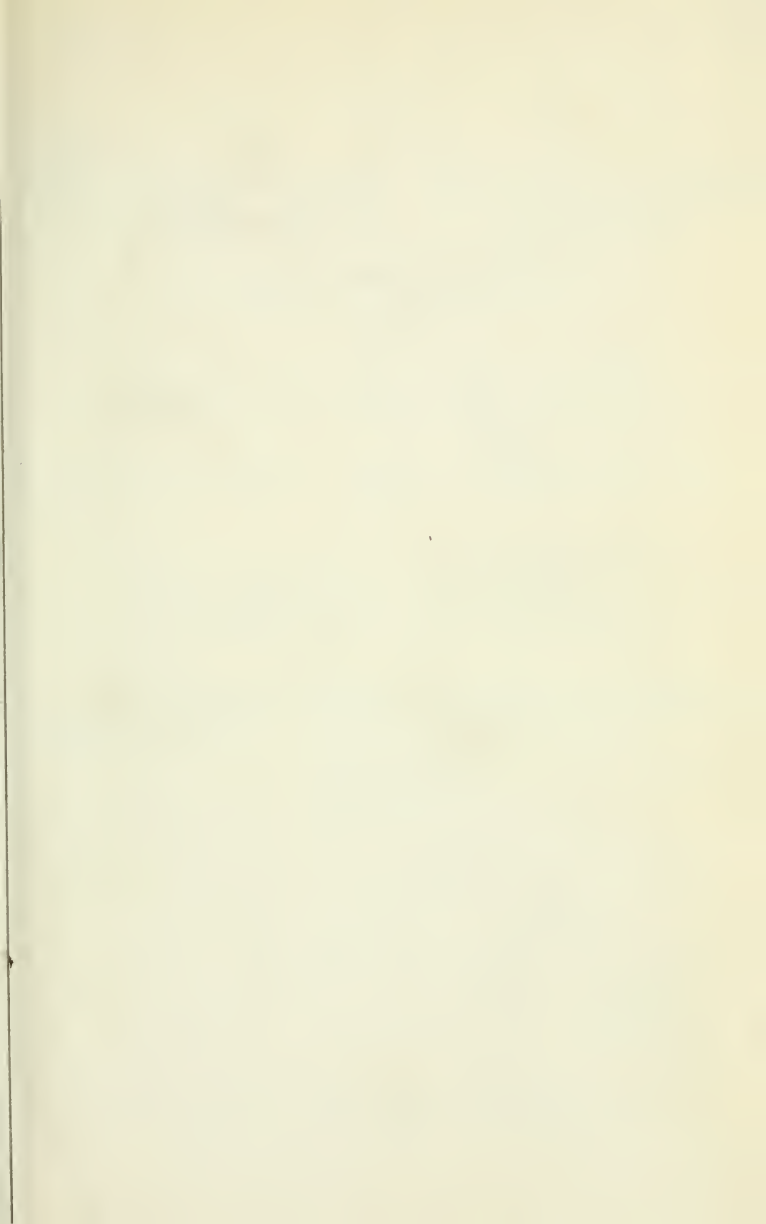




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THE

Alienist and Neurologist

A QUARTERLY JOURNAL

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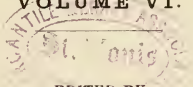
Psychiatry and Neurology.

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

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

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VOLUME VI.



—EDITED BY—

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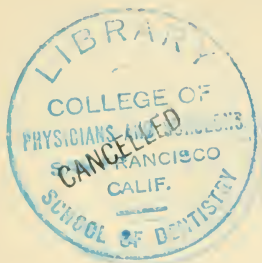
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ORIGINAL CONTRIBUTIONS.

CORTICAL EPILEPSY.*

EXPERIMENTAL RESEARCHES—SYNTHETIC REVIEW.

By GIUSEPPE SEPELLI, M. D., Imola, Italy.

AMONG the more important results obtained in late years, from the experimental explorations of the brain, is that of having established the fact that epilepsy may be produced artificially by irritation of the cerebral cortex. The first knowledge of this fact dates from the time of the well-known experiments of Hitzig and Fritsch (1870), which have signalized the commencement of an era, the most fruitful and the most memorable in the physiology of the brain. In the work published by these two observers on the electric excitability of the brain, we find it stated that in dogs electric excitation of the cortex gave place to well-characterized epileptic attacks, which, beginning in contractions of the muscles corresponding to the cortical motor centre stimulated, extended first on the same side of the body, and afterwards on the other side.

Some years afterwards Hitzig tried to establish, in a more precise manner, the relation between cortical excitation and the genesis of epilepsy by effecting on dogs lesions limited to the motor zone, and he observed that

* Translated by JOSEPH WORKMAN, M. D., Toronto, Canada, from the *Rivista Sperimentale*, 1884.

in some of those which survived the operation, true epileptic attacks were developed.

The opinion of Hughlings Jackson, based on clinical observation, that in men also certain convulsive forms have their origin in the cerebral cortex, led Ferrier to make a series of experiments, from which he concluded that the excitation of the cortical motor centres provokes epilepsy.

In Italy, the subject of cortical epilepsy has been profoundly studied by Albertoni, who has sought to determine the conditions and the genesis of the epileptic attacks; and by Luciani, whose theory of the seat and origin of epileptic convulsions has been accepted by many able physiologists, and has found several applications in the clinical field.

Among those who have specially engaged in the study of cortical epilepsy, and who have sought, whilst taking departure from different points of view, to determine the part taken by the cerebral cortex in the genesis of the epileptic attack, we must mention Bubnoff, Heidenhain, Franck, Pitres, Unverricht, Rovighi, Santini, Danillo and Rosenbach, whose labors have cast a clear light on the mode in which we should interpret the mechanism of epilepsy of cortical origin, whilst, taken in their entirety, they give us an exact and complete idea of the phenomena that characterize an epileptic attack, experimentally provoked, and of the mode in which it begins, extends and runs through, as well as the varieties which, according to circumstances, it presents.

Cortical epilepsy is a subject of great interest, not so much because of the physiological questions which it raises, as of the immediate applications which it may present to the physician at the bedside of his patient. We shall, therefore, fully discuss it in this work, in which we purpose, first, to examine the conditions requisite for the production of artificial cortical epilepsy in animals, and the mode of provoking it; we shall then analyze the access of cortical epilepsy and the causes which modify

it; lastly, from the basis of the facts, we shall see what is the functional significance of cortical epilepsy.

FIRST. The disposition to cortical epilepsy varies much in different classes of animals; it is absent in the batrachia, in reptiles and birds, but it is present in the mammifera. By exciting, with a very strong Faradic current, the cerebral hemispheres of frogs, toads, chickens or pigeons, we do not succeed in provoking any epileptic access. Only some of the mammifera are predisposed to present cortical epilepsy. Albertoni observed that the sheep, the goat, the ass and the horse are not susceptible of having partial epilepsy; whilst in cats, dogs and monkeys it is very easily provoked.

But even animals of the same species do not present an equal predisposition to cortical epilepsy. Experiments have shown that in some dogs, even when not narcotized, it is impossible to provoke an epileptic attack, whilst in others, on the contrary, very slight excitations are followed by convulsive attacks, and again, in some others, strong and prolonged excitations are required to produce epilepsy. Again, certain monkeys are more predisposed than others to artificially provoked epilepsy. It is further to be observed that the same experimental conditions being given in many animals of the same species, or of different species, epileptic convulsions with the same characters are not always obtained. In some animals they continue localized, whilst in others they have a tendency to become diffused. It is, therefore, proper to note that the predisposition to the diverse forms of epilepsy (peripheral, toxic, cortical) is variable in animals; in the guinea-pig, for example, it is very easy to provoke peripheral epilepsy, but not the cortical; in the dog, which is much predisposed to cortical epilepsy, it is very difficult to produce the peripheral.

The degree of the excitability of the cerebral centers has a great influence in the production of epilepsy. It is very variable in the dog, and it may be diminished or abolished, or notably exaggerated under the action of

various causes. The facility of provoking epileptic attacks stands in relation to the state of excitability of the brain that is subjected to the stimulus. We shall now proceed to enumerate the principal causes which tend, more or less, to modify the cortical excitability :

(a.) *The age.*—From the researches of Soltmann and Tarchanoff it is known that the brain of dogs, cats and rabbits, newly born, is altogether inexcitable. Albertoni could not, in a dog thirteen days old, provoke either movements or epileptic convulsions by Faradization of the brain, whilst in another, twenty-two days old, excitation on the right hemisphere brought on a complete epileptic attack. It is held by some observers that it is easier to provoke epilepsy in young than in adult animals.

(b.) *Anæsthetics.*—The state of narcosis, to which the animals are usually subjected by means of chloroform, ether or morphia, has great influence in diminishing the state of excitability of the cerebral cortex. If the chloroform narcosis is very profound, the cortical excitation may be rendered absolutely ineffective. Having been present at the numerous researches of Luciani and Tamburini, in the asylum of Reggio, on the brain, I often had occasion to observe this fact, and to see afterwards that in proportion as the narcosis went on decreasing the excitability of the cortex of the brain returned. Hitzig observed that with strong doses of ether, he was able to obtain cessation of the movements which had been provoked by galvanizing the excitable zone of the brain. Morphine, also, when administered in a rather full dose, produced the same effect. But when these substances are cautiously given so as not to induce in the animal to be operated on a profound degree of narcosis, their paralyzing action on the cortical excitability, if indeed it appears at all, is only transient.

(c.) *Bromide of Potassium.*—Albertoni instituted a series of researches most interesting in the study of the action of divers medicinal substances on the excitability of the cerebral cortex. Having laid bare the motor zone in the

dog and in monkeys, he fixed on the lowest degree of current necessary to provoke an epileptic attack. He then administered the medicament, and as soon as signs of its action began to appear, he examined anew, in the same way, the excitability of the brain by laying bare the other motor zone. In this way Albertoni discovered that the bromide of potassium is capable of considerably diminishing the electric excitability of the brain, and of withdrawing the possibility of production of epileptic attacks by means of excitation of the cortex. Rosenbach has recently confirmed these facts.

(d.) *Perfrigeration.*—The epileptogenous faculty of the cerebral cortex may be diminished or altogether abolished by the local application of some substances which produce a great and rapid lowering of the temperature of the brain. Franck and Pitres found that whenever the cerebral cortex was cooled down by means of etherization, prolonged for some minutes, the excitation of the cortex no longer provoked convulsive attacks. They assured themselves that the ether does not act by chemically altering the cerebral substance, as they obtained the same effect when they protected the cerebral cortex from contact with the ether, by means of a thin fold of caoutchouc. On the contrary, however, Marcacci states that local anæsthesia of the exposed cortical centres, obtained by the pulverization (spray?) of ether, does not modify the cortical excitability.

We know not how to explain this difference in the experimental results of the authors cited, unless by admitting that in the experiments of Marcacci, the perfrigeration of the cortex was not pushed to so intense a degree as in those of Franck and Pitres; or by supposing that the cerebral cortex does not in all animals equally feel the local anæsthetic action of cold. This would seem to find confirmation in the observation of Unverricht, who, in making his experiments on dogs, found that in some of them, despite an enormous lowering of the temperature, the excitability of the brain persisted to such an

extent that he was able to provoke a true epileptic state, whilst in the majority of them the cooling of the cerebral cortex rendered it altogether inexcitable.

(*e.*) *Anæmia.*—In animals which, during the operation, have lost a considerable quantity of blood, the electric excitability of the brain usually descends to a very low degree, or it is completely abolished, so that we do not succeed in provoking epileptic attacks. Sometimes, however, the cortical excitability does not undergo any diminution. The ligaturing of all the arteries which go to the brain does not, in some, in the least modify the electric excitability of the cortex, but in others it diminishes it—[Minkowsky.]

Orschansky studied how the electric excitability of the cerebral cortex behaved in dogs, in which abstraction of blood was made from the femoral artery. When the quantity of blood abstracted was about one-seventh of the whole mass, the cortical excitability was not modified. The withdrawal of about one-fifth of the mass caused augmentation of the excitability. If the loss of blood is still greater, the excitability of the cortex diminishes. When the quantity lost is about three-fifths or two-thirds of the mass, the excitability disappears entirely in a few minutes. Slow abstractions produce slight modifications of excitability, but rapid abstractions modify it considerably.

(*f.*) *Asphyxia.*—Arrest or momentary suspension of respiration rapidly produces inexcitability of the cerebral cortex. It is easy to verify this fact in an animal that has undergone tracheotomy and breathes through a tracheal canula. As long as the respiration is free, it is easy to provoke convulsive attacks by exciting the cortex, but this part does not respond to the stronger stimuli, when the animal is hindered from breathing by closing the mouth of the canula—[Hitzig.]

(*g.*) *Alcohol.*—Danillo is the only one who has studied the influence of this substance on the function of the motor zone of the brain, and over the attacks of corti-

cal epilepsy. His experiments were made on dogs in which he injected into the blood of the saphena vein a strong dose of alcohol, at forty-five degrees (from forty to sixty grammes for each animal). He found that alcohol thus administered diminished rapidly the excitability of the motor region of the brain, even to its complete abolition. The action of alcohol on the motor functions of the brain would therefore seem to be analogous to that of anæsthetic agents.

(h.) *The Essence of Absinthe.*—This substance also has been experimented with on a large scale, in dogs, by Danillo, who found that by administering it in repeated small doses, by various injections, the excitability of the cerebral cortex was so much increased that a trivial excitation of the motor zone sufficed to provoke a very strong convulsive attack. The essence of absinthe has, therefore, close analogy to strychnia, which also possesses the power of considerably exaggerating the excitability of the brain, and consequently of rendering more facile the production of epileptiform accesses, and their symptomatic manifestations more violent.

(i.) *Atropine, Cinchonidine, Picrotoxine.*—According to the researches of Albertoni, atropine augments the excitability of the cerebral cortex, and the continued use of it does not take away or diminish the possibility of producing epileptic attacks by cortical excitation. Chirone and Curci explain the epileptogenous effect of cinchonidine as an action by this substance on the cortical centres. Rovighi and Santini have arrived at the same conclusion, from their experiments with cinchonidine, made under the direction of Prof. Luciani, and they believe that the epileptogenous action of picrotoxine should be explained in the same manner.

(l.) *Encephalitis.*—Phlogosis of the cerebral cortex is a condition very favorable to the exaggeration of its excitability, provided, however, that it is not of such a degree as profoundly to disorganize the tissues in which case the excitability is wanting. Cortical excitability,

consequent on an inflammatory state, may be so much increased that, as Franck and Pitres have observed, even mechanical stimuli, such as simple contact, stroking, or the pressure of a sponge, suffices to provoke an epileptic access.

SECOND. The most efficient and certain means for stimulating the cerebral cortex, in order to provoke an epileptic access, is electrization. We may employ either the continuous electric current or the induced, of variable intensity, according to the degree of excitability shown by the animal, and also according, as we shall see further on, to the point of the cortex where the electric stimulus is applied.

Mechanical and chemical excitations applied on the cerebral cortex do not usually provoke any immediate effect; we may cut, squeeze, strongly stroke with sponges, or profoundly cauterize the cortical substance without provoking thus either a partial or general epileptic access. In some cases it has, however, been observed that mechanical excitation of the cortex may give place to epilepsy. Franck and Pitres relate the following experiment: On a large dog they laid bare, by trephining, the left motor zone, and they placed over this part a bit of tinder (lighted?). A few seconds after, with out any provocation, the animal was seized with a most intense general convulsive attack. The convulsions succeeded each other at short intervals, and a true epileptic state was produced, under which the animal died.

Whilst it is a rare or exceptional fact that mechanical stimuli applied over the cerebral cortex, immediately produce epileptic convulsions, it is on the other hand observed rather frequently, that epilepsy at some later time follows brain injuries. When the motor zone of a dog is laid bare on one hemisphere, and the animal is allowed to survive, it readily becomes subject to spontaneous epileptic attacks, after complete cicatrizing of the wound. Hitzig and Luciani specially availed themselves of this very method for the study of epilepsy of cortical origin.

The dog, the monkey and the cat are animals in which cerebral injuries readily produce an epileptogenous action; it is not the same with rabbits and guinea-pigs, in which Franck and Pitres never saw epilepsy supervene, even for several months after they had made on them partial lesions of the cortex.

THIRD. - A very important question presented to us in the study of cortical epilepsy, is that of learning whether the cerebral cortex is capable of developing a partial or general attack of epilepsy, whatever may be the point at which it is excited. Albertoni, as is known, assigned an epileptogenous property exclusively to that part of the cerebral cortex which corresponds to the postcruciate convolution, where the motor centres of the limbs of one side exist. Only these points of the cortex would therefore, have the property of provoking epilepsy when they are stimulated.

Luciani and Tamburini modified the idea of Albertoni by demonstrating that the whole of the motor zone, in which the centres for the limbs, for the face, the trunk and the neck are comprised, is an epileptogenous zone, for by electrically exciting single centres, epileptic accesses, more or less diffused, can be produced. But this epileptogenous property is not equal at all points of the motor zone. According to Luciani and Tamburini it is found in the dog more developed in the centres for the movements of the upper jaw and the face, than in the centres for the motions of the limbs.

The cerebral cortex of the motor zone is not the sole region in which epileptic accesses may be provoked. Luciani and Tamburini saw developed, several times, convulsions in dogs by means of intense and prolonged Faradization of the convolutions of the sensitive zone. Rosenbach, Franck and Pitres have observed the same. This, however, does not prove that all the parts of the cortex have the property of provoking convulsions when they are stimulated. Several experimental researches clearly show that the epileptogenous property resides

exclusively in the motor zone, and that if other parts of the cortex when stimulated provoke epilepsy, this happens because the excitement is propagated to the motor zone. The facts on which we rest for admitting with Luciani and Tamburini that the epileptogenous function of the cerebral cortex pertains exclusively to the motor zone are the following :

First.—After the destruction of the psycho-motor centres, excitation of the intact occipital convolutions cannot provoke any attack—[Franck, Pitres and Rosenbach]. The same result is obtained if, instead of destroying the motor zone, we separate it from the posterior parts of the cerebrum by removing an intermediate zone of the cortex.—[Danillo.]

Second.—If the posterior convolutions are removed, and the intact motor regions are excited, convulsions are readily produced, just as though the hemisphere had not been touched—[Franck and Pitres.]

Third.—A weak electric current, which being applied to the motor zone gives place to an epileptic attack, is quite unfelt on the cortex of the occipital lobes. In order to provoke, from this region, an epileptic convulsion, an electric current much more intense and prolonged is required than for obtaining a convulsion by excitation of the motor zone.

Physiologists have devoted much attention to the inquiry whether the epileptogenous property of the motor zone pertains exclusively to the cortical substance, or is participated in by the medullary substance. Franck and Pitres, from a great number of experiments, found that direct excitation of the white fibres of the centrum ovale, corresponding to the motor zone, is incapable of provoking convulsive access, though it may give place to simple movements analogous to those produced by excitement of the motor cortical centres. Here we are not to believe in a state of exhaustion of the animal, consequent on the operation from which the white substance is rendered inexcitable, since it is observed in the same animal, that whilst stimulation of the white substance of the centrum

ovale is incapable of provoking convulsions, excitation of the conserved grey substance, whether upon the same hemisphere or the opposite one, readily determines epileptiform convulsive attacks.

But in order that excitation of the medullary substance shall not appear to provoke epilepsy, it is necessary that the cortical substance of the motor zone be completely destroyed; if any points of this zone remain intact, the current, by diffusion from the medullary substance on which it has been applied to the cortical substance, readily produces epilepsy.

Rosenbach has observed that an intense and prolonged excitation of the medullary substance develops an epileptic attack, when the destruction of the cortex of the motor zone is not considerable; but on the contrary, if the destruction of the psycho-motor zone is complete, then the excitation of the medullary fibres, thus stripped, does not give place to any epileptic convulsion.

The results of the researches of Bubnoff, Heidenhain and Albertoni do not accord with those above cited from Franck and Pitres, as they show that excitation of the white substance, after removal of the cortex, may give place to epilepsy. This difference in the effects of excitation of the medullary substance leads us to suppose that the experimental conditions have not been identical; it is probable that in the experiments of Albertoni, Bubnoff and Heidenhain, the destruction of the cerebral cortex was not so profound as in the researches executed by the two French physiologists, so that irritation of the remaining portions of the cortex, by diffusion of the current, could not be avoided. Nor can we suppose that the effects obtained by the former from exciting the medullary substance should be attributed to the greater intensity of the electric current, since Franck and Pitres assert that they always found that even the strongest electric excitation of the sub-cortical white substance did not produce convulsive attacks, when the corresponding grey substance had been destroyed.

Partial destructive lesions of the grey substance of the motor zone provoke, in the neighboring parts of the cortex remaining intact, an irritative state, by which their excitability is so exaggerated, that intense convulsions are produced by the very slightest stimuli.

From the researches of Franck and Pitres it becomes evident that the hyper-excitability of the cortical motor centres, which accompanies light phlogoses of the convolutions, is not in relation with the concomitant hyperæmia, but rather with the nutritive disorders of the nervous elements, as they observed that active hyperæmias of the brain, experimentally provoked by section of the cervical sympathetic, or by removal of the superior cervical ganglion of one side, and also passive congestion obtained by ligation of the great veins of the neck, did not produce appreciable modifications of the cortical excitability.

FOURTH. Hitherto we have been occupied with the principal conditions that modify in animals the predisposition to provoked cortical epilepsy, as well as with the stimuli adapted to cause development of the access, and the differing epileptogenous faculty inherent in the various cortical regions. We shall now proceed to study in what manner the access of cortical epilepsy presents itself, how it is initiated and becomes generalized, and by what phenomena it is principally characterized. We may hold it, as a general law, that the access of cortical epilepsy is always initiated in the muscular group which corresponds to the excited cortical motor centres. This is a part to which Luciani and Tamburini have called special attention, on which all observers are now found in accord, and whose importance is considerable in view of the clinical applications it may have.

