robert Abbe, M. D., of New York.

Direct Autopsy; Kirstein with Demonstration. By Robert Levy, M. D., Denver, Colo.

Acanthias Vertigo (Mémère's Disease.) By L. Harrison Mettler, A.M., M. D., Chicago, Ill.

A Plea for the Medical Expert. By L. Harrison Mettler, A.M., M. D., of Chicago.

The Care of the Insane in Private Practice. By Henry W. Coe, M. D., Portland, Ore.

Ueber Myotonie und ihre Behandlung. Von Prof. W. M. Bechterew in St. Petersburg.

Ueber die Anwendung der Bettruhe bei Geisteskranken. Von Prof. W. v. Bechterew.

Ueber das besondere, mediate Bündel der Seitenstränge. Von Prof. W. v. Bechterew.

A New Method of Operating for Hemorrhoids. By J. H. Kellogg, M. D.

A Plea for a Uniform Diastase Test. By C. C. Fite, M. D., New York.

Duty to the Insane. Barton W. Stone, M. D., Nashville Tenn.

A Perfectly Aseptic Drainage Tube. By J. H. Kellogg, M. D.

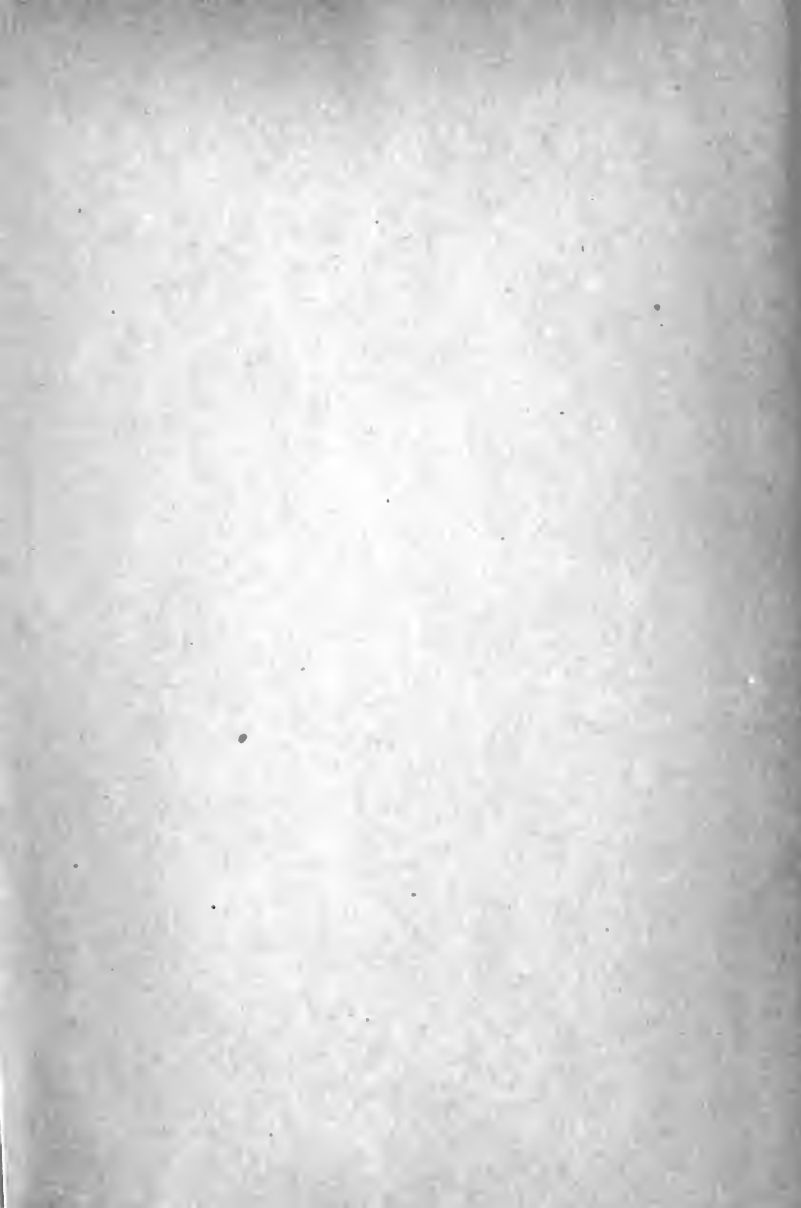
Neuraesthesia. By Henry W. Coe, M. D., Portland, Oregon.

Lumbar Localization. By L. Harrison Mettler, A.M., M. D.

Remarks on Spinal Irritation. By Hugh T. Patrick, M. D.

An Oculo-Neurological Fad. By J. H. Kellogg, M. D.

Annales de l'Unisexualité. Par Andre Raffalovich.













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