The form of an epileptic access of cortical origin is variable. The convulsion at one time remains limited to one group of muscles (monospasm), at another it is diffused through the muscles of a single circle of the body (hemispasm), or to the muscles of both sides (general epilepsy).

The different mode taken by the convulsive access in extending itself, depends chiefly on the intensity and duration of the stimulus. The more prolonged and energetic is the electric excitation, the more readily does the epileptic convulsion become general; on the contrary, by very slight excitations the convulsion may be limited to those muscles whose centre has been stimulated.

The epileptic access follows, in becoming diffused, an order almost always corresponding to the anatomical disposition in which the motor centres are found in the cerebral cortex. To become convinced of this fact, which is of the highest importance with regard to the functional significance of cortical epilepsy, it is sufficient to read attentively the experiments of the authors, who have occupied themselves with artificial epilepsy. An attack of hemiplegia which had been provoked in a dog by exciting, on the left, the cortical centre for the closing of the palpebræ, was first manifested in clonic contractions of the right orbicular muscle, and the elevator muscles of the angle of the mouth on this side; then the convulsion gradually extended to the right ear, and to the muscles of the ocular bulks (nystagmus, mydriasis), to the muscles of the jaw, which was closed with great force, and to the muscles of the tongue; the head was forcibly drawn to the right, and bent towards the shoulder; the convulsive movements spread afterward to the fore leg, and to the hind leg of the right, and here it stopped. During the access, saliva ran very abundantly from the mouth, and the close of the fit was signified by discharge of fæces and urine.

If the reader will take a look at the figure of a cerebral hemisphere, on which the excitable areas of the cerebral cortex are shown, it will not be difficult for him to become persuaded that the mode of diffusion of the attack, in the case we have given, corresponds with the topographic distribution of the motor centres. The convulsive access is propagated, as if the excitement, setting out from the motor centre of the orbicularis, is

carried in a direction toward the centres for the muscles of the jaw and of the limbs, and in the other direction to the motor centres of the ear and the eye. The same consideration may be held of all convulsive accesses, whatever may be the muscular groups in which they are initiated. Therefore, we may conclude with Unverricht (who is in this imperfect accord with what had first been established by Luciani), that there enter into convulsion, one after the other, only those muscles whose centres are neighboring in the cerebral cortex. "Never," he observes, "is it seen, for example, that the convulsive motions of an extremity succeed to those of the ear, without the orbicular muscles participating in the convulsion—the centre for the latter being found between the auricular centre and the centre for the limbs."

Sometimes the excitement of a cortical centre is more promptly diffused in one direction than in another, *e. g.*, excitement of the centre of the orbicularis is diffused to the muscles of the upper limbs before the muscles of the tongue and the jaw. But much more important, than the course taken by the convulsions on one side of the body, is the mode of propagation of the epileptic attack from one-half of the body to the other. Unverricht is the person who has made the most numerous and accurate researches in this relation, and he has arrived at the following conclusions:

The attack of epilepsy always invades the other half of the body in a strictly regular and typical order, whatever may have been its point of departure on the side first affected. The convulsion commences on one side in the inferior extremity or in the orbicularis, and it passes into one side of the tongue or into the muscles of the jaw. It is always propagated first into all the muscles of the corresponding half of the body, and afterwards it extends into the other side following an ascending direction, because of which the lower extremity is first struck by it, and then gradually the other groups of muscles situate in the superior regions. If, for example, the centre

for the right lower extremity is excited, the trunk and the neck are seen to be first curved in an arc turned to the left; next convulsions in the upper extremity are shown, and in the muscles of the jaw, the face and the tongue on the right. The muscles of the left side of the body enter into convulsion in the same order as those on the right, excepting that the diffusion is much more rapid, and the convulsions are more tonic.

If, however, instead of the motor centre for the inferior extremity, in the left cerebral hemisphere, we excite the region in which the bilateral movements of the ocular bulbs have their origin, it will then be seen that the convulsion in the right side is propagated in a descending direction from above downward, but on the left side it extends, as in the preceding case, from below upwards, making a sort of circuit of the body. In short, whatever may be the course, ascending or descending, followed by the convulsive access in propagating itself in the side opposite to the motor centre excited, the direction taken by the convulsion in its diffusion on the other side, that is the one corresponding to the stimulated cerebral hemisphere, is always ascending.

Franck and Pitres wished to apply the graphic method in the study of the mode of extension of convulsions of cortical origin. They laid bare in dogs the motor zone of one side, and then placed in relation with a graphic apparatus each tendon of the extensor muscles of the two fore paws and the two tendons of Achilles. In this way they were enabled to discover that by strongly exciting the centre for the right front limb, the convulsive attack succeeding, extended in the following order: 1st, In the right fore leg. 2d, The right hind leg. 3d, The left hind leg. 4th, The left fore leg. In this experiment we have a confirmation of what we said regarding the rule which the epileptic attack observes in passing from one side of the body to the other, and thus becoming general.

The duration of each epileptic access varies from some seconds to two minutes; the access which follows a single

cortical access is almost always unique, and in order to reproduce it, the excitation has to be repeated. If the cerebral cortex of an animal is several times in succession repeated, the accesses succeed each other with an always greater intensity, and in more rapid course. But sometimes the convulsions are spontaneously repeated at short intervals, without the requirement of repeating the excitation of the cortex. The animal falls into a true epileptic state, under which it most usually becomes exhausted and dies.

In the first periods of the epileptic state, Unverricht made the interesting observance that the convulsion, in repeating itself, sometimes commences on that side of the body in which it had terminated. If, for example, an epileptic access, which having set out from the right orbicularis, has made the round of the body, having gradually descended in the right side and ascended through the left, it is frequently seen that it revives in the muscles last engaged in convulsion, that is to say, in the orbicularis and the muscles of the ear of the left side, and then is diffused in inverse direction, descending on the left side, and ascending on the right, where it terminates in the orbicularis and the ears.

In addition to this form of the epileptic state pointed out by Unverricht, he has described another, which is observed in the first periods of the epileptic state, and is called by him relapsing. When the first access has terminated, a second, a third, a fourth, are seen to arise, the point of departure of which is always the one and same muscular group, and then the convulsion becomes general. This fact shows that there exists in the cerebral cortex a determined point, under a state of chronic excitement, from which the fresh accesses always set out, whilst in the oscillating form there is present a diffused disturbance of the equilibrium of the gangliar cells, which have been altered by simple functional excitement of neighboring groups.

It is interesting to note that, as well in single epileptic

accesses as in the epileptic state, all the muscular groups do not always participate with equal intensity in the convulsion, but rather, in certain cases, some muscles remain quite unaffected. Thus, under an epileptic access which includes the face and the limbs of one side, it is frequently observed that the muscles of the jaw take no part, or only a trifling part, in the convulsive cramp of the other muscles. In some of these cases, by exciting electrically the cortical point corresponding, we discover their slight excitability. [Unverricht.] This part is very important, as it shows that the cerebral cortex of the motor zone may undergo, only partially, a modification of excitability; it accords with what we have said respecting the variable excitability of the motor points of the cortex, by reason of which a strong excitation of a given centre does not provoke any epileptic access, whilst even a slight one of another centre brings on a convulsion.

By the aid of the graphic method, Franck and Pitres analyzed the muscular phenomena of the epileptic access of cortical origin. They observed that the complete access consists of two successive phases: one tonic or tetanic, and the other clonic or spasmodic. Sometimes the myographic characters of the access are incomplete and abnormal. The tonic phase may thus be wanting, and, therefore, the epileptic attack is manifested in clonic convulsions only. Instead of gradually increasing in force, as is most commonly observed, the convulsive movements may present with oscillations of much amplitude immediately after the tetanic phase. For an exact description of these and other modifications of the epileptiform muscular phenomena, we refer the reader to the work of Franck and Pitres, in which there are given some graphic figures that show them very clearly.

According to the researches of Unverricht, the temperature of the body, in isolated epileptic accesses of cortical origin, is raised 1° to 2° centigrade. In the epileptic state he observed it up to 44.5° (112° F.), and this went yet a few tenths higher, after which death took place.

The phenomena presented by animals at the close of epileptiform accesses are deserving of special interest. Sometimes they pass into a state of violent agitation, they run impetuously as if impelled by some irresistible force, dashing against objects, and they appear to be hallucinated. In a dog, operated upon by Luciani and Tamburini, the epileptic accesses were followed twice by a state of fury. In another they saw the access followed by a sort of maniacal state, in which the animal ran furiously hither and thither through the room, knocking his head now on one side and then on the other. A cat operated on by Luciani was seized at the close of the epileptic convulsion with a sort of impulsive mania, which caused her to run as if insensate, without looking what direction she took. Being one day seized with a maniacal access, she jumped into a tub of water, and on another occasion she leaped into an oven that was still hot. In some cases the animal, after the convulsion ceases, falls into a state of exhaustion, is broken down and reacts feebly to stimuli, it stands with difficulty on the feet, for in the muscles of the limbs there succeeds to the spasmodic state, a paresis which is shown more intensely on the side of the body opposite to the cerebral hemisphere operated on. It is very easy to verify the exhaustion of the excitability of the cortical centres, immediately after stimulation of them has provoked an access of epilepsy. This fact I have often observed in the animals on which Prof. Luciani and Tamburini provoked epilepsy by exciting the cortex. Franck and Pitres after provoking in a dog four epileptic accesses by exciting the right motor zone, failed to produce any muscular reaction, even by stimulating the sigmoid gyrus with an electric current that was painful to their fingers; the motor region had become completely inexcitable. Ordinarily the loss of excitability following accesses of epilepsy, is not complete; it, however, reaches a degree sufficiently observable, but if the animal is allowed to repose, it passes off in the course of an hour or an hour and a half.

FIFTH. The animal, on which success has been attained in provoking epileptic accesses by irritation of the cerebral cortex, are subjects of research very favorable for the study of the different factors which have more or less influence in modifying the course of convulsions already in progress, in the way of diminishing their intensity or of arresting them.

It has been observed that anæmia has no influence on the evolution of the convulsive attack, when once it has commenced. If the carotids of an animal in an epileptic state are cut to let blood flow, the clonic cramp of the muscles does not cease. Ligation of the two carotids and the two jugulars does not arrest the epileptic attack. The mass of arterial blood in the brain may be reduced to a minimum quantity, without impeding the manifestation of epileptic phenomena.

Accumulation of carbonic acid in the blood diminishes the intensity of cortical epilepsy. By compressing the trachea of an animal under an epileptic state, the clonic contractions of the muscles in convulsion continue for a short time, but afterwards they cease by little and little, whilst dyspnœic phenomena enter on the scene, and are followed by death. If the compression of the trachea be withdrawn, and, in case of its need, artificial respiration be employed before death happens, the animal may revive, but it very soon falls into the convulsive state. Unverricht observed that accumulation of oxygen in the blood does not moderate the epileptic state; in many cases, indeed, a continuous succession of the accesses was observed, that is, an absolute absence of intervals between the convulsions.

Inhalation of irritating vapors (ammonia, acetic acid), irritation or cutting of the cervical sympathetic, the application of strong cutaneous excitements, as punctures, cauterization, and the cold douche, according to Franck and Pitres, do not arrest an already commenced attack in its course, nor do they sensibly modify it in its evolution.

The principal means which have the property of diminishing the duration and intensity of the attacks are morphia, chloral and ether. Morphia administered by venous injection acts only in very large doses, and it is generally fatal. Ether, given by inhalation, completely arrests the convulsive state. Chloral has the same action, even in small doses; 0.20 injected into the femoral vein of a dog that was in the epileptic state arrested totally the convulsions—[Unverricht.]

Atropine, the utility of which in the case of epilepsy has been so much vaunted, possesses, on the contrary, according to the experiments made with it on animals rendered artificially epileptic, no antispasmodic virtue. Indeed, from the researches of Albertoni, it is shown that it favors the development of the epileptic attacks, because it augments the excitability of the cerebral cortex. In some dogs, Unverricht, after the administration of atropine, provoked convulsions by cortical electric excitation, though previously it had failed to produce them.

As to the application of the Faradic or galvanic currents on the brain, during the presence of the attack, it has been found that the convulsions become so much the more intense, the more energetic has been the current employed.

The course of convulsive attacks, consequent on excitation of the cortical motor zone of the brain, like the attacks caused by the action of absinthe, is arrested by the intravenous injection of alcohol—[Danillo.]

SIXTH. After having examined, hitherto, the conditions necessary for the development of epilepsy by excitation of the cerebral cortex, by what stimuli the convulsions are provoked, what course the epileptic attack holds in its inception and extension, and the means by which it may be modified, we have now reached the moment when we should take into consideration the pathogenesis of epilepsy, of cortical origin, and its localization.

The numerous experimental researches which have been

instituted, with regard to cortical epilepsy, have brought into relief several facts which concur in demonstrating that the point of departure, the central organ, the anatomical seat of the epileptic convulsions, is represented by the motor centres of the cerebral cortex. This doctrine, warmly contended for by Luciani, on the basis of experimentation, is now shared in by almost all the authors who have been occupied with the study of cortical epilepsy, among whom it may suffice to name Heidenhain, Munk, Wernicke, Rovighi, Santini, Unverricht, Rosenbach and Danillo. The principal arguments favorable to the admission of a cortical genesis of the epileptic attack, whether partial or general, are:—

(*a.*) The epileptic unilateral convulsions provoked by irritation of the cortex, share on the side of the body in which they are developed, those muscular groups whose cortical motor centres have been destroyed. In the work of Luciani we find recorded two experiments which we are pleased here to relate in a few words. A dog, the whole of whose motor zone on the left hemisphere had been destroyed, with exception of that part which contains the centres for the muscles of the tongue, the face, and the mouth, became subject to repeated epileptic accesses, limited exclusively to these muscles, and of such intensity as to cause his death. Another dog, operated on in the left motor zone, whose cortical centres for the limbs were destroyed, was seized with convulsions of the jaw, with movements of the head, and now and then of the muscles of the right half of the face. Luciani cites, besides, an experiment by Franck and Pitres, which relates to a dog that, after removal of the centre for the left fore leg, presented an access of partial epilepsy, characterised by convulsive shakings in the left hind leg and in the left side of the face, whilst the fore leg remained flaccid and immovable throughout the entire duration of the access.

(*b.*) After the destruction of the whole motor zone of one side, excitation of the medullary substance lying directly towards the base of the brain and the bulbo-spinal

centres, is not capable of provoking convulsion on the opposite side.

(c.) After extirpation of the cortical zone of both sides, excitation of the white substance does not provoke the epileptic attack. This fact, which was first demonstrated by Bubnoff and Heidenhain, meets, to a hair, the just remark made by Morselli, in the Phreniatric Congress at Reggio, to Luciani, to whom he observed, that in order to give a decisive proof of his theory, it was necessary to show that an animal totally deprived of the motor centres on both sides, no longer falls into an epileptic access, whatever may be the excitations brought to bear on it. But there is more yet. Unverricht made the very important observation that in some dogs, on which the cortical excitement produced a complete epileptic attack, extending to both sides of the body, by removing the whole motor zone of one side, *e. g.*, the left, with exception of the centre for the orbicularis, and then exciting this centre, a convulsive attack was obtained, which was limited to the right orbicularis, without participation in it by the muscles of this side, but the access was afterwards diffused into the whole of the left side of the body, where it commenced in the hind leg, and ended in the muscles of the tongue and the face.

(d.) In the initial phase of the epileptic attack of cortical origin, extirpation of the motor centres which have been previously excited can arrest the access. Heidenhain, in certain cases, succeeded by the prompt extirpation of the whole motor zone of one side, in arresting the convulsion on the opposite side of the body. Munk obtained the same result by cutting away the excited cortical centre.

(e.) The convulsive access provoked by epileptogenous substances, such as picrotoxine and cinchonidine, is modified in animals whose cortical motor centres are mutilated on only one side of the brain. From several experiments made on dogs by Rovighi and Santini, under the direction of Luciani, it was found that the isolate contractions in the muscles of the face, the trunk and the limbs, which precede

the general epileptic attack, either from picrotoxine or cinchonidine, are not manifested in an equal and symmetrical manner on the two sides, but very weakly on the side opposite to the destroyed cortical zone. Now, as the two above-named authors justly remark, if the initial convulsing effects, determined by the picrotoxine and the cinchonidine, are less manifest on the side of the body opposite to that of the destroyed zone, this signifies that in this zone are contained the motor centres, which are the first to feel the convulsing effects of these two poisons.

All these facts are of themselves so eloquent as to induce, even in the most incredulous, the persuasion that there exists an intimate, immediate relation between the cortical motor zone and the epileptic access produced by excitation of the cerebral cortex, and that the motor zone is indispensable for the generating of the convulsive access.

Several objections have been made to the doctrine which places the seat of epilepsy in the motor-zone of the cerebral cortex. In a lively discussion which was set on foot respecting this subject in the Phreniatric Congress at Reggio-Emilia, the distinguished Prof. Vizioli remarked, that the fact observed by Luciani, that dogs operated on, not in the motor zone, but in the sensitive zone, also presented epileptic convulsions, is in contradiction to the cortical theory of epilepsy. Since, he added, it is no longer a motor centre irritated that avails to produce the epileptic attack, but it can be provoked also by a part exclusively sensitive. Very well, this fact, as Luciani himself well observed, is not in the least opposed to the doctrine of epilepsy maintained by him. The excitation may set out from any point of the cortex, distant from the motor zone, and it is by its diffusion to the cortical motor centres that the epileptic access is developed. In order to combat the cortical genesis of epilepsy, we should be able to demonstrate that animals, in which the epileptic access is provoked by exciting a cortical point situate behind the motor zone, also fall equally under the access after destruction of the motor zone. Instead of this, the experiments of

Rosenbach and Danillo show that the very opposite is verified. If on a dog the whole of the motor zone of one side is destroyed, or if a strip of the cortex between the motor region and the posterior region of a cerebral hemisphere, be taken away, and the occipital lobe be then excited by an electric current, no epileptic access is provoked. On the other hand, if the cortical region situate behind the motor zone be destroyed, leaving this zone intact, excitation applied on its motor points determines the development of epilepsy. Further, extirpation of the posterior part of the cerebral cortex, effected when the convulsive attack has already commenced, does not interrupt it, but this happens if at opportune time the motor region is destroyed.

One of the strongest arguments that have been advanced by the opponents of the cortical doctrine of epilepsy as it has been conceived by Luciani was, that in order to place it beyond contradiction it must be demonstrated that, not only in the inception but also in the diffusion of the epileptic attack, the cerebral cortex has an essential part. As it is admitted that direct excitation of the motor centres of one side provokes convulsion in the opposite side of the body, it must also, by consequence, be admitted, that when this convulsion invades the other side also, the direct excitation is diffused from the motor zone primarily stimulated, to that of the opposite side. But from the experiments of Albertoni and those of Franck and Pitres, it results that the extension of the epileptiform convulsions does not stand in necessary relation with the conservation of the cortical centres; for complete, bilateral, epileptic accesses may be provoked by exciting the motor zone of one side, after having previously destroyed the motor zone of the other side. We have, however, reason to hold, that these experiments do not absolutely exclude the idea that the diffusion of the epileptic attack depends on the excitation of the cortical motor centres of one side passing to those of the other side, for the whole of the motor zone of one side had not been destroyed, but only a part of it. Besides we have the experiments of Heidenhain, showing

that after bilateral destruction of the motor-zone, epilepsy is no longer provoked, whilst by exciting the medullary substance of a hemisphere from which the motor zone has been previously removed, convulsion is provoked on the same side with the stimulus, because the excitation is, as Heidenhain admits, carried over into the intact motor zone. These experiments would therefore demonstrate that the cerebral cortex is indispensable alike for the development and the diffusion of the epileptic attack.

Unverricht, who has very profoundly studied the phenomena of the epileptic attack of cortical origin, concludes from his researches that the intactness of the cortical motor region is a necessary condition for the development of a complete epileptic attack, and he calls attention to a fact, which at first view might induce some doubts as to the participation, by the cerebral cortex, in the mechanism of the convulsion. He observed in certain cases in which the convulsion was limited to one side of the body, *e. g.*, the left, that the limbs of the right either remained tonically extended, or participated, with the same rhythm, but in a feebler degree, with the movements of the limbs on the left. That in these cases we have an accidental phenomenon, and not a true convulsive attack, laying hold of muscular groups on both sides of the body, seems to be shown by this fact, that the typical progression of the epileptic convulsion is not altered. In fact, in proportion as the convulsion is diffused contemporaneously to the limbs of the side opposite to the excited motor zone, it is seen that the limbs of the other side also become subjected to slight muscular movements; the convulsive attack extends on this side also, commencing in the inferior (hind) limb, and in the meantime secondary muscular contraction may be observed on the other half of the body, which had been previously more forcibly struck by the convulsive attack. These secondary contractions are not at all modified by the extirpation of the cortex, and they continue even after hemi-section of the spinal marrow, consequently it is to be admitted that they are produced by a diffusion of the

excitement into the inferior gangliar groups. They cannot be placed on a par with the epileptic convulsions, because, in order to be consistent, the centre of epilepsy should then be sought in the medulla spinalis also. "The essential part of the epileptic attack," says Unverricht, "consists in the primary muscular contractions, which have a typical course round the body, and to their production the cerebral cortex is indispensable."

But even admitting that in epileptic convulsions of cortical origin, the excitement is diffused from the cortex into the inferior nervous centres, not the less on this account is the importance of the cerebral cortex in the genesis of the convulsions. If, in a dog poisoned by picrotoxine, the motor zone of one side be removed, the convulsions which are produced, conserve, in the muscles corresponding on the sound side, the character of epilepsy proceeding from excitement of the cortex, that is, in being prevalently clonic, whilst in the muscles that depend on the mutilated cerebral hemisphere, they have a tonic form, as is observed to result from a bulbo-spinal excitation, and they are besides less intense. Furthermore, that the cerebral cortex is an essential element not only in the initial movements of epilepsy, but also in those succeeding in the attack, is demonstrated by the fact that extirpation of the cortical motor centres causes cessation of the convulsion in the corresponding muscular groups. Thus, opportune experimental conditions being had, it is easy to provoke an almost general attack, in which, by previously extirpating their corresponding centres, the muscles of a region of the body, *e. g.*, the face, the jaw, or a limb, will remain unaffected.

We should therefore hold, that in both the genesis and the subsequent generalization of the epileptic access, the cerebral cortex has an essential, we would not say an exclusive participation, because we have not sufficient proofs that the subcortical centres do not also take part in the access. As an argument against the doctrine that the bilaterality of the epileptic access, produced by unilateral

excitation of the cortex, depends on the passage of the excitement to the cortex of the other hemisphere, it has been stated that section of the corpus callosum does not prevent the generalization of the access. Franck and Pitres made, on a cat, a complete longitudinal section of the corpus callosum, and then by the motor convolutions of the right hemisphere they provoked an immediate, general and violent convulsive attack.

It seems to me that such experiments do not suffice to invalidate the theory of the cortical genesis of epilepsy, since they presuppose an anatomical fact that has not yet been demonstrated, that is, that the commissural fibres of the corpus callosum are uniquely and exclusively the parts of communication between the cortical centres of the two cerebral hemispheres in animals. Besides, when section of the corpus callosum is made on an animal, the experiment becomes too complex, nor can it be excluded that the general convulsive accesses, which may be provoked immediately in it, by stimulating the motor centres of one side instead of depending on this excitation, are the direct consequences of the extravasation of blood into the lateral ventricles, consequent on the cutting of the parts, since we know that ventricular hemorrhages very readily follow general convulsive phenomena.

The doctrine of Luciani on the pathogenesis of epilepsy has been combated by Franck and Pitres in their latest work. These two authors believe that Luciani has fallen into a double error in holding that epilepsy, whatever may be its origin (toxic, cortical or peripheral), results always from an abnormal excitation of the cerebral cortex, and in concluding that the cortex is the central organ of the convulsions, resting on the simple fact that the convulsions succeed to the cortical excitation. As regards the first of these objections, urged by the two French observers, against Luciani, it does not really appear that they are of much importance. From the moment that Luciani *posited* the assemblage of the cortical motor centres as a *sine qua non* condition in the development

of epilepsy, it was very natural that he should admit an identical pathogenesis for epileptic convulsions produced by diverse causes. It would, indeed, be in open contradiction of his theory to have admitted the contrary. The fact of epileptic convulsions being variable in form, according to their determining causes, does not exclude the idea that they depend chiefly on abnormal excitation of the cortex. The greater or less extension of this excitation in the cortical centers, its variable intensity in individual centers, the different mode in which it is diffused, and the different excitability of cortical points, may give us a reason for the various forms presented by the epileptic access. Pitres and Franck have reproved Luciani for not having taken into account of the experiments which show that animals deprived of their cerebral hemispheres may still be subjects for convulsive attacks. It appears that the discussion which took place at the Phreniatric Congress, at Reggio, respecting the pathogenesis of epilepsy, was not known to them. In this discussion Luciani replied with precision to this objection, which was then made by Albertoni, Silvestrini and Chirone. Luciani asks: "With what propriety can we baptize as epilepsy convulsions that follow excitations of the bulb, after removal of the cerebral hemispheres, when they have not the most important character of epilepsy, to-wit: the complete or almost complete suspension of consciousness, which can depend only on functional disturbance of the cortex, and the other character also of the epileptic access is wanting, that is of convulsions at the first localized in certain groups of muscles, and afterwards becoming general(?) Indeed, in his memoir on the pathogenesis of epilepsy he cites the accurate researches of Cwsjanikow, by which this Russian physiologist has demonstrated that there exists in the bulb a centre of reflex general cramps, from which it is not surprising that there may be obtained general convulsions, uniquely dependent on reflexes aroused by excitation of the bulb, but which have not, however, any analogy to convulsions of epileptic character.

As regards next the other assertion made by Franck and Pitres, that Luciani had based the cortical pathogenesis of epilepsy solely on verification of the fact that the convulsions succeed to the cortical excitation, we must declare it incorrect. Luciani only availed of this argument in a secondary way, and instead of founding his doctrine specially on the fact diligently observed and described by him, that in sequence to partial destruction of the motor zone epileptic convulsions may be developed, which prevent this characteristic, that is, of being limited only to groups of muscles whose cortical centres have been spared in the operative act.

The facts we have related, and particularly those of Unverricht and Heidenhain, regarding the mode of origination and extension of the epileptic access, seem to us to be very valuable, as warranting the acceptance, in the present state of our knowledge of the doctrine of Luciani on the genesis of the epileptic attack. We must merely at the present say, that it seems to us a little too exclusive, as we shall show in a future work by us, on cortical epilepsy, studied clinically, limiting ourselves in the meantime to a brief record of a case of much interest, and which is perhaps unique in the literature we have had the opportunity of perusing. It is that of a woman of thirty years, who became epileptic at the age of twelve, after, as appeared, a cerebral disease. She presented left bodily hemiatrophy, very conspicuous in the upper limb, and she had convulsive attacks, sometimes general, at other times partial, which had the characteristic of being initiated in the left arm, and becoming then diffused over all the same side. The left arm was affected with incomplete paralysis and contracture, the lower limb of the same side was paretic. She remained several months under our observation, and she died of diffuse miliary tuberculosis. In the autopsy I found complete destruction of the so-called motor zone of the right cerebral hemisphere. The two ascending convolutions, the feet of the three frontal, and those of the two parietal, and the paracentral lobule were totally destroyed, and in place of

them there existed a fibrous tissue, resistant and of spongy aspect, with small cavities full of serum and of a substance having a mucous appearance, which being examined in very thin cuttings under the microscope, presented no cellular element, but many sclerosed vessels, masses of pigment, fatty granulations and many amylaceous corpuscles. The medullary substance also, corresponding to the convolutions mentioned, was transformed, in its whole thickness, almost as far in as the ependyma of the ventricles, into a compact fibrous tissue. I further observed descending degeneration of the whole of the left pyramid.

It is unnecessary to spend many words in demonstrating that this case cannot be reconciled with the cortical theory of epilepsy. We had met with a left hemiplegia, which had led us to suppose that the right motor zone was conserved in part, at least; but on the contrary we found it, on section, totally destroyed throughout.

This case leads us to the hypothesis which is logically linked with the doctrine of the functional compensations of the brain. Luciani and Tamburini, in their researches on the motor centres, have admitted, in explanation of the disappearance of paralytic phenomena, after extirpation of the cortical centres, that the basilar ganglia may have a psychomotor function, differing only in degree from that of the cortex, but in the absence of the latter, it is developed and augmented, and thus favors the improvement of paralytic states.

Now, as epilepsy may be considered as the effect of a functional exaggeration of the motor apparatus of the brain, it is, in our belief, legitimate to suppose that basilar motor centres, when they supply the function of the destroyed cortical motor centres, may acquire, as these, the epileptogenous property, by exaggerating their proper function in such a manner that in the case of absolute want of the motor zone, they may become points of origin and of diffusion of an epileptic attack limited to the opposite side of the body. We would thus explain, in the case cited, the existence of a partial epilepsy, with the complete want of the motor zone.

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The Insane Population of the United States.

By W. E. SYLVESTER, M. D., Willard, N. Y.

NOT unfrequently an asylum officer is asked his opinion regarding the increase of insanity in this country; and, though sad may be the fact, he can only admit that the number is rapidly growing larger.

For various reasons it is impossible to ascertain the exact number of our insane population; but from information furnished by the United States census office and asylum superintendents and that gathered from other sources, we shall be able to obtain a general idea of the prevalence of insanity in our midst at the present time. We must accept all estimates of the number of insane as merely approximate, but it is probable that this portion of our population will number one hundred thousand persons.

The census shows that twenty years ago the number was only 24,042. In 1870 it had reached 37,432, and in 1880 we are called upon to provide humane treatment for 91,959 lunatics. From 1870 to 1880 the increase of insanity was over 100 per cent., while that of the total population was about 26. These figures do not represent an actual increase, but during this period a large number of insane persons, previously concealed, were brought to public notice by more thorough investigations.

The proportion of insanity is greatest in New England; while the increase has been most rapid in the Western States.

In this country, aside from several large county asylums, there are eighty State and forty private institutions for the care of the insane, with a capacity for about 40,000, but accommodating 53,192; thus leaving probably 45,000 to be cared for elsewhere.

In looking over the reports from asylums, one finds an almost universal cry for more room.

We will give briefly, as far as we have been able to learn, the present distribution of our insane population.

In New England we find Maine with about 1,542 lunatics, of whom 1,000 are crowded into the single asylum that was originally intended for only 500. However, the building of a new hospital for the insane is under advisement by the legislature.

New Hampshire has 1,056 insane, and cares for 312 of them in the State asylum, which can accommodate 325.

Vermont has 1,015. In the one asylum there are 369 patients, which number can be increased to 400 without overcrowding.

In Massachusetts we find the number of insane to be 5,700. Of these, 3,657 are in the fourteen asylums scattered over the State.

Rhode Island, with one State and one private asylum, has about 700; of which 525 are in institutions.

Of 1,723 in Connecticut, about 1,000 are cared for in hospitals for the insane. The State asylum is somewhat overcrowded.

New York shows the enormous insane population of 15,000. In this State we find thirty-five institutions for the care of these unfortunate people, accommodating 11,343 patients; while it is claimed that there are 4,000 provided for at home.

The insane cared for in institutions are divided as follows:—

State Asylums, - - - - -	3,647
City Asylums, - - - - -	5,016
County Almshouses, - - - - -	1,869
Private Asylums, - - - - -	558
State Asylum for insane criminals, - -	144
State Asylum for insane emigrants, -	109

The counties of Kings and New York contemplate building additional asylums for their chronic insane.

The returns from New Jersey give the number in that State as 2,405. The two State asylums contain about

1,400; the five county institutions care for 710, and the remainder are with friends and in the almshouses.

The lunatics in Pennsylvania number 8,304. In the eight asylums, with a capacity for 4,000, there are 4,739 patients.

Delaware has about 200, and the majority are provided for at home.

Maryland claims about 1,900, and has 915 of them in the various asylums and retreats, 200 in almshouses, and 731 at home.

The District of Columbia has 938 insane people. Of this number 860 are in the Government Hospital for the Insane. The census of this institution, which is 1,155, also includes the insane of the United States army and navy, and of the Marine Hospital service.

Virginia comes next on our list with 2,411; and provides for 1,098 in asylums, 102 in almshouses, and the remainder at home.

West Virginia has about 985 lunacy cases. For want of accommodation the asylum is obliged to refuse many applications for admission. These applications are filed away and taken up for consideration as vacancies occur.

The number in North Carolina, as given by the last census, is 2,028. Here there are three asylums with 640 patients.

Out of 1,112 in South Carolina, 425 are cared for in two asylums.

In Georgia we have about 1,800 of these dependent persons; 1,218 of whom are in the only asylum. This asylum has under progress of construction a detached block to accommodate 250 more.

Florida, with an insane population of about 253, has 167 in the asylum.

The Alabama Insane Hospital, having a capacity for 750, has 613 cases out of 1,521 in the State.

Mississippi has 1,147. The present asylum is full, and another, soon to be finished, will have accommodations for 250.

About one-half of the 1,002 insane in Louisiana are in the various asylums.

The census returns give the number in Tennessee as 2,404. This State has one asylum in operation, and another in course of erection.

Kentucky adds 3,000 to the number. Of these 1,800 are in asylums, and the remainder at home and in almshouses and jails.

Next we have Ohio with 7,286, and about 3,500 in hospitals for the insane.

Indiana follows with 4,000, and the present asylum capacity is about 1,400. The three asylums now being built, when completed, will accommodate 2,100 patients.

Illinois has 5,500, and complains that the asylums are overcrowded.

Michigan, with her 3,000 insane, makes the same complaint. Here we find two State asylums in operation, and two more in process of erection.

Wisconsin's 2,800 cause the cry of overcrowding to be still heard.

Minnesota probably has 2,000, and accommodates 1,100 of them in the two asylums.

In Iowa we find an addition of 3,000 to this portion of our population. The capacity of the present asylums is being increased to give room for 300 more patients, and a new hospital is about to be built.

The number in Missouri is 3,310, and the great majority are cared for at home.

Arkansas has one asylum, accommodating at present 250 patients; but the exact number of insane in the State is not definitely known.

Of the 1,564 suffering from some form of mental disease in Texas, 550 are in the asylum. Another asylum, with room for 350 patients, will soon be completed.

Kansas provides, in two asylums, for 690 out of a total of 1,297.

Nebraska has 450 lunatics, and the asylum shelters 330 of them.

The capacity of the Colorado Insane Asylum is for 225. We find 117 cases there, which probably is nearly all of this class in the State.

Nevada's insane number about 160, and are all in the asylum.

In California it is impossible to give a reliable estimate of the number of insane in the State outside of asylums. In the State asylums there are 2,650 patients, being many more than they were intended to accommodate.

Last of the States comes Oregon with about 378, and nearly all of them are in the asylum, which has room for 412.

As near as we have been able to ascertain the number of insane in the various Territories are as follows:

Arizona, - - - - -	21	New Mexico, - - -	153
Dakota, - - - - -	75	Utah, - - - - -	151
Idaho, - - - - -	16	Washington, - - -	140
Montana, - - - - -	59	Wyoming, - - - -	4

In many of the Southern and Western States politics enter largely into the management of all institutions, and such a system of frequent changes cannot be productive of the best administration; particularly in asylum service where a special course of experience and study is required.

From the South, where many of the insane are kept in jails and poorhouses, we hear pitiable stories of their treatment.

It is a great satisfaction to see that the public is beginning to regard an insane person as one suffering from a disease, and to view asylums as hospitals for the alleviation or cure of such ailment; instead of considering the lunatic as a convict fit for the ball and chain, or a gloomy cell in the dark attic of some private dwelling; and the asylum as a place worse than the Prison of Chillon.

With the advancement of scientific knowledge, let us hope that the people will appreciate the real condition of this unfortunate portion of our population, and see to it, that they are given the benefit of the most approved methods of treatment.

Responsibility as Affected by Alcoholic Anæsthesia.

*INTELLECTUAL AND MORAL FACULTIES WEAKENED AND
BENUMBED; INABILITY TO DISCRIMINATE BETWEEN
RIGHT AND WRONG — DISGUISED BY
AUTOMATISM.**

By T. L. WRIGHT, M. D., Bellefontaine, O.

WHEN the material instruments of the mental and moral powers are, for a protracted season, inhibited in function by the anæsthetic or paralyzing property of alcohol, great and fundamental disturbances must ensue in the manifestation of mind and morals. Clearly pronounced anæsthesia withdraws the nervous centres from independent and spontaneous activity, and compels the mind to assume, in all its essential functions, that inferior plane of exhibition, which is simply routine, imitative, habitual, automatic. It is impossible for a mind in which the feeling of the *ego* is weak, and the sense of personality is wavering or destroyed, to so establish its own relations with morality, as to be capable of distinguishing accurately between right and wrong. To perceive what is right requires alertness, and the power of ready and clear discrimination in the mental operations. To recognize wrong, not only requires the same mental properties, but also a sensitiveness of the moral faculties, which is wholly inconsistent with the obscurity and sluggish movements imposed by alcoholic anæsthesia.

The stereotyped questions propounded in courts of law, respecting the moral capacity of criminals, are as follows: "Could the prisoner distinguish between right and wrong? Did he know when he committed the act that he was

* This is one of three chapters "On Alcoholic Responsibility," in a manuscript dissertation on inebriety.

doing wrong?" The importance of a familiarity with all the terms employed in these questions, when applied to ascertained facts in criminal cases, is apparent when it is remembered that they embody what the courts in England and America insist shall be considered as the only test of legal responsibility.

But the power of discriminating between the finer shades of the moral qualities must be weakened when consciousness is defective; and it is always defective to some degree, in every grade of anæsthesia. When it is considered that habitual anæsthesia may become, to a certain extent, constitutional and hereditary, we are compelled to admit that the transmission of an alcoholic neurosis may eventuate in the establishment of a mental condition which is incompetent to determine the distinctive qualities of the moral attributes. That is, it may eventuate in the founding of a criminal constitution, through the laws of heredity. I believe that normal consciousness, and a clear sense of personality, or egoism, are nearly convertible expressions; and I repeat in effect, though in somewhat different language, what I have already said: unless the feeling of personal identity is clear, it is difficult to bring self into satisfactory relationship with the delicate and refined principles of the higher morality.

I make a distinction, however, between the purely rational process of discriminating as to the nature of moral qualities, and the living and appreciative feeling of the same qualities. When the distinguishing characteristics of right or of wrong are assimilated in the sound mind, they become motives to conduct; and this is very different from the cold and automatic admission of their existence, without their warming and moving impulses.

The knowledge of right, abstractly or automatically, and through reason only, and the knowledge of wrong abstractly and by habit or rote may be present, and yet the power of discriminating between the two, the power of using the reason and the sensibilities together, in a comparison or analysis of the elements of right as relates to the elements

of wrong, may be wholly absent. It is possible to have an idea of right without feeling it, for knowledge and sensibility are not always conjoined; and so also there may be a rational idea of wrong, without a living appreciation of its qualities and possibilities. There may exist, indeed, an utter incapacity to enter into such a process of comparison between the two attributes, as to apply the results, to a determination of the character of conduct.

Relevant to this subject are the words of Seppilli: "We must remember that cerebral activity is manifested under two different aspects—that of the conscient and of the inconscient. The conscient activity or consciousness is constituted of knowledge possessed by the *ego* of its own acts—that which happens within itself, which happens in its relations with the external world. On the contrary, in the inconscient activity of the brain, denominated also automatism, all those actions enter in which the *ego* takes no part or is aware of any; but these latter are combined and directed so as to resemble those which the *ego* perceives, wills and directs."

Here is explained the difference between responsible and automatic life. Not only is the fact recognized that normal life must be founded upon a conscious *ego*, but the fact is also recognized that a life founded upon an inconscient *ego* may resemble the former. The first is dominated by an *ego* which perceives, wills and directs; while the other is an exhibition of habit, imitation, custom, in brief, automatism. Human conduct directed by a conscious *ego* comes of a capacity to discriminate between right and wrong; and it is therefore amenable to the requirements of responsibility. But conduct resting upon automatism, into which the conscious *ego* does not enter, and which is incompetent to discriminate between right and wrong, cannot be esteemed as a proper subject for ordinary responsibility. Yet the obvious features of these two lines of mental existence resemble each other; or, rather, the automatic life imitates and resembles the truly rational life.

The conclusion now forces itself upon the attention, that it is exceedingly difficult, very frequently, for a witness to answer the usual questions proposed by lawyers, respecting the ability of a criminal to discriminate between right and wrong. The imperfections in sensation, and the inhibition on the moral faculties imposed by alcoholic anæsthesia, so depress the mental powers as to compel them to assume the characteristics of automatism; but the semblances of automatism are so similar to conscious rationality, that they disguise the actual incompetency of the moral powers. The beholder very often cannot say with absolute certainty, from the ordinary life of the criminal, whether or not he can discriminate between right and wrong.

That automatic life is merely imitative, and is not something independent and individualized, is shown by the fact that, in any country, the automatic exhibition follows the pattern of the rational operations peculiar to the same country. The automatism of the Hindoo reproduces the manners and customs of the Hindoo religion and civilization. The automatic existence of the barbarian is a reflection of the actual life and habits of savagery.

The "right and wrong" test of responsibility, although of undoubted value, is too frequently lamentably deficient. It has wrought the greatest hardship and injustice to multitudes of persons accused of crime, and has spread desolation and woe into hearts that were worthy of sympathy and pity. As a test of responsibility, it should stand subject to explanation and impeachment; it should be examined by the light of circumstances, and become the object of severe inquisition and of undoubted preponderance of proof. It should never be admitted unsupported by collateral evidence--by evidence converging from other lines of inquiry; and especially, it should never be invested with the force of demonstration, as though it were impregnable and beyond the reach of question.

Independent of the habit of automatism, incident to the depravation of the intellectual and moral powers by

alcoholism, there appear in the same train of mental disaster, certain other troublesome and unlooked-for phenomena. It is clear that the chronic inhibition or paralyzation of certain functional forms of mind and morals by the force of anæsthesia must end in the establishment of special habits of mind and morals, corresponding with the defects produced by the inhibitory power. The formation of habits, as well as their character for pertinacity, may thus be readily comprehended. When a habit becomes a part of the constitution, the phenomena of living are, with respect to that habit, automatic. But habit and automatism are not under the supervision of judgment or will, and consequently they have little or no place in the formation of comparisons, or the determinations of choice. They cannot, by any power of their own, act as arbiters in questions wherein the qualities of right and wrong are involved.

The tendency of defective mental function, to lead the mind into the ruts of automatism, will be appreciated upon a consideration of the ready disposition of the sound mind itself to follow the channels of habit. Common and healthy mental activity is largely automatic. Yet the peculiar sensitiveness of the moral nature, which is a leading characteristic of humanity, renders the mind of man exceedingly acute and inquisitive respecting points of morality. And so it is, that although much of mental and motor function becomes a matter of routine and habit, the moral character of motive is, in ordinary circumstances, severely analyzed. Of course, when the co-ordinating centers are seriously repressed, as by alcoholism and its accompanying disabilities, the nature of morality, of motive, of right and wrong, is very imperfectly felt and comprehended.

Habits of thought are acquired slowly and painfully. It is only necessary to advert to the difference between man and the lower animals. The former gains by long and laborious experiment a habit of mental activity fitted to his exalted sphere; while the latter are born with instincts sufficient for their lower place in life. The tedious

repetitions of sensations, perceptions, conceptions and the motor activities, becomes at last, to a great degree, a habit, which it is impossible to discard. Mental, and even motor life, are in time mere repetitions of long enacted powers, which are applied to the usual incidents of human existence.

The power of walking erect is established with much balancing of the body and mental calculation. But at length the acts of walking, running and jumping are strictly automatic, requiring little if any exercise of the judgment or conscious will in their performance. Even the insane walk and run very well; but no one would claim, because an insane man can perform the act of walking with facility—an act, in its abstract nature demanding judgment and nice calculation—he is therefore not insane, but is in possession of fine powers of reason and discrimination.

There are many other courses of nervous function, of a purely mental or moral nature, which may become automatic. The mature mind often arrives at intellectual conclusions with wonderful directness and speed. What was once slow and anxious training, what was once pursued in regulated and prescribed steps, and over difficulties, is made by practice to be instinctive and automatic. The alphabetical order of reasoning no longer obtains. Small things are taken for granted. An immense number of positions are habitually assumed; and in ordinary life, the mental processes, like eagle-flights, are grand movements from point to point, from headland to headland of thought, not lingering to go through the tedious routine of detailed mental activity. And thus men not only sane, but men insane, live and think and act automatically in the common circumstances of daily existence. And it may be impossible to determine from the conduct of even an insane person, whether or not he can properly discriminate between the qualities of right and wrong; for, while automatism resembles rationality, it calls for no active process of discrimination. Many truly insane criminals are adjudged to be sane and responsible

because their automatic and common mode of life is like that of rational minds; while the cheat and pretender is acquitted upon the plea of insanity, because he shams under all circumstances and upon all subjects.

It is not an impossibility that a mind may be imbued with an imitative and automatic capacity, which will direct the routine avocations belonging to its lines and associations, with a success above that of the average minds of its grade; and yet, this very success may disguise the real imperfection and emptiness of its powers. When the slow invasion of disease finally reaches such a point as to assume the domination of motive, and the control of conduct, the ordinary appearances of automatism fail to illustrate and establish the character of the responsibility involved. The motives and the conduct originating from brain disease, or from toxic impressions, occupy a plane that is different from automatism; and one of these classes of mental and moral exhibition, cannot, by any process of reasoning, or any rule of justice, be brought forward to illustrate and interpret the other class. The "test," of a sensitive knowledge of right and wrong, is fraught with difficulties, and it is sometimes liable to such interpretations, as will confound the judgment respecting the motive or incentive involved in a criminal act.

When a concealed and carefully guarded delusion of insanity, or when the impulsion of alcoholic or other toxic agents circulating within the brain, suddenly and with irresistible violence, breaks forth into deeds of atrocity, the mind for the time being is operating independently of habit. Yet, while moving independently of automatism, it is directed by a power immeasurably greater—namely, the force of insane delusion, or the unbidden hallucinations born of noxious impressions. In such circumstances, it would not be correct to infer that a criminal, because his ordinary life resembles the common life of men in general, could discriminate correctly between right and wrong, or that he knew he was doing wrong when he committed the unlawful act.

The Hygiene of the Nervous System and Mind.*

THE RELATION OF THE NERVOUS SYSTEM TO CHOLERA AND ITS PROPHYLAXIS AND NEUROTHERAPY. THE CURE AND PREVENTION OF DYSPEPSIA AS A NERVOUS DISEASE. THE NEUROPATHIC DIATHESIS; ITS QUARANTINE AND TREATMENT.

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A CENTURY ago Cullen made the observation that from all that he could discern of the movements of the human body in disease they were all so intimately associated with and dependent upon the nervous system that they might in a manner be called nervous ("Quantam ego quidem video motus morborum fere omnes a motibus in systemate nervorum ita pendent, ut morbi fere omnes quodammodo Nervosi dici queant."—Cullen's Nos. b. II., p. 181, Edin. Ed., 1780.)

This proposition has been sustained from that day to this by every step taken in the forward march of medicine, for, notwithstanding the significant and valuable discoveries of spores, fungi, microbes, bacilli and other microscopic revelations and their relation to morbid states of the blood and organism, it is not until the nervous system is morbidly touched and yields in disordered action (psychic, trophic, motor, vaso-motor or other parts of the sympathetic, especially in its ganglia), that the characteristic phenomena of distinctive disease appear. The intangible virus of zymotic fever, which "touches the life of all the blood corruptibly" is first revealed in the *malaise*, cephalalgia, jactitation, insomnia or somnolencia and delirium of the

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higher psychical centers of the cerebrum. And so other fevers after the symptomatic revelations of a disturbed and struggling nervous system notify the physician that his aid is needed, the microscope, if he have time then to use it, may reveal the proximate cause of the morbid commotion to be, or have been micrococci or filiaræ, but until the assaulted nervous system succumbs, we know nothing of the mischief brewing or the danger threatened, and the specific microbe sustains the same relation to the resultant phenomena that the draught of air or sudden exposure to change of temperature does to the vaso-motor paralysis and resultant mucous and vascular congestion phenomena of a common cold or its graver results in localized inflammation. Bacilli are not disease, but only potent causes, just as stone in the bladder and sanguineous, fibrinous or serous exudates are consequences of morbid systematic action.

Malaria, of which we know so much and yet so little, reveals itself in chills and fever; both nervous phenomena, and in congestions and delirium and coma, which but for the yielding of the vaso-motor nervous system and disturbance of the psycho-motor area of the brain could not occur, and when the final ending of all physical function is foretold in the graver blood empoisonments of yellow and other fevers, the last expiring movement is in the nervous system, in those "idle comments of the brain which foretell the ending of mortality." This is true of the rigor mortis of sudden death and the last comatose symptom of cholera collapse. We have seen, in the progress of medical observation and research, many obscure diseases, as pathology has grown clearer, assigned to their proper place in the nervous system, from exophthalmic goitre to eczema and from cholera to dyspepsia, notwithstanding that in connection with the contagion and spread of cholera Asiatica, a contagium microbe, thanks to the labors and noble heroism of Koch, is proven in the comma bacillus as the essential causative or resultant excitant and propagative factor. Yet cholera is essentially a disease of

the nervous system in its symptomatic display, especially beyond the bowels.

The phenomena of this dread disease which demand our attention are essentially nervous; the paralyzed vasomotor control which admits of the fatal aqueous exudations, which permit the exsanguined and shrunken features, and the fatal exhaustion, the sudden paralysis of appropriating power of the centres presiding over nutrition, the complete exhaustion of the trophic nervous system which makes the administration of medicine in certain fatally predestined cases appear like a solemn mockery, the pinched, contracted visage, and the painful and finally painless cramps, and exhausted power of inhibition, which sooner or later appears, all tell us how essentially nervous are the phenomena of this pestilence, when once its hold is secure upon its victim, and suggest the importance of a well sustained, vigorous, tranquil and resisting nervous system in warding off its destructive attacks.

Though this pestilence no longer walketh in darkness, and though it wasteth less at noonday than in the distant past, its sad work still goes on under the glare of the brightest light of science, but there are hygienic methods which to-day diminish susceptibility to contagion, by imparting public confidence, reducing mental demoralization and panic, and maintaining the general health of communities up to a higher standard. Though by sight of science we have probably found the cholera bacillus (the bacillus of cholera Asiatica and of cholera nostras perhaps) we can not yet entirely by power of science keep this potent living infinitesimal from evil, yet we can resist and circumvent its power, not alone by clean streets and dwelling places, sunlight into the dark places and disinfection and pure air where dirt and filth abound, but by clean and strong bodies and by well sustained, well rested, invigorated and tranquilized nervous systems, built up to the power of resistance to the very maximum of physiological strength, not stimulated spasmodically by sudden fright after the pestilence has come, but trained up in

advance by adequate but temperate nourishment; by ample rest of brain for the fullest possible recuperation, each night, of the day's wasted power; by making cities profoundly quiet in time of the pestilence by interdicting the needless noises both day and night, which keep the cells of the brain and nervous system agitated and restless, when they might be restful and in condition of repair for more work; and by a trained abeyance of the passions, the abandonment of exhaustive vices which undermine the nervous system and fit it to succumb to light assaults of disease.

To this end, in anticipation of an invasion of cholera here next year, the prudent will finish up, before the epidemic comes, present business enterprises which promise unusual mental strain, worry or other tax on their powers, and permit a little of that reserve nerve force to accumulate, which, hitherto, like an improvident man with his bank account, they have been in the habit of expending as fast as it has accrued. Cholera is not in strictest sense a filth disease, at least in this country, though filth by contaminating the atmosphere and thus impoverishing the blood and impairing the nervous system, furnishes favorable conditions for its taking hold on the organism. On the contrary, putrefaction bacteria, as Koch asserts, destroy the comma bacilli or arrest their multiplication. Alcoholic stimulation, at least to dissipation so-called, must be abandoned; the physiological tone of the vaso-motor system maintained and the perfect stability of the higher cerebral centres—the psycho-motor and psychical—must be permitted to become re-established up to the point of their highest resisting power. Habitual alcoholization is a paralyzant of the vaso-motor nervous system as well as of the cortex of the brain, beyond all doubt, notwithstanding it acts as a temporary excitant, and momentarily stimulates latent power into increased activity. The frequent habitual use of stimulants like alcohol exalts the heart's activity, exhausts the tonicity of the brain by causing it to expend its latent reserve power

daily; and leaves its vessels dilated and its substance oppressed; the cerebra-spinal fluid crowded out of the perivascular spaces and the brain is prepared then for apoplexia and coma. Tobacco, too, is a vaso-motor paralyzant and motor depressant and weakener of vital power in those in whom tolerance has not been well established, and had better be used with moderation or abstained from.

To the end of proper prophylaxis in regard to the nervous system, the hours of rest and labor should be regulated by municipal authority, that over-taxed human beings, especially among the poor, should not be made ready subjects for attack and almost certain victims to the fatality of cholera. Night work should be discountenanced so far as practicable and prolonged work-hours without adequate rest following should, when practicable, be prohibited.

The schools should be looked after; tasks should be lightened and invigorating relaxation lengthened both for teacher and pupil, and more daylight and pure air let into the school room. Fewer hours of study should be required; overcrowded rooms should not be tolerated and basement lunch, or recitation rooms, abandoned.

Those who hold people to service should see that they do not engage in dissipating and exhausting pleasures during hours which should be devoted to sleep, and should enjoin staying at home and resting instead of wasting their nervous powers by frolicking till midnight, and then retiring to be awakened unrefreshed for the morning's work. Cholera in the kitchen imperils the health of the parlor and the health of rooms upstairs is concerned in the welfare of the occupants of the laundry. Saloons should be closed at an early night season if not during the day, in times of epidemic, and men before they get dead-drunk in them should be taken home and put to bed by the police.

All causes, public or private, of depression of the nervous system should, in times of this epidemic be avoided; long and exhaustive funeral services, especially

in crowded and illy ventilated rooms, tiresome and ostentatious funeral processions, cars and rooms vitiated by tobacco smoke and depressing human exhalations.

Men may deny that nature's God commanded the Sabbath day for rest, but physicians know that imperious nature demands it, if longevity of human life would be reached. The law of Moses commanding a respite from customary labor one day in seven was founded in physiological wisdom, nature and nature's God inspired it. And for this reason physicians should demand that the sounds of busy industry should cease one day in seven, that the ceaseless bustle and din of business, which so tries the nervous system during the week, shall cease each seventh day, for one of recuperative rest to brain and mind; that all needless noises which harshly grate upon the ear and rob tired nature of needed repose should be suppressed, in order that enough of sleep, and rest, "sore labor's bath," "tired nature's second course," may come to the people of the heart of the city to "knit up the week's ravelled sleeve of care." There is too much unnecessary noise even on ordinary business days, and too much noise allowed in the night time, and altogether too much on Sunday for the highest health of the people of our great American cities.

The wealthy suburban resident does not suffer so much from this cause of nerve disturbance as the working man and subordinate business man who lives down town, but the needless wear and tear of brain and nerve from unnecessary and preventable city noises, if prevented, would add very materially to the healthful endurance of the people in time of cholera and at all times, prolonging life and averting insanity and premature failures of the nervous system in other directions. To be well repaired, man, like any other machine, must rest, and rest of brain and nerve is disturbed through the channels and centers of audition and sight, as well as through those of motion, etc.

The prayer of conservative physiology is for rest, for the salvation of the resisting power of the nervous system to devastating pestilence, and the power of resisting and

sustaining disease in general, is obtained by adequate rest of the organism, which is a condition of its repair and power.

The cause of much of the premature decrepitude and nerve degeneracy, and breakdown of our day, is in the many inventions man has devised whereby he robs himself of timely rest. The morning newspaper often read through before breakfast; the telephone in his house to call him at any and all times aside from his repose; the electric light to keep his brain unduly stimulated through the retinae; the railroad and the sleeping coach which may keep him constantly on the rail (if he chooses to so travel) for continuous weeks without rest from the noisy and exhaustive cerebro-spinal concussions of this mode of travel; hasty meals and telegrams, and business, and nightmare sleep, all commingled, wither and wreck lives innumerable, which, under wiser management might end differently, and the needless noises of the city, the bells and steam whistles, howling hucksters, noisy street cars, yelling hoodlums, that make night hideous with soul jarring sounds, hasten the premature endings of useful lives. And when, superadded to all this unphysiological strain, we have the assault of a pestilence that poisons, like cholera, how much exemption can such overwrought organisms expect? How much of resisting immunity can such overstrained and exhausted nerve force oppose to the invading foe?

If the epidemic comes, as it almost surely will next summer or fall, there should be a common understanding among physicians to demand as much rest as practicable for the people, and, by comity among themselves, they should lighten each other's labors and no one should work continuously night and day.

It is not long after an epidemic comes before the long watching nurses and the tired, over-taxed doctors become its victims.

The lesson a pestilence teaches is not only cleanliness but temperance, and restful resisting vigor for the nervous system and the conservation of its powers, maintaining

the functions of the body in the presence of a blood destroying and vitality depressing enemy. With the human organization, in a long contest with disease, the blood is the life, but if the nervous system have secured to itself, by ample rest and frugality and economy of expenditure; and by freedom from overstrain and vicious indulgence, have established the habit of claiming and securing to recuperative use its own elements from the blood, it will be long in yielding and longer still in perishing under the assaults of disease.

It is this trained resistance of the nervous system by which it is taught physiologically, pending a successfully resisted attack, to claim its own nutrition, even while the blood is depressed by the presence of a pestilential virus, which, in my opinion, constitutes immunity from recurring attacks; the comma bacillus is destructible too in strong healthy gastric juice as Koch and Klein have shown, and it is through a vigorous, well poised nervous system that we may be assured of the destructive potency of the gastric digestive secretion. The inferior animals too, whose nervous systems are unshattered by the vices and overstrain of civilization, are more exempt than man from cholera.

In time of epidemic visitation the illy-fed, unrested, poverty stricken or vice-broken succumb even more frequently than those whose ambition for wealth and schemes for success rob them of the full benefit of sleep and regular food and recuperating rest.

Many a man well endowed and unweakened in his nervous centers goes about unharmed with the same amount of malaria in his blood, probably, which causes another, less strongly fortified, to succumb to a fatal form of congestion.

All other things being equal, the tranquil-minded and restful and daily and adequately recuperated nervous systems of a community afford the best and longest immunity in time of pestilence. The unrested and unrestful, the weary and the heavy laden, the vice-broken and the unsteadily endowed nervous systems furnish the most numerous and earliest victims.

Insomnia is a thief that robs the brain and nervous system of power and circumvents recuperation—a factor in nervous breakdown more potent than all others, yet it is preventable and curable by remediable measures, public and private.

There is, therefore, without dwelling more in detail, an obvious and important sanitary hygiene for the nervous system in time of great epidemics, and the time for the beginning of preventive measures should be in advance of the actual presence of the morbid invader. That time is now, for when the pestilence shall have come and gone, those who are fittest in the tone and resisting power of their nervous systems to survive, will live out the scourge. The weak and organically unprepared will succumb.

The practical deduction from the foregoing to avert cholera from the human system, in addition to such measures as quarantine it from the country or chemically destroy the bacillus and prevent it from coming into contact with the organism at all, is to eat only such slightly irritating substances as will promote the gastric secretion, without inducing catarrh of the stomach or bowels, and keep such a supply of healthy gastric juice in the stomach as will destroy such comma bacilli as may find lodgment there. Take the best possible care of the physiological vitality of the central nervous system by every known means of rest and repair, and by frequent moderate eating. Maintain by normal nutrition and electrizations the necessary tone of the solar plexus and the perfect physiological integrity of the cerebro-spinal axis; keep away from the cholera infected when the system is exhausted and the supply of gastric juice is likely to be scanty or weak in quality; cultivate and maintain a state of hopeful mental tranquility by avoiding every source of mental overtax and unrest.

The successful prophylaxis of cholera consists of something more than quarantine or chemical disinfection. The chemistry of the nervous system itself, if we but invoke it, may give us aid. The cultivation of resisting nerve force involved by healthy organisms is worthy of our

consideration. A wise prophylaxis and therapeusis seems indicated in adequate rest of the nervous system, in galvanism, which maintains its tone and static electricity which promotes its vigor at the same time that it has the probable power to destroy bacilli and in hot water as near 150° F. as practicable, taken internally, which gives nerve tone and dissipates congestion through its influence on the vaso-motor system, and in chloral, which gives strength through restorative rest and which is also powerfully antiseptic.

The following brief epitome of the anatomical and physiological data of the subject may serve to show still more plainly how essential is the integrity of the nervous system in its highest physiological power to the prophylaxis and endurance of cholera. It is also a sufficient anatomical *résumé* for the subject that follows.

The local innervation of the stomach and intestines is carried on through interlacing of the nerve fibres and ganglion cells imbedded in the sub-mucous and muscular coats. Auerbach's plexus in the muscular and Meissner's in the sub-mucous tissue. Descending from the medulla are the pneumo-gastrics, and from the solar plexus of the sympathetic come gastric branches. The pneumogastrics and the gastric branches of the solar plexus may be said to encompass the stomach.

Vaso-motor nerves branching through the splanchnics from the solar plexus accompany the gastric vessels. These nerves have connection with medullary centers and pass through the cerebral peduncles and thalami aptici to higher centers in the cerebrum.

The salivary and gastric secretions, as well as the movements of the stomach and bowels, are dependent upon nerve influence and the regulation of inhibition and excitation. Gastric secretion is partly a local reflex act through peripheral stimulation from the interior of the stomach, through the nerve branches which go to Auerbach's plexus imbedded in the sub-mucous tissue, but the amount and quality of this secretion will depend largely

upon the integrity of the general ganglionic and whole nervous system, especially upon the tone of the solar plexus and the brain.

The gastric secretion may be inhibited or excited by a powerful mental impression; a painful emotion suppressing and an agreeable one, as of the remembrance of a delicious dish, exciting it and the salivary secretion also.

A reflex from the gustatory nerves to the brain may pass to the stomach and excite it. Great fatigue as well as great pain suspend both gastric secretion and appetite.

During the week of the great St. Louis fire in 1849, the ravages of cholera, which up to that event had reached a mortality of over two hundred a day out of a population of fifty thousand, almost entirely ceased, so stimulating and invigorating was the excitement of that week to the brains and nervous systems of the people, the psychical exaltation inseparable from the sudden necessity thrown upon so many business men for repairing the sudden damage and re-establishing their abruptly interrupted business. Some of the germs, too, may have been destroyed by the great heat, but it was only the business part of the city that was destroyed, where but little cholera prevailed except on the steamers. The writer was in the city at the time and recollects this to have been the fact. And after a week had expired the pestilence raged as before in all its resistless and relentless virulence.

The destructive power of fire suggests the value of crematories for destroying the cholera bascilli found in the clothing and dejecta of cholera patients.

THE NECESSITY OF HYGIENIC MEASURES IN REGARD TO DYSPEPSIA ARE BECOMING MORE AND MORE APPARENT EVERY YEAR.

We have become a nation of dyspeptics, not because we eat too much but because we work too much with our heads and too inopportunately. Fret and worry and ambition to get rich keep the brains of Americans over active. The precarious results of business, the gambling ventures in stocks and sudden reversals of fortune and

recurring threatenings of panics, and the feeling of insecurity which periodically possesses the public mind, keeps the American brain constantly anxious and active to arrest impending failure or miscarriages of cherished enterprises, and the brain thus incessantly overworked and overworried, robs the ganglia of the sympathetic of their due innervation; the pneumogastriacs too are impoverished and the innervation that belongs to the stomach through the solar plexus upon which a healthy quality and abundant quantity of gastric juice depends, is not received by it. The victim of dyspepsia is a victim of self-robbery. The overstrained brain surreptitiously takes from the stomach what it needs for healthy function. It is not the bolting of food, so much talked of, that usually causes dyspepsia, but this voracious robbery of the brain, which takes all the nerve force of the body, which brings dyspepsia to the ceaselessly active brain worker and brain worrier.

I have time and again seen men recover from dyspepsia while under treatment for an overworked brain, without a single remedy addressed to the stomach, recover under rest and recuperation of mind and those agencies which induce them.

DYSPEPSIA A DISEASE OF THE BRAIN AND NERVOUS SYSTEM.

Forty years ago the distinguished Amariah Brigham observed that "in a majority of cases, especially among students, dyspepsia is primarily a disease of the brain and nervous system," and before him the great Abercrombie wrote that "symptoms which really depend on disease of the brain are apt to be referred to the stomach."

The testimony of the thousands of watering place and mountain air resorts and sea voyage cures are witnesses of the fact that dyspepsia is largely a disease of the brain and nervous system. The changed home and scenery cure, where depressing cares are dropped and irritating environments are exchanged for agreeable mental surroundings and brain and nerve rest, is the surest

therapeutics for the average dyspeptic, aside from a rational home treatment addressed to the rest and recuperation of the nervous system.

If any one is dyspeptic let him relax his business and secure a rest for his brain, is a safe therapeutic axiom, and this suggests the hygienic procedures of preventive medicine.

If the salvation of the people from gradual as well as sudden destruction be legitimate subjects of sanitation, then the investigation and removal, so far as practicable, of the causes of nervous dyspepsia are legitimate subjects for the efforts of physicians and sanitarians, and it should claim attention of one branch of civil service reform. In all departments of the public service hours of work adjusted to the physiological endurance of the human nervous system and no more should be enjoined, and the time for rest demanded by the physiological necessity of the organism should be secured to all government employees. The State could avert a good deal of nervous break-down and insanity in this way.

The service of nervous dyspeptics, besides being a crime against nature, in a government that develops it in its employes, is never the best service; and in times of national trial or peril is not the kind of service to be relied on. All the causes, mental, moral and physical, of neurasthenia, or malnutrition of the nervous system are legitimate subjects of study for the sanitarian and physician, and the prevention of premature nervous exhaustion in the people of the country is the collective salvation of the nation. A sound nervous system develops and fosters a vigorous optimistic patriotism, confident of the future of the country and capable of putting forth the essential energies to prevent natural decay, while pessimists are bred by illy-nourished and unrested brains and nerves, and the conditions for the fulfillment of their sombre and fatal prophecies are in their nervous systems. Strong brains are the defensive and protective brawn of a people, whether in peace, war or pestilence, and a wise people

will continually foster a judicious nerve sanitation. A well nourished nervous system is the foundation of personal courage and endurance, and in a whole people it is the best security for the prosperity of the state. The conditions and attendant vices of our present civilization tend to undermine nerve-stamina, and sanitation should address itself to arrest the individual and national nerve disintegration, which is in excess, in so many occupations, over recuperative conditions and physical regeneration.

THE NEUROPATHIC DIATHESIS.

There are too many insane, idiotic and feeble-minded people in this and other civilized countries.

A proportion of one to every five hundred people annually falling mentally maimed in the battle of life is too large. The neuropathic diathesis and the insane temperament is becoming the fatal heritage of too many of our people; there are too many brain-weakened and nerve-degenerate victims strewing the pathway of our progress.

Unstable nervous systems are everywhere, and they often wrongly influence public thought and state legislation to the detriment of the race. Cranks and intellectual squints and obliquities, inheritors of neuropathic tendencies, from the vice, ambition, or misfortune-perverted brains of an overtaxed ancestry abound, instead of that nervous stability which, like righteousness, exalts a nation and without which a vigorously righteous people can not be made, but in lieu of which will exist a sickly moral sentimentality running after unfounded moralisms and pathies and driven by every wind of spurious doctrine. To be logical, brains must be strongly endowed. Cramming and straining of brains, especially such as are not uncommonly well endowed by nature, give activity but not power, and all systems of education which disregard individual capacities that come of unstable neurotic endowments are vicious; all plans which seek to draw out all the powers of a growing child, leaving no reserve force daily for building up the growing brain into its possible

proportions of power and beauty, are wrong and must and do result in ruin.

The wants of the evolution period of the nervous powers in the human economy can not be ignored, without arrested development and stunting of the mind and body, or more properly speaking the body; the mind is for all practical purposes, the body; its capabilities and powers being dependent upon the quality and tonicity of the brain texture. (*Mens sana in corpore sano, and vice versa.*)

Education should repress tendencies as well as draw out powers, and to do this it is not moral platitudes that are demanded, but the training up of the organism in the way it should go, by the light of neurological and psychological law; by regarding the physiological wants of the growing brain, letting it rest when it needs rest and feeding its powers during the process of evolution of the higher centers of the thought layers of the cerebral cortex, as well as of the basal ganglia, and by looking to the abundant nutrition, and daily repair of the ganglionic system which presides over the functions of organic life, and this part of education is not one of object lessons or of words, but of true physiological training by supplying the growing organism with the chemical elements of nerve repair richly and without stint. No Dotheby Hall plan of richness will suffice, but the true cream of nutrition for the brain and nerves as fast as they feel the famishing influence of disintegrating work.

The proper building of a brain, with its wondrous powers and possibilities, is the grandest work that can engage the attention of educators, but the chief aim, or at least the principal effect of our present unphysiological system, is to exhaust it in many respects.

Even the violinist will look well to the tone of his instrument, and to atmospherical conditions, before he attempts to use it, but the average educator treats the harp of a thousand strings regardless of the conditions of keeping it in tune, and as though, despite the worst ill usage, it would keep in tune forever.

It is a long time since Grotius wrote "the care of the human mind is the noblest branch of medicine," so long that, like all other medical facts long ago promulgated, it has become common property, and the care of the mind should be the chief concern of the people.

History shows us how nations have perished and been blotted out by reason of degeneracy of brain and nerve organization, and how people, once masters in peaceful arts and war, have grown powerless or passed into third rate powers among the nations. "Greece, Rome, Carthage, where are they?" And why are they not as of yore? And Spain and Mexico how changed! And other nations saved from absolute extinction by revolutions bred of unstable neurotic organizations, by which, in blood and carnage, hordes of neuropaths have been destroyed, and the neuro-pathic degeneration of the nation has been stayed through regenerating war permitting mainly the fittest to survive to propagate a fitter race to longer live.

No regenerating revolutions have yet swept over our land, save the late unhappy war with the South, itself born, in my humble opinion, of unstable passion, which, with better brains and steadier nerves, might have been averted, and we should have a care lest by carrying the forcing process of our public school and collegiate systems too far without due regard to the recuperation and growth in steady brain power of our children and youth, we fit the rising and coming generations for the repetition of ensanguined history; for revolutions and wars must needs come, like pestilence and famine, to fit the survivors of a largely unfit people to live. As waste precedes repair and is a condition of it, in brain or muscle, and as it is the condition of the display of power in physics, so in the human economy the ordinary waste may give place to extraordinary destruction, that that which is most physiological in a people should be separated from the pathological and it thus be made possible for a nation by the rejuvenation of revolution and war to live out an otherwise inglorious destiny.

We see in our own day individuals stricken down in their prime, with preventable brain and nerve destruction, and it is fortunate for the welfare of the race that so many die prematurely without leaving behind greater multitudes than there are, dowered with the fatal tendency to break down early in life in brain and nerve. Yet too many, like Dean Swift, begin to perish at the top, even before middle life. Greeley, President Johnson, Vice-President Wilson, and hosts of others, whose names occur to you among the not remotely dead, tell how very prone the brains of our public men are to break down under the strain of life's demands.

The hygiene of the mind and nervous system should be such as to make these too common occurrences exceptional. Men should know that blood vessels kept over full by habitual and too prolonged mental excitation, aided by over stimulation of the heart by alcoholic indulgence, must sooner or later end in pathological dilatation of brain vessels, in serous exudation, or in arteriole rupture, or in heart failure or hypertrophy and their fatal consequences. There is a limit to the capacity of the brain or of any other organ of the body for labor, without ample rest and repair, even as there is a limit to the capacity of inanimate machinery less intricately and wonderfully wrought than the mind, to endlessly work on.

Nations and states and communities have need of quarantine against the hordes of neuropaths that hover about, or fill high places or go about in public, ready, like dynamite bombs, to explode under slight, sudden pressure, and destroy. The Guiteaus and Booths and Lawrences who shoot at Presidents, in times of public political excitement; the Passenantes and Hadfields who make Kings the mark of their unprovoked vengeance; the Freemans and Smiths who make tragedies of child-sacrifice to delusive inspiration, like the horrors of Pokasett and Westminster, and murder and arson and crimes innumerable and nameless, are often only possible through predominance of insanity or the insane temperament, the

spread of which is more to be dreaded in any community than the worst of physical pestilences, for its baneful work goes on from generation to generation; through it the infant now just suckling at the breast is fatally predestined to slay her who gives it its first life sustenance; through it babes just born are strangled by mothers in the throes of puerperal mania; through it are fratricides, patricides and matricides otherwise impossible, and many of the most horrible and awful of crimes which in the public press daily keep our thoughts on blood. It is a great good fortune for the perpetuation of the average stability of the race that so many who are possessed of the insane temperament early commit suicide and that, possessed of feebler resisting power to morbid disintegrating forces, they die prematurely, or before propagating their species of intercurrent diseases, and before others are made the victims of their fatally unstable heritage.

When the neuropathic diathesis has developed into insanity, in its aggravated and dangerous forms, society is willing to house the lunatic and let him out again when he ceases to be harmful, but an insane man is never harmless to society if he be in the prime of life. If he be married, or likely to marry, the reason is obvious, and all the more harmful will he be if a victim of some doubtful undemonstrative form of insanity whose existence is so often denied, of insanity in psycho-sensory rather than in pronounced delusional form.

Insanity and the insane temperament are therefore subjects of the greatest concern to any people, of the utmost importance to communities as well as to families. A matrimonial alliance once formed with an impending lunatic means the founding of a family with a tendency to brain degeneracy, and the likelihood of a progeny of cranks, or over active or feeble-minded and unstable eccentrics or positive lunatics, and the individual and the State must suffer. Our modern civilization does not justify the radical measures which would have occurred to Lycurgus had he been confronted as we are, with the fatal

ravages of the insane temperament; but law can and must, if the nation is saved, do something more than simply corral the physically dangerous lunatic in asylums, which is now the present tendency and only remedy employed.

A certain degree of exemption should be proven, sufficient at least to give a reasonable chance of regeneration, before marriage contracts are sanctioned.

Positive lunatics should of course be forbidden marriage, and marriage should be forbidden to confirmed drunkards, for drunkenness breeds hereditary epilepsy, dipsomania, imbecility and insanity; and marriage should be forbidden to epileptics.

The instructive typical family history given by Morel, of immorality, alcoholic excess and brutal degradation in the first generation, followed by a record of hereditary drunkenness, maniacal attacks and general paralysis in the second, hypochondria, lypemania, systematic mania and homicidal tendencies associated with sobriety in the third, with feeble intelligence, stupidity and mania in youth and transition to complete idiocy and extinction of the family in the fourth generation, is not more instructive than the history the writer has given of the O. Z. family, (*Vide ALIENIST AND NEUROLOGIST,*) where from the early intemperance of the father (though reformation subsequently followed in the father) all of the immediate descendants are neuropathically endowed, one child having been first nymphomaniacal, then generally maniacal and demented, another maniacal, a third dipsomaniacal and morally deranged, a fourth epileptic, the fifth markedly hysterical and gangliopathic and the sixth, still a youth, markedly neuropathic.

The peril of the race from the increase of the neuropathic diathesis should set us all to thinking, and those who have the authority, to acting in the direction of self-preservation and indirectly of the ultimate life of the nation. The multiplication of hospitals for the insane and of inebriate asylums and of schools for the feeble-minded, and improved methods of treating nervous diseases and

of homes for impoverished neuropaths of every grade, from the hospital for nervous diseases proper to the almshouse where many of these wrecks are lodged, does not cure the evil, though they serve to hide it somewhat from public sight. We best provide against the spread of small-pox by general vaccination, not by numerous pest houses, so by general preventive sanitation can we avert the threatening spread of the now prevalent and growing diseases of the nervous system.

The neuropathic diathesis, the insane constitution that breeds its like and burdens the State with hereditary imbecility, idiocy, insanity, deaf-mutism, and the lesser degrees of mental defect, must be made the subject of statutory enactment and enforced law; sentimentality must yield to fact; the teachings of nature must be as decided and as sternly enforced as her own unerring edicts are. Why should the drunkard and epileptic be permitted to beget a race of imbeciles, epileptics, idiots or criminals? Why should the life-long criminal and the pauper be allowed to go on reproducing his defective kind, the lunatic likewise, and all the mentally maimed of whatever degree, especially when by forfeiture of liberty they fall under proper custody of the law; and why should generation after generation of these miserables be allowed to be brought into being to become either burdens upon the state or victims of its misdirected vengeance, when prevention is possible, and better for the state, and only justice to the helpless and prematurely doomed to an unchosen existence worse than death? If municipalities may lawfully quarantine yellow fever and cholera, why may not, and why ought not, this greater destructive agency than plague or pestilence, which never ceases its ravages—the hereditary descent of the organically vicious and defective—be stopped by law? No pestilence that ever walked in darkness or destruction that has wasted at noonday has done greater harm to mankind than the silent, ever active destructive power of hereditary degeneracy of brain and mind. Instead of visiting punishment on the heads of

these weakened victims of entailed disease, let law go to the *fons et origo*, and stop this vicious progeny from being thrown upon a world in which they are unfitted to live.

More than a century ago Cabannis said: "As the liver secretes bile and the stomach gastric juice, so the brain secretes thought," a proposition exact enough for comparison, and as a working basis for sanitary legislation, for, though thought and mind are probably something more than secretion of the brain, mind is dependent for its every normal movement upon the integrity of the brain, and wrong and misleading thought will be evolved if the physical substratum of the mind—the human brain—gets out of order. The duty of our day is to see that, so far as practicable, we transmit to our descendents healthy brains and vigorous nervous systems, and to this end personal endeavor and municipal legislation should be invoked. A true civilization should show development and not degeneracy of brain power, and the proudest monument to our wisdom we might erect would be one of neurotic regeneracy, a richer legacy to the coming generations than railroads or telegraphs, phonographs or telephones, electric lights, or ærial navigation successfully accomplished, for without neurotic regeneracy these blessings will prove curses and promoters of still further neuropathic decay, and final extinction of mind. To enjoy these, power of the nervous system and mind should be increased, not diminished; yet in them, and the press, injudiciously used, are the seeds and elements of destruction.

Let the present generation, with all of its advancement and advantages, have a care for its strength of brain and nerve, and the brain and nerve strength of those who are to follow it.

PARETIC DEMENTIA.*

IS IT A PSYCHOSIS, A NEURO-PSYCHOSIS OR A COMPLICATION OF THE PSYCHOSES?

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

Medical Superintendent of Cook County Hospital for the Insane.

THE cases, herewith presented in tabular form, are such as came under my observation in the Cook County Hospital for the Insane, whose history could be obtained with sufficient accuracy to render them available for solution of the question raised in the preceding article:

Name.	Age.	Sex.	Color.	Early Mental State.	State at Last Observation.	Menstruation.	Complication or Origin.
C. M.....	49	F	White	Depression.	Moderate optimism	Began at Menopause	Locomotor ataxia.
B. H.....	50	F	"	"	Still depressed at intervals	Ditto.....	
F. C.....	49	F	"	"	Nearly always optimistic	Ditto.....	
C. B.....	54	F	"	"	Optimism and depression alternate	Menopause.	Locomotor ataxia
A. K.....	31	F	"	"	Depressed at intervals	Amenorrh'e since onset	with epileptiform attacks.
F. Ch...	33	F	"	"	Always optimistic..	Ditto.....	
W. K.....	30	M	"	"	Alternate.....		
M. L.....	40	M	"	"	"		
Geo. L..	43	M	"	"	"	Rlr'd injury	
O. K. S.	37	M	"	"	"		
H. Ro....	41	M	"	"	Quiet optimistic....		
C. H.....	46	M	"	"	Alternate.....		
B. E.....	73	M	"	"	Optimistic grandiose delusion		Lues complicated.
D. G. B.	47	M	"	"	Varied by furor.....		Ditto.
H. B.....	33	M	"	"	Quiet optimism ...		Ditto.
P. C.....	46	M	"	"	"		
A. D.....	34	M	"	Optimistic..	"		Lues preceded.

* In this and a succeeding series of articles it is proposed to pass in review the history, symptomatology, aetiology and pathology of this disease, with a view of determining its nosological position.

Name.	Sex.	Age.	Color.	Origin of Compli- cation.	Original Men- tal State.	State at Last Obser- vation.
F. D.....	M	35	White	.....	Depression.	Alternate depres'n and exaltation.
H. F.....	M	42	"	.....	"	Ditto.
F. G.....	M	45	"	.....	"	Ditto.
J. G.....	M	38	"	.....	"	Ditto.
C. G.....	M	47	"	Epilepsy.....	"	Ditto.
W. C. K. M	M	60	"	Senile insanity.....	"	Exalted delusions.
G. C. K. M	M	48	"	Lues preceded..	Optimism..	" "
G. P. L. M	M	58	"	.....	Depression.	Exalted delusions, furor.
P. L. M. M	M	47	"	Lues preceded and paranoia	Querulent...	Alternate exalta- tion & depres'n.
B. M. ...	M	35	"	Lues.....	Depression.	Ditto.
H. McN. M	M	37	"	.....	"	Ditto.
C. D.....	M	45	"	Locomotor ataxia	"	Ditto.
D. S.....	M	41	"	"	"	Ditto.
J. S.....	M	55	"	Myelitis.....	"	Furor.
A. P. T. M	M	60	"	.....	"	Furor & depres'n.
P. V.....	M	41	"	Lues.....	"	" "
J. W.....	M	20	Col'd	.....	"	" "

It will be observed that of these cases the majority presented at their outset depression. The ætiological features, however, likely to result in depression, which presented themselves are as follows:—

Locomotor ataxia preceded in	-	4	cases.
Lues preceded in	- - - - -	4	"
Epilepsy preceded in	- - - - -	1	"
Myelitis preceded in	- - - - -	1	"
Paranoia preceded in	- - - - -	1	"
Senile insanity preceded in	- - - - -	1	"
Railroad injury preceded in	- - - - -	1	"
Menopause preceded in	- - - - -	3	"

16 cases.

No depressing ætiological factor - 18 "

34 cases.

On inspecting the table it is observable that the special differences produced by these depressing factors are that, in cases evolving from locomotor ataxia, depression always existed at the outset; those preceded by lues were as frequently optimistic as otherwise. These figures, therefore, tend to support the views advanced as to the frequency of depression at the outset of paretic dementia.

A VINDICATION OF HISTORY.

BY THE AUTHOR OF "TWO HARD CASES."

THE October (1884) number of the *American Journal of Insanity* contained an article by the present writer on the progress in provision for the insane in this country since 1844. It was not intended to exhaust the subject, but especially to show the relation of the Association of Medical Superintendents of American Institutions for the Insane to that progress. Prepared with reference to its delivery before that body, the language was naturally somewhat different from that suited to a mere statistical compend, and an occasional metaphor was introduced which would have been out of place in a legislative or a judicial document. However faulty its rhetoric may have been, the reception of the paper at the time showed that it answered its purpose tolerably well, the subject matter excusing the delivery.

That this paper was honored in the editorial columns of the journal in which it appeared with a caveat, from the pen of the distinguished editor-in-chief, of greater length than the article in question, is probably due not so much to any merits of the paper itself—which were certainly not obvious to the reviewer—as to a glimmering consciousness in Dr. Gray's mind that, outside of anything I might have said, there was a growing sentiment with State boards and others having authority in these matters in favor of certain departures in the provision for the insane, departures which were in opposition to much that had been authoritatively enunciated by the Association in past years; that, these modern Philistines, these troublesome innovators on the good old ways, were unsettling things which had been adjudicated, that the sacred ark of "the propositions" was in danger, that it was necessary

with a strong hand to strangle this heresy within the Association at its birth.

The trouble is that the strong man has come too late :

"Oh Richard, oh my king, the world is all forsaking thee,"

is losing its faith in infallibility, and while we willingly accord to Dr. Gray the position of "giant," and allow that if Ilium could have been successfully defended, it would have been at his hands, yet as the case stands, there is something touching in seeing even this Goliah boastingly put on his armor.

Napoleon the Third prefaces his history of Julius Cæsar with the statement, "Historic truth ought to be no less sacred than religion." It does not appear that this solemn asseveration has made his own narrative any more trustworthy, but as an opening sentence it sounds well. So Dr. Gray's assertion at the outset of his diatribe that his strictures are to "vindicate history" sounds well, but unfortunately imparts no validity to his statement.

In my paper the statement is made that in 1844 there were but twenty-five hospitals for the insane within the limits of the United States and Canada, the extent of whose combined provision would hardly have exceeded three thousand inmates, so that of the seventeen thousand insane at that time living in the United States, more than four-fifths must have been left to be provided for in almshouses, in jails, in cages, and at large in the community. Is there anything incorrect in this? Dr. Gray says so; he says:

We find no evidence except the census of 1840 which was shown to be very defective to justify the statement that there were seventeen thousand insane then in America. The census of 1840 to which we refer (*Journal of Insanity*, No. 1, page 72) gave 4,333 white insane and idiots supported at public charge, 829 colored insane and idiots at public charge, and 10,192 white insane and idiots supported at private charge, and 2,103 colored insane and idiots at private charge. If there were then seventeen thousand insane, which we do not believe, there were nearly five thousand of them in the charge of hospitals.

He gives the figures of the census to prove my state-

ment and then says he does not believe it! The question is not what Dr. Gray believes, however important that may be, but what is the fact? No doubt every census of the United States until the last, that of 1880, has been defective in the enumeration of the insane, but the defect is mainly in the omissions, the number of the insane being understated. Dr. Edward Jarvis has made this very evident of the census of 1850, by his masterly study of the subject in Massachusetts. From a most thorough canvass made by the order of the State legislature, he found the number of insane persons in that State, in 1854, was 2,632, while the census of 1850 gave only 1,680. The census of 1880, whose returns were collected, collated and corrected under the careful method of Dr. Jarvis, gives the total insane of the United States as 91,997, while, according to the census of 1870, it was only 37,432. Now, no such increase had actually taken place in ten years, but the census of 1870 was defective by reason of omissions. If, then, the census of 1840, with all its defects and omissions recorded 17,457 insane and idiotic then, it is safe to conclude that the number of the insane four years later, when the population of the country had increased nearly two millions, was not less than seventeen thousand. But, says Dr. Gray, "Then there were nearly five thousand of them in hospitals." No, Dr. Gray; not in hospitals; at public charge no doubt, in almshouses, in jails, and a part in hospitals, but not five thousand. My possible limit of hospital accommodation was three thousand, and the very article from which you quote would have told you, had you chosen to look (*Journal of Insanity*, No. 1, page 88), that the actual number in the lunatic asylums of the United States was 2,561, showing the error of your statement to be about one-half, or 2,439 "nearly." But is it hardly fair to insist on accuracy in one of such varied accomplishments? If we do, we shall be disappointed.

It is pleasant to be put right on one point, where a very natural inference proved not to have been the fact.

Dr. Gray, who was present at the meeting of the superintendents when "The Farm of St. Anne," by Dr. Galt, was discussed, says that Dr. Galt "was not stoned, nor was he sawn asunder." As Dr. Gray was an eye witness and Dr. Galt was fortunately absent from the meeting, that settles it. It is a relief to know that death did not result from a metaphor. Whoever takes pains to read the proceedings of the Association at that meeting* will see that, aside from the deadly metaphor, the statement in my paper, "That the ideas of what the provision for the insane should be was regarded as authoritatively settled by the Association," was correct. Dr. Gray allows that he was the subject of criticism and attack for having, as an independent editor, presumed to publish the offending article. This censorship of the press, Dr. Workman, of Toronto—to his credit be it said—then and there rebuked, and spoke brave words regarding the architecture and perfection of the then existing hospitals, but the general tone of remark on that occasion was one of abundant self-satisfaction, and Dr. Kirkbride undoubtedly expressed the sentiment of the meeting in regard to Dr. Galt's views of farm houses for lunacy versus hospitals, when he said of such views, "It was scarcely necessary to notice them further, as this Association had long since settled them, as conclusively as they can be, by a unanimous expression of opinion." No; the soil of the Association at that time, and for many years after, was not favorable to the planting or the growth of the farm cottage system of hospitals.

In this connection of "St. Anne's Farm," Dr. Gray makes one of his strongest points when he shows that "The Government Hospital had more of a farm, in 1855, than that of St. Anne." "In 1873 this farm had reached 419 acres." This is in the Doctor's usual close style of reasoning. Because the Government Hospital had in arable lands and pleasure grounds three times the extent of territory of the entire farm of St. Anne, in France, he

* Journal of Insanity, Vol. XII., p. 42-48.

would have us infer that, therefore, Dr. Galt could learn nothing of a different system of caring for the insane at the little St. Anne Farm from what he might any day see at St. Elizabeth. *Non sequiter.*

It is noticeable that the Government Hospital for the Insane is made to do duty as a back ground to the Doctor's article throughout, like the one piece of scenery in a third class theatre; now as a cottage for agricultural lunatics; again, with an ingenious use of the estimates of the cost of a building, for which the appropriation was never made, as a cathedral in collegiate gothic; and, at the close of a political interjection to his argument, as the centre-piece in a tableau of patriotic citizens sorrowing over down-trodden Africa. The motive of the Doctor in all this is plain and is duly appreciated; none the less do I protest against so unwarranted a use of this hospital and its noble founders to buttress an argument too weak to stand alone. Had the writer for one moment supposed that all this would be considered necessary to get at him, he would willingly have come out from the castle that the buildings might have been spared!

Having stated the number of the insane within the limits of the United States, together with the number in hospitals and asylums, as given by the census of 1880, the writer said, because historic truth admitted of no other statement: "There remains a majority to be provided for, as in 1844, indiscriminately huddled in almshouses, in cages, and adrift in the community." Dr. Gray says he "cannot believe it." Why not? He has a faith that might remove mountains, if they stood in the way of the infallibility of the propositions; but the facts of the last census, so painstakingly and impartially collated, he will not believe. Statistics seem to trouble the Doctor, and not without reason, for they are the stubborn facts on which his glittering generalizations fall only to be broken. But since there is an old-fashioned prejudice which still calls for the figures, he brings those of the last report of the State Board of Charities of New York, as his measuring

line, with which to gauge the provision and the needs of this great nation! One rises from a perusal of his paper with an oppressive sense of what we all owe, under Dr. Gray, to New York. The devout Mohammedan turns five times in the twenty-four hours towards Mecca, the transcendental philosopher never ceases to give thanks to the Infinite Fitness that he was born in Boston, but it needs Dr. Gray to convince us that what exists outside of New York is hardly worth mentioning. Those of us who have our being in that outer darkness—"doubtless we are His children, though Abraham be ignorant of us,"—are expected to content ourselves with such broken fragments of information respecting the provision for the insane in that great State as the Doctor may chose to give us. More of this anon. But granting all that he claims for New York to be true, what necessity have we to infer from a part what the whole is likely to be when that whole is before us? The Doctor says "in New York we have, practically, universal care." What of that? The fact remains, that of the forty-seven States and organized Territories that make up these United States, only eleven had in 1880 hospital provision for a majority of their insane. This provision ranged from more than ninety to a little above fifty per cent.* The rest had hospital provision for their insane varying from a little below fifty per cent. to absolutely none. There were 417 in jails, and 9,302 in almshouses, having no insane department—indiscriminately huddled—these being nearly one-fourth of the entire number provided for in hospitals and asylums, and the number of that class, 40,942, was actually exceeded by the number, 41,101, reported as "at home"—practically at large in the community.† Despite then, the ingenious arguments of Dr. Gray to show that a part is greater than the whole, and his Pharisaic assumption that "whatever may

* These were in the following order: District of Columbia, California, Montana Ter., Oregon, New Jersey, Washington Ter. Minnesota, Massachusetts, Rhode Island, New York and Kentucky.

† For the above facts, see Compendium Tenth U. S. Census, part II., page 1678.

be said of other States, the insane of the State of New York have now universal care," together with his unwarrantable deduction therefrom in regard to the rest of the United States, the verdict must stand, that a majority of our insane are still outside of hospital shelter, and that "thus far only have we come with our progress in provision in forty years."

The Doctor's New York studies are ingenious rather than ingenuous; he is familiar with that State's provision for her insane; he is at home at Albany—probably no man has followed its legislation closer—and if he chose he could give us history that would be very interesting reading. As it is, the pictures he presents are noticeable for their coloring rather than their fidelity; assumptions are made to do duty as facts, and when facts are employed they are apt to be fearfully overworked. Like the early panoramas, his show entertains rather than instructs, and his combination of fact and fancy becomes hopelessly bewildering when our genial showman fails to point out to us which is Daniel and which is the lion.

Such confusion of the facts about New York was unnecessary. The Empire State is justly proud of her record, can afford to abide by it and asks none of Dr. Gray's glossing commentary. Quoting from the Report of the State Board of Charities of New York for 1884, he gives the total number of insane in institutions of all kinds as 11,343. This is the fact in his statement, the assumption in it is that this number represents the entire insane population of New York, an assumption which nobody believes, not even the Doctor himself, although he adroitly says it is "her full share," and again, "we have universal care." If by universal care he means the Providence that is over the sparrow, no one will dispute him; but if he means that the State now makes universal provision for her insane, then this must be characterized as one of Dr. Gray's facts that has been broken down by overwork.

According to the census of 1880, New York at that

date had 14,111 insane. Assuming the annual rate of increase to be only 500, the whole number in 1884 would be 15,611.* Deducting 553, which Dr. Gray admits were in almshouses with no distinct provision for the insane, from the 11,343 in public institutions in 1884, there would remain not quite seventy per cent. under some form of hospital or asylum care. Seventy per cent., though creditable to the State, is not "universal care." The figures quoted by the Doctor further show that less than one-fourth of the total insane were provided for in institutions belonging to the State, and eliminating the distinct asylums for the chronic insane at Willard and Binghampton—a provision so unanimously rejected by the Association in 1866—there remains less than twelve per cent. under care in the State general hospitals for the insane. Less than twelve per cent.! The character of the provision made in the city asylums and county almshouses is not being questioned here, but the figures are instructive, a lesson wholesome and chastening alike to State and to individual pride, showing how little after all the noble pile at Utica and the lavish expenditure in building the cathedral structures at Poughkeepsie and Buffalo and at Middletown availed as a provision for the great mass of the insane of New York.

There was no attempt to rob the Superintendents of the Poor of New York of their well-earned laurels, gained by giving utterance as early as 1855 to the noble sentiment, that "a State should make suitable provision for all its insane."† This was adopted by the Association in 1866, and knowing that there was nothing new or original in putting it forth at that time, I characterized the action of the Association as an "enunciation of principles, a favorite method of progression with us." No where in

* I know of no data giving the actual annual increase of the insane in New York since 1850, but in the adjoining State of Massachusetts, with a population but little more than one-third that of the State of New York, there is an annual increment of 300. See 5th Annual Report State Board of Health, Lunacy and Charity, of Mass., 1884, page lxxxv.

† It is a matter of historic interest that these resolutions passed by the Superintendents of the Poor in 1855, were from the pen of Dr. John B. Chapin, at least the most of them.

my paper is it hinted that the States had not in more than one instance prior to 1866, in providing for their insane, made larger accommodations in individual hospitals than the propositions of the Association sanctioned. The awakening of '66, over which the Doctor is so merry, was that of the Association as a body; the people were awake to the necessities of the situation long before. Individual members of the Association were awake—Dr. Gray gives us to understand that he was, and as an "individual" assisted at the Convention of the Superintendents of the Poor at Syracuse and at Utica in 1855, and he intimates that the sentiment then aroused "was the origin of the Willard Asylum." If that was so, then it was an oversight that his name was not mentioned with those of Drs. Cook and Chapin in my reference to what they did at Willard. But as the Convention of the Superintendents of the Poor in 1855 passed this resolution, "That insane persons considered curable and those supposed incurable should not be provided for in separate establishments," and the Willard Asylum was projected some ten years later to afford just that separate provision for the chronic insane, I think the statement that the Convention of 1855 originated that asylum will have to be classed as one of Dr. Gray's overworked facts.

Historically the matter stands in this wise: The movement in New York in 1855 resulted in the erection of the Auburn Asylum for Convict and Criminal Insane, and a bill before the legislature for the erection of two additional asylums which failed of passage, and there the matter rested. The movement in 1864 began with a resolution passed by the State Medical Society calling the attention of the legislature to the state of the poor-houses of New York. The movements of 1855 and of 1864 were both in the State of New York, and this was the only connection between them; one was in no sense an outgrowth of the other, except that one followed the other in point of time and both had relation to the condition of the insane.

There are associated with notable epochs in the world's progress some names that fall out and are forgotten from history, while others, perchance no worthier, are held in grateful remembrance; for Sir Thomas Browne says truly, "The iniquity of oblivion *blindly* scattereth her poppy." Many noble and true men took part in the movement of 1864, in behalf of the insane in the New York poorhouses which resulted in the asylum at Willard, among whom Dr. Gray very justly recalls Judge Folger and others, but whatever may have been their merits, and there is no wish to underrate them, the fact remains that the names which history will ever associate with the founding of Willard will be those of Drs. Cook and Chapin. And in this she will not be far from right, for these men, together with Dr. Gray, were consulted by Dr. Willard at the outset of his investigation, and rendered him efficient aid, bringing to the work no doubtful support, but whole-hearted service. It will be remembered of these two men that in the Association of Superintendents, in the midst of a fierce opposition, they stood almost alone, urging the claims of present necessity, calling like the man of Macedonia to come over and help them, but calling in vain! Then it will be remembered to their honor that these men stepping outside of what the Association, as a body had decided to be the only provision they could sanction—that or none—did as individuals precisely what we should expect as Christian philanthropists they would do, accepted the provision which the State of New York had decided to attempt for her chronic insane, and gathering in these poor, neglected ones from the wretched dens where they were hidden, like Good Samaritans, did personally what they could, working with their might to carry forward the good work, albeit this were only asylum care, to an established success. Is it any wonder that history gratefully remembers them?

Dr. Gray in this connection delicately suggests an omission in my paper to which allusion has already been made. In his criticism the Doctor brings out the fact

that he was chairman of the commission to locate and give a plan for the Willard Asylum, and I have stated that Dr. Willard consulted him prior to his own report in 1864. If we add to this, service with the Superintendents of the Poor in 1855, I think the Doctor has established his claim to be regarded as one of the founders of Willard, and as I prefer being right to being consistent, with the Doctor's approval, I will now make the correction, prefixing his name to the list so that it will stand Gray, Cook, Chapin. But my memorial is a very temporary scroll at best, and what history will consent to do I cannot undertake to determine. History catches only the outlines, and possibly the shadow cast upon her page will be that of a grim stepmother dry-nursing a child pronounced illegitimate by the Association; this even though the Doctor assures us that "there was no croaking and coldness and opposition."*

The question of the provision for the chronic insane poor of New York was a mere episode, and I entered into no discussion of its merits or demerits as a system, although Dr. Gray, treating it as if it was the main topic of the paper, devotes a large number of pages to the question. I nowhere defended the system of separate provision for the chronic insane. I did recognize the fact that the question of their separate care had been agitated elsewhere than in New York, and referred to the remarks of Dr. Butler of Hartford, Conn., before the Association in 1865, to indicate this. The gratuitous assumption of the Doctor, without a particle of evidence in the contest to show this, that I supposed Dr. Butler was talking about New York, only indicates the peculiarity of Dr. Gray's mind already mentioned. Apparently some

"Pent up Utica contracts his powers,"

until the State of New York becomes his universe.

* For the other view of this question see *Journal of Insanity*, Vol. XXII., pages 192-212, although perhaps the approach to the entrance of Dante's *Inferno* (p. 201) may imply warmth rather than "coldness." Vol. XXIV., pages 288-336. Also other volumes of same journal. Also the recollections of living Superintendents who are old enough to have been participators in the discussions of twenty years ago.

All the more therefore it behooves him to be certain of his facts about that State when he assumes the character of censor and vindicator of history. Still eulogizing the resolutions of the Superintendents of the Poor at their Convention in 1855, at which he assisted as an individual, he says:

This was in 1855, not in 1866. Such derogatory language as Dr. Godding has used was not applicable to New York in 1866 if it ever had been, and we cannot permit such perversion of history in a memorial service to go out to the world uncontradicted.

Noble sentiment; but what are the facts? The Willard Asylum was not opened for the reception of the chronic insane from the almshouses and the community at large until 1869, nor was any provision made for them elsewhere. On the 13th of January, 1865, Dr. Sylvester Willard, Secretary of the Medical Society of the State of New York, who had been empowered by the legislature of the State to investigate the condition of the insane poor in the county poorhouses of New York, made his report to the Assembly. The language of Dr. Gray, quoted above, renders it necessary for me, in my own vindication, to reprint from that report extracts that I had far rather would sleep in the archives to which they have been consigned, now that the horrors which they depicted no longer exist, but this vindicator of history has left me no choice in the matter.

The report of the condition of the insane in each county was made by a physician appointed for that purpose by the county judge, so that the language in each case is that of a disinterested medical man. The extracts given are from the printed official report, and whenever italics, capital letters or exclamation points are given, they are present in the official copy of the report.

Albany County:

The asylum *was built to accommodate thirty-one* lunatics. There are in confinement at the present time in this space designed only for *thirty-one*, ONE HUNDRED AND THREE. The greatest number in confinement at any one time was ONE HUNDRED AND TWENTY, designed to accommodate *thirty-one!* the almshouse asylum of the capital, of Albany!!!

Alleghany County :

The old block-house in which some insane are confined, occupied in part by idiots, is in a very bad condition with no ventilation, old, rotten and filthy, and entirely inadequate for the purposes for which it is used.

Broome County :

Four males and two females are destructive to their clothing, and four males and one female are in constant restraint, by handcuffs or otherwise. The other forms of restraint are persuasion and confinement. *Whipping is seldom resorted to.* * * * * Six sleep on straw without beds or bedsteads; the straw is changed once a week.

Cortland County :

The violent cases are kept in cells in a building off from the main building. In one ward ten are constantly confined. The sexes are not kept entirely separated, and male attendants are employed to care for female insane. The atmosphere in the rooms is generally unwholesome. At this institution recent cases are received!

Delaware County :

A hall runs on each side of the building, and in the middle is located the cells (after the style of a prison,) which are 4x8 feet square, made of rough material, the doors are made of rough hard-wood plank, three inches thick, with a diamond hole in them 7x9 inches, *which is the only source of light and air!* Beds are on the floor, with nothing to separate them from where they sit, except a piece of plank set up edgewise, and indeed the whole construction is a stigma on humanity. In apartments thus dark, and cold in winter and filthy at all times, more gloomy than prisons, twenty-six insane human beings are kept. * * * * And this institution continues to receive recent cases!

Franklin County :

There is a spring of water near by, from which the building is supplied, but the insane are not required to bathe, or even to wash their hands and face, except when they see fit to do it themselves. * * * Two or three sleep on straw without other bedding; the straw is changed once a month. * * * In the day time the sexes mix as they please, and receive their only care from the sane paupers. The rooms were "not cleanly," and the atmosphere was "bad enough," and the keeper said that vermin were "somewhat plentiful." They have no changes of undergarments.

Madison County :

The house has no bathing tub, the insane are not even required to bathe at all, and the violent insane not even to wash their hands and face. It is idle to describe the building, it is heart-sickening to describe what is in it. * * * * The only care they receive is from the hands of incompetent paupers. Those confined in the cells are extremely filthy, most of them not using vessels, and their excrements are mixed

with the straw on which they lie. Their straw is changed only once in a week; and these lunatics, with their bodies besmeared with their own excrements, not allowed to come daily to the open air, eating in the same filthy apartments, are not washed from one year's end to another. The cells in which they are confined are only 4x6 feet with a ceiling of seven feet, and open into a hall, so that they can have no ventilation.

St. Lawrence County:

It is an old wood building, three-stories high, the ceilings being 8½, 8 and 7 feet respectively, with rooms 12x12 and 8x12, and cages 3 feet by 7 and 5x10, with small windows opening out of doors, but the cells have no such window. The building is not supplied with sufficient water, nor has it any provision for bathing. * * * Those who cannot work have neither occupation nor amusement, and though no restraint is used by handcuffs, whipping is resorted to, and the violent are put in cages to subdue them. * * * At night ten are confined in a single cell. The sexes are not separated but mingle promiscuously, and the attendants are from the family of paupers, who are grossly unfit to administer to them.

This is not all, but it is more than enough, and sad enough. Of this state of things in 1864, Dr. Willard in 1865 said officially:

The investigation shows gross want of provision for the common necessities of physical health and comfort in a large majority of the poor-houses where pauper lunatics are kept. * * * In some of these buildings the insane are kept in cages and cells, dark and prison-like, as if they were convicts, instead of the life-weary, deprived of reason. They are in numerous instances left to sleep on straw like animals, without other bedding, and there are scores who endure the piercing cold and frost of winter without either shoes or stockings being provided for them—they are pauper lunatics, and shut out from the charity of the world where they could at least beg shoes. Insane, in a narrow cell, perhaps without clothing, sleeping on straw or in a bunk, receiving air, and light, and warmth, only through a diamond hole through a rough prison-like door, bereft of sympathy and of social life, except it be with a fellow lunatic, without a cheering influence, or a bright hope of the future! Can any picture be more dismal, and yet it is not overdrawn.

Looking on the same picture of wretchedness I said in my memorial, that they "found the chronic insane that the hospitals had cast forth to make room for recent, curable cases, lying with others whom hospital care had never reached, wounded and bleeding by the wayside, forgotten in almshouses, festering in cages, loathsome with neglect, ready to say with Job: 'To corruption, thou art my father; to the worm, thou art my mother and my sister.'"

Dr. Gray says in his caveat, "Such derogatory language as Dr. Godding has used was not applicable to New York in 1866, if it ever had been, and we cannot permit such perversion of history in a memorial service to go out to the world uncontradicted."

You have the language of the statement, the facts are before you, and who has deliberately falsified history the reader must decide. But he who pursues the *ignis-fatui* is hopelessly lost in the bog at last, and I must be excused from following further the Doctor's criticism of what I did *not* say, in order that I may in a brief statement attempt to disentangle the line of thought which he seems to have either quite misapprehended or purposely chosen to misrepresent.

With honest purpose and kindly intent, whatever my words can be made to imply, I did recognize, after my feeble fashion, the great, the enduring, the noble work of the fathers in their provision for the insane. The attempt was made to show to how great an extent the progress in provision of the first era depended upon the carefully considered ideas of construction embodied in the propositions of 1851, and known as the Kirkbride plan; moreover how admirably this plan was adapted to the needs of a limited number of the insane. It was also shown, because this too was a matter of history, how gradually the increase of insanity and the limited accommodations afforded by the State hospitals, built under this plan, resulted in a large majority of the insane being left without suitable care. How propositions that were a help in the first instance, being adhered to as authoritative dogmas enunciated by the Association, came to act as a bar to real progress by reason of their limitations. How the practical result remained that, whatever might be the theoretical possibilities, in no State was public sentiment educated up to the point of providing hospitals built on the basis of the propositions fast enough to relieve the wants of the insane within that State. Hence sprang the question of a separate provision for the chronic insane,

and the agitation of this as against liberal provision for the few and almshouse neglect for the many, brought about an era of enlarged accommodation in palatial structures built on the Kirkbride plan greatly extended, for which in the paucity of my vocabulary I could find no better name than the cathedrals of lunacy. The rapidity with which this era culminated and declined was due to the exhaustion of the resources of the taxpayers without attaining the universal provision hoped. The provision was good as far as it went, but cost too much.

And before leaving it I did not fail to acknowledge how much we owe to the noble men and women in all the past for the work they did and the monuments they have left us. That Miss Dix was not mentioned by name for effusive gush, those who know her best will understand the reason. When we sit in sunshine it is not necessary to call attention to the light. Miss Dix's labors for the insane ante-date in their inception by more than ten years the organization of our Association, and her triumphal progress from State to State, speaking hospitals into existence, was outside of our poor propositions, and for its fame depends not on our sufferance, asks not our comment, and neither Dr. Gray nor the writer can add to or detract from its merit by our fulsome eulogy.

And then I turned from what was accomplished and completed to the hopes in the dawning of a new era not yet finished, when hospitals no longer limited in numbers, or restricted to one plan more than a generation outgrown, might by simple structures as detached wards, buildings suited to varying conditions of life and disease, by common dining halls, by departures in arrangement, by less expenditure for gratings than for roses suggesting homes more than prisons, with the support of a discriminating and judicious charity that never faileth, at last to make provision for all the insane. Yet not claiming, only hoping it. And so, granting much, asking something, hoping more, the memorial ended. As Dr. Gray most pertinently asks, "Is all this new which Dr. Godding has

said?" No, nothing new, only the old truths with which we were all familiar, and not too plainly dressed in their Quaker garb even for that holiday occasion. Intended as home truths with a lesson for every day, I am glad the Doctor takes their lesson so much to heart. The good man may have gone wrong in being a little rough on me :

"O, it is excellent
To have a giant's strength, but it is tyrannous
To use it as a giant."

To ridicule an argument is not necessarily to answer it. It is a mistake to think that eminent dignity can put back the progress of events by simply standing still, and to suppose that ponderosity of character alone will outweigh established facts, is no less absurd than to imagine that true greatness consists in mere avoirdupois.

Borderland Psychiatric Records, Continued.

PSYCHICAL CONCUSSION AND PERVERSION OF THE SELF-SENSE—ABERRATIONS OF SENSATION ASSOCIATED WITH PROBABLE LESION OF THE SYMPATHETIC SYSTEM.

BY THE EDITOR.

THAT there is a self-sense the writer is prepared, if the statement is gainsaid, to prove at another time, but not now. That sensory nervous filaments are associated with the ganglionic system in various parts of the body the reader as well as the writer are aware, and that there is a psychical concussion in which the intellectual area of the cerebral cortex shows the suffering of the sympathetic system, the melancholias of sudden shock, and other recognized forms of insanity prove, as well as the sudden insanity in somnic form and the post neuralgic mental aberration which have fallen under the writer's observations, but which lack of time forbids him to describe, abundantly prove.

The following description shows a state of nerve disturbance not altogether unfamiliar to the writer, but which he has not seen described. The case may be grouped with the Borderland Psychiatric Records published in *THE ALIENIST AND NEUROLOGIST*, for January, 1884:

December 27th, 1883.

DR. C. H. HUGHES—Dear Sir:—Four years ago and more, I endured a long siege of watching, nursing, anxiety and fatigue, succeeded by great and uncontrollable grief in the loss of my husband. In three or four days afterward I experienced a most sudden and violent change or revolution, a complete breaking up or giving way of the whole nervous system or inner man, and since that dark and sad hour I have never had a natural feeling or sensation. Everything is wrong, the whole sympathetic system

seems completely paralyzed. Every feeling and sensation that make life is completely annihilated. I have not even the common sensations of hunger, thirst, or any sensation whatever of sleep. All is gone, and every act of my life is now purely mechanical. I, of course, take food, and sometimes have a kind of sleep, but entirely devoid of sensation or desire, and therefore painfully mechanical. My mind calls up every act, thought, or word of the past, and most cruelly tortures me for every failure or imperfection. It would be perfectly impossible to describe my singularly strange and insupportably torturous mental condition. Oh! it is a living death—all this combined with the darkest and deepest melancholia, but oh! it is more—far more than melancholia. There is a most dreadful and continual singing noise in my head, as of ten thousand insects at a distance, and then another noise as though a popping was going on in my head, this is *not* continual. My bowels move, but the actions are unnatural, and possess little or no odor. My kidneys move right often and but little at a time, and that little seems full of strong salt, so much so, as to stiffen my linen like starch. Dr. S—— told me I had diabetes also. No medicines have ever seemed to have any effect. I am 49 years old, and had just entered upon a “change of life” when all of these troubles came upon me.

Mrs. C——

“In a similar state of feeling, nine months later, the same patient wrote to the accomplished medical superintendent of one of our State hospitals for the insane, who kindly referred the letter to me for my opinion.

We here give the conclusion of the letter, the omitted pages being a repetition of the history already given:

Oh! I cannot tell you how I have borne it so long—this is the strangest part of it all when it seems utterly impossible to endure the moments as they come. Oh! I have wept and prayed and importuned my Heavenly Father to let kind death relieve me, but no answer comes and every day is but a repetition of the past, for nothing breaks the awful monotony. My tears are like rivers and my prayers are continual and importunate. There is the most startling horror on my soul, and when I would end my sufferings death startles me. Any death would be more welcome than this existence. Food nor sleep do

not seem to be essential to such an existence. When I take neither, I get along as well as when I have a little of each. I cannot engage in any of the duties or pleasures of life. I cannot have one moment's relief from my anguish, consequently cannot read, nor see, nor converse with a friend, nor with my own, dear, devoted children. There is a most terrible ringing and popping noise in my head; as of a thousand insects at a little distance. It never ceases for a moment, and a tremor is felt over the whole system. My trouble seems to originate in the head. My brain is so disturbed, and my head feels like a tight bandage was tied around it. When I lie down on the bed, I feel like I press it so hard, as though I would go through it.

Nothing has ever been done for me that has amounted to anything. Many suggestions have been made, but to no good. We have done the best we could and all we knew, but nothing has had any effect. The food I take does not seem to be taken up by the system, nor does it assimilate, nor so much as have odor.

I write to you for advice and counsel, for I am growing very feeble. Have you ever treated such a case? And do they ever yield to treatment? Can I ever hope to be natural again? Could you do anything for me, and if so, what would it cost me? Please let me have your best counsel and advice, and let me hear immediately. I have a large circle of friends and acquaintances and can give you references.

Mrs. C——

This patient should be under the care of a well regulated asylum, or in the hands of a physician in whom psychical influence and skill are so blended as to reinspire her with confidence and hope, and direct her mind from morbid introspection and foreboding. Her present home and surroundings are not the proper place for her. General practitioners who try to treat such cases as these at their own homes, will have only failure for their pains. In intensified form they are quite familiar to insane asylum physicians, and the best term by which to designate them is psychical concussion and sensory aberration.

A Case Record in Forensic Psychiatry.

JOHN B. HOFFMANN:

*ARRAIGNED FOR THE MURDER OF HIS SON, JANUARY 12th,
1883, FOUND GUILTY AND SENTENCED TO
HANG, JUNE, 1884.*

By H. ILLOWAY, M. D., Cincinnati.

THE defense was insanity. As related in the history that follows, the lawyers who had charge of the case at first, did not try it; two others were appointed. From some cause or other the most important facts, the hallucination of long standing and other peculiarities and incidents, the fact that a sister of the prisoner is an inmate of an asylum, were not brought out at all. It is not my purpose to refer to the legal side of the case; it was, however, necessary to say what I have said above that the reader may understand why he finds such statements here, as "persons here who knew the parents well state." "I have been informed by a responsible party," &c., instead of testimony taken in court. I was called for the defense and testified that the prisoner was insane, an hallucinated person, or to speak with the older psychiatrists, a monomaniac. As some other physicians (without an examination of the prisoner) testified to the contrary. I deem it my duty to make public the grounds for my testimony.

The law of Ohio provides as follows:—

"When the attorney of a person indicted for an offense suggests to the Court in which the indictment is pending, at any time before sentence, that such person is not then sane and a certificate of a respectable physician to the same effect is presented to the Court, the Court

“shall order a jury to be impaneled to try whether or
 “not the accused is sane at the time of such impanel-
 “ment, etc.—*Revised Statutes of Ohio, 1880, Chap. V., Sec.*
7240.

Some time in February, 1884, I was requested by the attorneys of John B. Hoffmann, who then had charge of the case by appointment of the Court, to examine into the condition of the above-mentioned prisoner.

John B. Hoffmann is sixty-two years of age, a clothing cutter by profession. He is about five feet six inches in height; very spare in flesh; his face rather small and thin; hair turning gray, beard also. No evidence of alcoholic excesses (perhaps due to forced abstinence by long imprisonment). In good health at present.

Since his confinement in jail he has been ill twice, and was sent on both occasions to the Cincinnati Hospital. The following letter from Prof. Jos. Eichberg, M. D., explains his condition at that time:—

CINCINNATI, July 23, 1884.

DEAR DR.—In answer to your note of yesterday, would say that John B. Hoffmann was treated for scurvy at the Cincinnati Hospital on two successive occasions. He was at the time of his first admission suffering from melancholia, but did not receive any treatment except general tonics, mouth wash, etc, to relieve the local symptoms.

Very Respectfully Yours,

JOSEPH EICHBERG.

The subject uppermost in his mind is his trouble. He is very depressed, weeps while relating his griefs and looks upon himself as a much injured man. In speaking of his trouble he declares openly that he murdered the young man. No attempt at palliation; no effort to make believe that he was, or is, out of his mind, or that he was, at the time, laboring under the influence of alcohol. The reason he assigns for killing the young man, and which it seems is to him all sufficient and gave him the right of disposing of the young man's life, is, that he was a bastard. “I killed him; I could not help it; he was not my son; he was a bastard,” is his extenuation.

This is his history as related by him; a story of his life in America:

He was an honest, hardworking man in New Orleans, (whither he emigrated from Germany, and the place where his troubles began back in the fifties,) a tailor by occupation. He had a little shop and worked hard day and night to support his wife and child. A Frenchman by the name of Dobieu, a man of philanthropic instincts who lived opposite to him and had taken an interest in him on account of his hard work, his steadiness and his probity, out of pure human kindness supplied him with funds and thereby enabled him to open a fine merchant tailoring establishment. He did a good business, was prosperous and happy. By chance he one day became acquainted with a countryman of his, a fellow by the name of Kirchner. He invited him to his home and fed him and treated him well. After a time it became rumored about that his wife was unduly intimate with Kirchner, and neighbors and friends would ask him what was going on at his house. For the sake of his newly established business, which was flourishing, he paid no attention to the rumors and kept his peace.

Thus time rolled on. About five years after he had first introduced Kirchner into his house, a friend of his, a physician, Dr. Hegewish, asked him how it happened that every day, in the early morning hours, a man left his house. As he occupied but two rooms he supposed he knew what was going on therein, and therefore denied that such a thing occurred. But his friend insisted upon the truth of his assertion, and suggested that perhaps his wife gave him something to smell that rendered him unconscious. This, with the rumors that had been coming to his ears, with the frequent inquiries of neighbors into his family matters, made such a strong impression upon him that he determined to investigate. Accordingly that night before retiring he stuffed his nostrils, unobserved by his wife, with bread crumbs, so as to preclude the possibility of his inhaling anything. He remained awake and

watchful though pretending to sleep. Late in the night towards eleven o'clock, he observed his wife take a bottle containing a clear fluid from under her pillow and hold it to his nose. Soon thereafter the paramour came in; his wife set out a bountiful supper and they ate and were very merry. Once the lover asked whether he, Hoffmann, was asleep, and the wife with a merry laugh replied "that chap is fast asleep." Having enjoyed themselves, they undressed and retired together to the same bed in which he, Hoffmann, was lying. Then he roused up, made a terrible scene and the paramour fled in haste. He now tried to get possession of the bottle containing the inhaling fluid, but in the struggle for it between him and his wife, it was broken. The next morning he wanted his wife to leave him, he would take care of the children, but she would not. In spite of all his warnings and threats to leave her, she kept up her illicit relations with Kirchner, and learning that he would come in for some money from some relatives in Europe, she went through the form of a marriage ceremony with him. Later on Kirchner died and she claimed his European inheritance, sending out documents representing her as his wife. Two of her neighbors, women, discovered the fraud and threatened to inform on her, and she bribed them into silence by giving them one thousand dollars apiece. She claimed that he, Hoffmann, was the cause of Kirchner's death, or had perhaps killed him, and threatened that she would repay him therefore, at some time or other.

She had all of his (Hoffmann's) money, twelve thousand dollars earned by hard and steady work, and carried it around with her in her bosom.

Matters went from bad to worse with him in New Orleans; his business was broken up, his peace destroyed and he concluded to remove to New York. In May, 1863, he left New Orleans and went to New York. Not finding work there, he left with his family for Cincinnati. At Bellefontaine, Ohio, his money gave out and he could

get no further; accidentally he met a countryman, borrowed five dollars of him and proceeded on his way to Cincinnati. His wife knew at the time that he was out of money, and, though she had four thousand dollars of his hard earned money with her, she would not give him a cent to help him along.

He came to Cincinnati in 1864, and found work at good wages, and supported his family handsomely. He was here but a short time when the same troubles, that had driven him from New Orleans, arose. His wife prostituted herself again and carried on so shamefully that the people with whom he lived (and he refers to persons now living) asked him what was going on in his part of the house. His wife would take a pillow out into the hallway and there carry on her shameful orgies, her par-amours, two and three at a time, coming to her through the skylight over the hall. They would help each other down. She infected him with a venereal disease, and Dr. Fishburn (a highly-respected physician of this city) treated him and cured him of it. She attempted to poison him. One evening coming home from work he found prepared for his supper a dish (*blutwurst und sauerkraut*) of which he was particularly fond. Soon after eating he was seized with violent cramps and vomiting. He sent for his physician Dr. Fishburn. The doctor prescribed for him, and in going down said to a lady (now living), who then lived in the same house, "there must be something wrong in Hoffmann's family; he is in a very bad condition." He recovered, however, and subsequently his wife confessed that she had poisoned him with oxalic acid.

In the year 1878, in the month of May, he made an attempt upon the life of his wife with a revolver. His oldest son, who interfered to prevent the murder, was accidentally shot and died. He deplors the death of this son, who was his own flesh and blood, and weeps at the recollection of the tragedy. This, his oldest son, was a good boy and always treated him well. He relates that in 1878

he had attempted suicide by hanging, but was cut down before life was extinct. "I wish they had not interfered with me then and I would not be in my present trouble now."

In 1880 he left his family altogether, wandered about the country, working now here now there, and gradually drifted down as far as New Orleans. He returned from New Orleans and shortly thereafter murdered his second son, Kirchner's bastard as he calls him, as related above.

* * * * *

This story as related by Hoffmann is singularly connected and is told by him in such a plain, unvarnished manner, with such deep feeling that the listener is greatly moved thereby. It is the recital of a martyrdom.

And still there is not an iota of truth in the whole story. Sworn testimony taken in New Orleans expressly contradicts his statement as to what occurred there. He never had a merchant tailoring establishment. The philanthropic Frenchman like Manso, the guardian angel of Tasso, is only a creature of his imagination. He never had any wealth; he never *even* had a large sum of money. The incidents said to have occurred in Cincinnati are equally imaginary. No such thing, as he relates, occurred in his house; this is testified to by his co-tenants, and the very persons to whom he himself refers. He was never infected with any venereal disease, so far as Dr. Fishburn can recollect. The Doctor is positive he never treated him for any such ailment; he is equally certain that he never treated Hoffmann for poisoning, and therefore did not say what is attributed to him by Hoffmann as mentioned above.

His wife is a very plain looking, hard-working woman, to whom this world has been a vale of tears. Her griefs have left their indelible impress upon her countenance. Her character is the very best, as is testified to by people who have known her for years as co-tenants of the same house, neighbors and friends. She has worked hard, day and night, to raise her family, to clothe them, to feed

them and to educate them. And she has raised them well; they are praised as good children. She has paid all the expenses of the family, and owes no person anything; even when her husband left her and went away she paid his debts contracted to that day. The greatest burden she has had to bear have been the vagaries of her husband.

As to him, Hoffmann, the testimony is rather conflicting. Some who knew him well describe him as a shiftless sort of a fellow addicted to drink, and using up all his earnings for this purpose. Others say quite differently. One witness in particular, a gentleman, an artist, informed me that he had frequently met Hoffmann previous to the year 1876 in the evenings at some beer saloon; that they conversed frequently upon many topics, and that he, Hoffmann, seemed to be a very well-informed person. In 1876 the artist went to Europe and was gone for some years. When he again saw Hoffmann he found him greatly changed; he was now shiftless, addicted to drink and rather irrational in his talk.

At places where he worked as cutter he was regarded as "cranky." Meeting accidentally a gentleman in whose employ Hoffmann had been some years ago, I asked him, casually, whether he recollected ever having a man by the name of Hoffmann in his employ. "What!" he answered, "that crazy man?" And then related a rather peculiar act of his in connection with his employment. Various other queer doings of his, in different places where he worked, are related of him by fellow-workman.

* * * * *

From the foregoing it is clearly seen that the man labors under an hallucination—his wife's supposed infidelity and her retention of his imaginary wealth. This hallucination has gradually grown upon him and waxed stronger. The enmity and bad feeling thereby engendered towards his wife would, in the natural course of events, extend to the children, or to any one particular child, if the child or children sided with the mother. In

this particular case the son had always sided with the mother, and on one occasion ordered Hoffmann out of the house.

The idea of his wealth was a fixed one with him. He abandoned his wife because she was unfaithful; but his money, his hard earned savings, which his dishonored wife carried around with her in her bosom, this he must have, and he made one last effort to obtain it peaceably. Shortly after his return from New Orleans he called upon Mr. H. Goebel, an attorney,* with whom he was well acquainted, and asked him to go to his (Hoffmann's) wife and demand of her, and make her surrender his money—seven thousand dollars. The lawyer paid no attention to the matter, knowing, as he says, that "Hoffmann never had any money." Hoffmann called on the lawyer several times reiterating his request, but seeing that the latter would do nothing for him he ceased coming. Mr. Goebel also states that he intended to inform Mrs. Hoffmann to *be on her guard* as Hoffmann had returned, but from some cause or other he neglected to do so. A few days thereafter the killing occurred.

The culmination of all this imaginary suffering, these wrongs inflicted upon him, and lastly what perhaps had greatest weight with him and affected him mostly, the retention of his money which he had made a last effort to obtain peaceably, was a *delirium*, a delirium of persecution, and in the natural order of things there remained but two alternatives: suicide or murder. He committed the murder.

In judging of a person's sanity or insanity, there is one point that is of the greatest importance and is of great aid in arriving at an opinion, and that is the family history.

What is the family history of the prisoner? By authentic documentary evidence from the authorities of his native town, wherein his parents lived and where he was born, it is officially certified that his father was of

* The present Republican Candidate for Probate Judge

decidedly irritable temperament, flying into an uncontrollable passion on the slightest provocation. His brother's character was like that of his father.

In the prisoner these characteristics were exaggerated to a high degree. Already in his early youth he was very nervous, very irritable, and over a trifle that displeased him he would go into such a rage and fury that, oblivious of his surroundings and of all consequences, he would do the utmost.

Persons here who knew his parents well, state that the father and mother were both eccentric, and were known all around the district as the "crazy Hoffmanns."

One sister, as I have been informed by a responsible party, is completely demented, and has been confined in an asylum in this country for the last thirty years.

Here we have clearly shown the seed that have borne such bitter fruit. The neurotic temperament in his family is demonstrated. His father, though not insane, was no doubt on the verge of it. Prof. Ball (the eminent French psychologist,) in a lecture on the "Frontiers of Folly,"* calls eccentrics semi-alienated. In his sister the hereditary taint reached its climax in complete dementia. He, the prisoner, is hallucinated. Therefore, in this case, there can be no question of his insanity. He is a monomaniac.

In the lecture above quoted, speaking of hallucinated persons, Prof. Ball says :

Without doubt in the majority of cases the hallucinations are only a symptom of the mental malady that dominates the situation, but it happens sometimes, it happens frequently, that these sensorial troubles become the cardinal points of the insanity, the real source of the delirious conceptions. The patient thus becomes insane because he was subject to hallucinations.

In the new hand-book of mental diseases by Dr. Bra,† in the chapter on hallucinations the author says: "The hallucinated form a class of *very dangerous patients*. Treating of the duration of the malady, he says: "The duration

* La Tribune Medicale (Paris), No. 755, 1883; "Les Frontieres de la Folie," Cours de M. Ball.

† Manuel des Maladies Mentales, par Dr. Marie Bra, Ancien Interne, St. Anne, Paris 1883.

of hallucinatory troubles is, in the great majority of cases co-equal to the existence of the life of the individual—the prognosis is, therefore, certainly an unfavorably one.” Further on in the chapter on treatment it is stated: “It is of the greatest importance to surround the hallucinated patients with the most rigid surveillance so as to prevent any attempts at *suicide* or *homicide*. Generally the time comes when incarceration in an asylum becomes an absolute necessity.”

* * * * *

In accordance with the results of my examination of the case and the argument thereto appended, I certified to the court. Meanwhile, a storm passed over our city, the court-house was burned and many things were changed. The lawyers who had been first appointed to the case went out of it and two others were appointed, and he was tried under the indictment for murder. For the reasons already given, which I believe are ample and supported by good authority, I testified in court that John B. Hoffmann is insane.

I believe he is incurably insane and should be placed in confinement for the period of his natural life.

A P P E N D I X .

After his trial and condemnation I visited him again, July 21st. His demeanor was more cheerful than on my first visit; a smile was on his face and he seemed in good humor and well satisfied with himself; he was being fed much better now, he said.

He conversed cheerfully and intelligently on indifferent topics, and displayed a good memory. I asked him in what year he left New Orleans? He answered in 1863. “You must have been there in Butler’s time?” “Oh yes,” he said. “We all had to take the oath again; though we Germans were always Union men and loyal, we still had to swear allegiance again to the United States.”

I asked him whether any of his family came to see

him? He said no, he had not seen any of them since the trial; he was very anxious to see the children. A little while before I came in, he had asked the jailer whether he could not take him home to see his family. Referring to his wife he said he did not want to see her any more—a woman who, for five long years, chloroformed her husband that she might carry on her nefarious practice. She had made him miserable. She had executed her threat to be revenged on him for the death of Kirchner.* She had made him impotent. She had accomplished this by making him drink of her menstrual fluid.† When he died he wanted the doctors to open him and examine him internally; he was positive they would find a terrible state of things. He requested me to see that this was done. Referring once more to the story of his having been poisoned, he said: "One evening I came home from work and, while eating my supper, my wife asks me how do you stand with your lodges? [He, Hoffmann, belonged to several orders, seven or eight, paying life insurance.] I told her it was none of her business; what did she want to know for? 'Oh,' she said, 'I merely asked out of curiosity.' I told her I was in good standing in all of them. The next evening thereafter, she poisoned me, but Dr. Fishburn saved my life." I asked him whether he still belonged to the lodges? He said, "No, I do not; but I left them like a respectable, honest man. I paid up everything and then resigned."

Speaking of his lawyers, he said: "The last two are gentlemen, and did all they could for me; but the first two, especially Mr. — [referring by name to one of them, a German] did not do right; but I know why; my wife bought them up. She has fifteen thousand dollars of my hard earned money, and she paid them well. Why did they not bring my witnesses? They say they are dead; I can prove by letters, received from them, they are

* This threat he mentioned above.

† This must be some popular superstition. He asserts that many doctors told him that his impotency and ailments resulted from this.

not dead; Dr. Hegewish is at Matamoras. But my wife paid them and they would not get them.

"I hope I may get a new trial; but if I am to hang I should like to accomplish one thing first, I want to show up my wife's true character. It is true I killed that young man, but he was not my son, he was a bastard."

I asked him when it was he had attempted suicide? He smiled and said: "That is a foolish story. I read it in the papers at the time; it is not true; I am an honest upright man and it is against my principle to do any such thing. Why, if I wanted, I could hang myself here."

* * * * *

It is unquestionable that we have here as well-defined a case of monomania as can be found in any of the records on that subject.

PROCEEDINGS

OF THE

THIRTY-EIGHTH ANNUAL MEETING OF THE ASSOCIATION OF SUPERINTENDENTS OF AMERICAN INSTITUTIONS FOR THE INSANE.

The Thirty-eighth Annual Meeting of the Association was called to order at 10 o'clock A. M., Tuesday, May 13th, 1884, at the Continental Hotel, Philadelphia, Pennsylvania, by the President, Dr. John P. Gray.

Members present during the session:

- J. B. Andrews, M. D., Asylum for the Insane, Buffalo, New York.
J. P. Bancroft, M. D., Asylum for the Insane, Concord, New Hampshire.
W. J. Bland, M. D., Hospital for the Insane, Weston, West Virginia.
J. P. Brown, M. D., Lunatic Hospital, Taunton, Massachusetts.
W. T. Browne, M. D., Asylum for the Insane, Stockton, California.
R. M. Bucke, M. D., Asylum for the Insane, London, Ontario.
D. R. Burrell, M. D., Brigham Hall, Canandaigua, New York.
John H. Callender, M. D., Hospital for the Insane, Nashville, Tennessee.
H. F. Carriel, M. D., Hospital for the Insane, Jacksonville, Illinois.
George C. Catlett, M. D., Lunatic Asylum, St. Joseph, Missouri.
Walter Channing, M. D., Brookline, Massachusetts.
John B. Chapin, M. D., Willard Asylum for the Insane, Willard, New York.
R. H. Chase, M. D., State Hospital for the Insane, Norristown, Penn.
Edward Cowles, M. D., McLean Asylum for the Insane, Somerville, Mass.
John Curwen, M. D., State Hospital for the Insane, Warren, Penn.
A. N. Denton, M. D., Asylum for the Insane, Austin, Texas.
R. S. Dewey, M. D., Eastern Hospital for the Insane, Kankakee, Illinois.
Pliny Earle, M. D., Lunatic Hospital, Northampton, Massachusetts.
O. Everts, M. D., Cincinnati Sanitarium, College Hill, Ohio.
Theo. W. Fisher, M. D., Lunatic Hospital, Boston, Massachusetts.
T. M. Franklin, M. D., City Lunatic Asylum, Blackwell's Island, N. Y.
J. Z. Gerhard, M. D., Pennsylvania State Lunatic Hospital, Harrisburg, Pennsylvania.
W. W. Godding, M. D., Government Hospital for the Insane, Washington, D. C.
John P. Gray, M. D., State Lunatic Asylum, Utica, New York.
Eugene Grissom, M. D., Insane Asylum, Raleigh, North Carolina.
John C. Hall, M. D., Friends' Asylum for the Insane, Frankford, Philadelphia, Pennsylvania.

- Charles J. Hill, M. D., Assistant Physician Mount Hope Retreat, Baltimore, Maryland.
- S. Preston Jones, M. D., Pennsylvania Hospital for the Insane, (Department for Males.) Philadelphia, Pennsylvania.
- Alfred S. Livingston, M. D., Wa-Wa, Delaware County, Pennsylvania.
- P. L. Murphy, M. D., Western North Carolina Insane Asylum, Morganton, North Carolina.
- Charles H. Nichols, M. D., Bloomingdale Asylum, New York City, N. Y.
- George C. Palmer, M. D., Asylum for the Insane, Kalamazoo, Michigan.
- J. Willoughby Phillips, M. D., Assistant Physician, Burn Brae, Kelleville, Pennsylvania.
- T. O. Powell, M. D., Asylum for the Insane, Milledgeville, Georgia.
- A. B. Richardson, M. D., Asylum for the Insane, Athens, Ohio.
- D. D. Richardson, M. D., Department for the Insane, Almshouse, Philadelphia, Pennsylvania.
- J. D. Roberts, M. D., Eastern North Carolina Insane Asylum, Goldsboro, North Carolina.
- Ira Russell, M. D., Highlands, Winchendon, Massachusetts.
- John W. Sawyer, M. D., Butler Hospital for the Insane, Providence, R. I.
- S. S. Schultz, M. D., State Hospital for the Insane, Danville, Pennsylvania.
- A. M. Shew, M. D., Hospital for the Insane, Middletown, Connecticut.
- George S. Sinclair, M. D., Assistant Physician, Hospital for the Insane, Halifax, Nova Scotia.
- E. E. Smith, M. D., Assistant Physician, Asylum for the Insane, Morris Plains, New Jersey.
- Henry P. Stearns, M. D., Retreat for the Insane, Hartford, Connecticut.
- J. T. Steeves, M. D., Provincial Lunatic Asylum, St. John, New Brunswick.
- J. Strong, M. D., Asylum for the Insane, Cleveland, Ohio.
- H. A. Tobey, M. D., Asylum for the Insane, Dayton, Ohio.
- George B. Twitchell, M. D., Keene, New Hampshire.
- J. M. Wallace, M. D., Asylum for the Insane, Hamilton, Ontario.
- John W. Ward, M. D., State Lunatic Asylum, Trenton, New Jersey.

The Secretary read the following letter from Dr. A.

P. Tenney:

TOPEKA, KANSAS, May 9th, 1884.

DR. JOHN CURWEN, Secretary, &c.

DEAR SIR:—As I am unable to participate in the gathering of Superintendents on the 13th, and as I understand Dr. Knapp will not be there, it seems to me that Kansas, now ranking among the first as an agricultural State, should be heard from as to the prosperity of her institutions for the insane. Our present population is not far from one million two hundred thousands. The growth of the State this year is estimated as likely to be one hundred and fifty thousands. The proportion of insane is about one to one thousand population, or not far from twelve hundred insane in the State. The asylum at Osawatomie, for some years and at present in charge of Dr. A. H. Knapp, has about four hundred and twenty patients. The Topeka Institution has two hundred and fifty-nine. A building will be completed this year which will give room for two hundred and fifty more, which with the six hundred and seventy-nine now in the two asylums will

by that time leave nearly four hundred outside of asylums. The State has, however, for some years, made appropriations for all who are refused admission to the asylum for want of room, and has manifested a purpose to care for all of this class in the State.

Two hundred and ninety-nine applications for admission have been made since July 1st. One hundred and eleven have received letters of admission to Osawatomie, one hundred and forty-three to the Topeka Asylum. Seventy-five have been discharged recovered from this institution during the same ten months, and twelve only have died. I have not the figures of restoration and death for Osawatomie Asylum.

The last Legislature appropriated about two hundred thousand dollars for additional room and other improvements. We have erected a new building for kitchen and bakery, boiler-house and laundry, which are now nearly ready for occupation. These take the place of temporary buildings erected five years ago, and are quite well suited to the needs of a large institution. The work of fitting up with new furniture and machinery keeps me closely at home and from meeting you at this time.

My dear friend and earliest teacher in the care of the insane, Dr. C. A. Walker, will be missed by you all. You will remember of our riding together at the St. Louis meeting eight years ago.

Pardon me for writing so much. Wishing you all a profitable and cheering meeting, I am,

Yours truly,

A. P. TENNEY.

A letter was also read from Dr. A. E. Macdonald assigning reasons why he could not attend this meeting.

On motion of Dr. Chapin, Mr. D. A. Ogden, one of the Trustees of the Willard Asylum, was invited to take a seat with the Association.

The same courtesy was extended, on motion of Dr. Palmer, to Dr. Foster Pratt, Trustee of the Insane Asylum at Kalamazoo, Michigan; on motion of Dr. D. D. Richardson to Mr. P. C. Garrett and Dr. A. J. Ourt of the Committee on Lunacy of Pennsylvania; and on motion of Dr. Steeves to Dr. LeBaron Bottsford and Hon. A. G. Blair, Commissioners of the Asylum at St. John, New Brunswick.

On motion of Dr. Curwen, it was

Resolved, That the Committee on Lunacy of the State of Pennsylvania be invited to attend the sessions of the Association.

Dr. Curwen then offered the following resolution:

Resolved, That in the death of our fellow-member, Dr. Thomas S. Kirkbride, this Association has lost one of its ablest associates, who, during the whole period of its existence had given to it most earnest and devoted

thought and attention, and whose counsels were always wise, cautious and most enlightened.

A kind, warm-hearted and sympathizing friend, a faithful and prudent counsellor, a genial and cheerful companion, and a most able, laborious and devoted physician and superintendent; no one who was privileged to know him in these relations can fail to feel the great blank which has been made by his removal.

Privileged to continue in active, continuous service longer than any other member, his latest thoughts were given to the consideration of those things which would most benefit those for whom, for more than forty years, he had thought and labored.

DR. CURWEN: I move, also, that the President appoint a committee to prepare a memorial of Dr. Kirkbride, to be preserved in the minutes of the Association.

DR. GRAY: The resolution is before the Association.

Dr. Nichols paid a brief but warm tribute to the high personal character and valuable labors of Dr. Kirkbride.

DR. GRISSOM: Mr. President—In this connection I desire to lay before the Association a resolution adopted by the Board of Directors of the North Carolina Asylum at Raleigh. Dr. Kirkbride's reputation, fame and service, outside of the State of Pennsylvania, are, perhaps, nowhere better appreciated than in the State which I represent. During his career, he not only had a large number of patients from that State, but was always ready to aid by wise counsel in matters pertaining to the provision for and treatment of the insane.

The resolutions were then read by the Secretary as follows:

Whereas, The Board of Directors of the North Carolina Insane Asylum have heard with deep regret the announcement of the death of Dr. Kirkbride, therefore, be it

Resolved, That the Board desires to express and record its sense of appreciation of the eminent services rendered to humanity by Dr. Kirkbride, during his half century of service as superintendent of asylums for the insane.

That the unfortunate insane have been deprived of a great, kind and tireless friend, and the managers of asylums of a wise benefactor and teacher.

That a copy of these resolutions be sent to the family of the deceased as a mark of condolence for their personal bereavement, to the authorities of the Institution over which he presided with such signal success, and to the Assembly of Superintendents soon to meet.

NORTH CAROLINA INSANE ASYLUM,
RALEIGH, N. C., May 5th, 1884.

DR. GRISSOM: Mr. President and Gentlemen of this Association—When the garlands of remembrance are hung at the door of the tomb of such a man as Dr. Kirkbride, the State which I have the honor to represent thinks it eminently proper that a spray of cypress should be offered

from the South. It is good for us to pause and reflect upon the lesson which his example teaches, and to think of a life which for more than half a century was the sweet, serene pathway of a good man, intent upon his duty, with a heart warm with love for his fellow-men, and a spirit as true to the demands of virtue and honor as the needle to the pole. It is almost an act of supererogation to speak in this or any other community of Dr. Kirkbride's fame. His name in medical annals and councils has long been honored as a household word; and his memory around thousands of fire-sides will be cherished with the veneration of a Roman's reverence for his household god. This sun in the firmament of our specialty, whose bright and brilliant rays in the early morn of its career scattered wide and far the mists of mental gloom, and which shone with genial and gentle warmth through the long summer day, unobscured by a single cloud, has at last calmly and majestically set, leaving a surrounding afterglow, soft and beautiful, lingering upon the horizon of its career reluctant to vanish from the scene of its glory. Let us thank God that we have been permitted to witness this example of greatness and goodness, shining through such a long life of usefulness and unselfishness. Let us honor the memory and practice the virtues of this sage, who moved among his followers like a genius, holding the volume of accumulated wisdom and dispensing with a modesty all his own, from the abundance of that knowledge which experience collects and diligence preserves. We are wont to praise the gallant mariner who rescues a drowning man; Grace Darling will live forever in story and in song; but how can pen or tongue tell the tale of this gray-haired hero, whose career was one life-long struggle to save from despair those imprisoned spirits upon whom the world had already set the gravestone of oblivion?

"To dumb forgetfulness a prey."

Think how this man of delicate frame and soft and gentle speech, stood for a lifetime on the ocean side of misfortune where the mental wrecks of numerous victims were tossed by the waves, and with cool head and unshrinking nerve rescued from destruction their frail barks and wafted them once more with Reason at the helm and Hope at the prow, to seek yet again a prosperous voyage and a peaceful haven. Clothed and in their right minds, those to whom the precious jewels of man's inheritance have been restored, bring to-day the brightest gems that sparkle in their mental crown, to adorn the shrine of Kirkbride's fame. His mission was at last ended. He died, but not unexpectedly. He kept his lamp trimmed and oil burning, for the coming of the bridegroom. He cherished a constant remembrance of another life than this, another judge than man, another ordeal than human opinion.

He did his duty at all times, in all places, to all men, and he enjoyed a wealth of noble thoughts, memories of noble actions and hopes of a noble felicity. We have on this occasion mingled emotions of sorrow and gladness. We mourn that Dr. Kirkbride is dead; we rejoice that Dr. Kirkbride *can never die*. That omnipotent Providence which overrules our destinies has only removed from this to a higher state of existence a good man, a kind father, a loving husband, a faithful friend, a pure patriot, a distinguished philanthropist, an eminent physician, a sincere Christian. In

this dispensation we lose a companion, his family a protector, the poor a benefactor, the afflicted a comforter, society an ornament, philanthropy an instructor, the profession a votary, religion an exemplar. But our temporal loss is his eternal triumph. So dear to him did the path of duty become, from long years of faithful habit, that as age gently withered his strength he tottered on toward honor and immortality. He went down to the grave calmly and without a fear. His example will teach on earth while his spirit rejoices with God.

DR. EARLE: As I cannot trust my organs of speech upon such an occasion, I wish simply to say that I entirely and most cordially approve of the resolution and the remarks that have been made.

DR. GRAY: Gentlemen of the Association—Before putting this motion I would like to add a few words to what has already been said in regard to Dr. Kirkbride. I first knew him more than thirty-five years ago, when I was a student in this city and was in a hospital here. I knew him then in association with other young men, as a friend of young men. With age, dignity and position, he was remarkably accessible to young men. It seemed to give him the greatest pleasure and satisfaction to advance them and encourage them. From that date to the time of his death I knew Dr. Kirkbride well as a friend, and the eloquent remarks of Dr. Grissom have appropriately portrayed the beautiful character of this distinguished physician and superintendent. As Dr. Grissom has said, he was delicate in person, apparently frail in physical structure, but he possessed a large spirit. He was a man of great energy, great vigor of thought and action, though generally quiet in his movements. He seemed to be a natural leader in his profession. Men followed him, listened to him, recognized him as a man of thought and reflection with a power of formulating his ideas distinctly and clearly, and of presenting them so plainly that I hardly recall an instance where his propositions were not accepted, because they were completed in his own mind before he presented them,—like the sculptor who fashions and perfects the figure before he unveils it to the world, so that they who see it hear not the sound of the hammer or chisel, nor see the dust produced in its formation, so Dr. Kirkbride wrought his work, fashioned in the mold of thought, and polished by experimental application, that it came perfect as from the hands of the workman.

When we look back through his history we must estimate him, not as though we judged him to-day, as though he had arisen now or within the last quarter of a century. It must be borne in mind he came upon the stage at a time when there was little that could be said in regard to the treatment of the insane. As we look back now we see that little had been done. We must go back with him as a man who framed (for he was one of its framers) the constitution, so to speak, under which this Association lives and acts. He was connected conspicuously with all the operations in organizing the Association, and with all of its fundamental resolutions and its great work from that day to this; his hand touched everything. More than this, in the institution to which he was so early appointed, years before the existence of this Association, he commenced the work of development of the structure of psychological medicine in this country,—building from within and building from without,—not alone a physical structure,

but laying down principles for the guidance of those who might come after him. He was a progressive yet conservative man, with that self-poise which kept him from being carried away by seeming advances, and with that patience of judgment which led him to examine before approval or rejection, the ideas of others. He was among those who early recognized that the phenomena of disease were not made up from books, but only disclosed to the patient, toiling observer, in the light of experience.

He was himself a worker. The great utility of his life came from within; his aims were high and pure, and he urged his opinions with a simplicity and earnestness and un-elfishness which made them not only unanswerable but irresistible. Any one reading the memorial of his life and work, traced by the hand and heart of his accomplished wife, through the long years of his usefulness, can not but be struck with the fact that he seems to have been associated with the origin and development of every advance made in the care of the insane. The narrative is, in fact, a compendium of the subject during the last half century, and Dr. Kirkbride stands as a foremost figure, especially in all that relates to the practical work accomplished in providing and organizing institutions of this class for our fellow-men.

As Dr. Grissom has said, he was not a man of this State nor of this great and good city; he was a man of the world—whose name is written in every State and in every country in the characteristics which Dr. Grissom has so eloquently portrayed. A man of strong, firm character, of great decision of will, of sound judgment, of high purposes; he was withal, the gentlest of men. He had a sweetness of manner which was like that of a woman, a tenderness of spirit which reached every man he met, and I venture to say there was no man with whom he came in contact that did not feel this. So he goes to rest! But, as Dr. Grissom has well said, "Dr. Kirkbride can never die." His name will never perish from the earth while medical science and humanity have to consider the great questions which pertain to man and his welfare in this world and which reaches on towards the world to come.

DR. GRAY: Gentlemen, you have heard the resolution of Dr. Curwen. Those in favor of the resolution will so signify by rising.

The resolution was unanimously adopted.

On motion of Dr. Nichols, it was

Resolved, That the Secretary be directed to forward to the Directors of the North Carolina Insane Asylum the appreciation by the Association of the spirit which dictated the resolution in regard to Dr. Kirkbride.

On motion of Dr. Nichols, it was

Resolved, That the Secretary be requested to communicate to Mrs. Kirkbride so much of the resolution just adopted by this body as relates to her late husband, with the expression of the sympathy with which this Association unites with his kindred in lamenting his death and honoring his memory.

The President announced the regular Standing Committees, as follows:

ON NOMINATIONS: Drs. Chapin, Grissom and Palmer.

ON TIME AND PLACE OF NEXT MEETING: Drs. Everts, Steeves and Powell.

TO AUDIT TREASURER'S ACCOUNT: Drs. Bucke, W. T. Browne and Catlett.

ON RESOLUTIONS: Drs. Callender, Stearns and Strong.

On motion of Dr. Nichols, a recess was taken until 12 o'clock.

On the re-assembling of the Association, Dr. Everts said:

MR. PRESIDENT: During the proceedings of the morning in relation to Dr. Kirkbride, I presume many other members of the Association, like myself, felt that silence was a more satisfactory expression of their feelings than anything else, and the matter passed without such notice as, I think, becomes this Association. I therefore move that a committee of three be appointed to whom shall be referred everything, in memoriam, respecting Dr. Kirkbride, and I wish distinctly to decline any place on the committee myself.

The motion was seconded by Dr. Nichols and unanimously agreed to.

DR. GRAY: As Dr. Everts has distinctly declined to be a member of that committee, the chair would name Dr. Curwen, Dr. Nichols and Dr. Callender, as such committee. It is also understood, I believe, that Dr. Earle and others will communicate in writing to the committee what they desire to say in regard to Dr. Kirkbride.

The Committee on Nominations reported that they would recommend for President, Dr. Pliny Earle of Massachusetts, and for Vice President, Dr. O. Everts of Ohio.

On motion of Dr. Nichols, it was

Resolved, That the report be accepted and that the acceptance carry with it the appointment of the officers of the Association.

The President then delivered his address, at the conclusion of which, he introduced to the Association his successor, Dr. Pliny Earle.

Dr. Earle on taking the chair said:

To all of us, gentlemen, this is an interesting occasion. The coming together at our annual meeting, the grasping the hands of friends, the mutual looking once more, eye to eye, upon familiar countenances, the renewal of old friendships and the formation of new ones, and, above all, the hope that we may here gain something which shall assist us in our laborious duties at home, all these conspire to make this gathering abundantly in-

teresting to every one of us. But you will pardon me if I claim that it is more overwhelmingly so to me than it can be to any other person now present. As I look around me I recognize the form and features of no one of my compeers, who, forty years ago, assembled in this city, upon this street, and but two or three squares below us, to form this Association.

Many of you, gentlemen, were then in your cradles; several, perhaps, were in their first swaddling clothes, and some were but the dim shadows of the accidental or the incidental possibilities of the future.

With me, and the companions of forty years ago, it is but the repetition of history or fiction, the history of the fiction of the old dinner party of thirteen men who met annually until at length the thirteenth one sat, sad and solitary, at his anniversary meal. And this repeated story is now nearly told. Under these circumstances, to me sufficiently suggestive in themselves, gentlemen, you have come with an offering, the addition of which is, as a matter of sentiment, like the laying of the last sustainable straw upon the camel's back. Not longer to detain you, I simply and from the innermost recesses of my heart render to you my thanks.

The Committee on Business made the following report, which was, on motion, adopted:

The Committee on Business respectfully present to the Association the following report:

Hold meeting for business on Tuesday, from 3 to 6 P. M.

On Wednesday hold meeting for business from 10 A. M. to 1 P. M. At 4 P. M. visit the meeting of the Medical Society of the State of Pennsylvania. At 8 P. M., attend the reception of the President of the Medical Society of the State of Pennsylvania.

On Thursday hold meeting for business from 10 A. M. to 1 P. M. At 2 P. M. leave for a visit to the Friends' Asylum at Frankford, returning at 6.

On Friday hold a meeting for business from 10 A. M. to 1 P. M. At 2 P. M. visit the Department for Males of the Pennsylvania Hospital for the Insane, by invitation of the Board of Managers, returning at 6 P. M. At 8 P. M. hold a meeting for business.

On motion, the Association adjourned to 3 P. M., when it was called to order by the President, Dr. Earle.

The committee to audit the report of the Treasurer's account reported that they had examined the accounts, compared them with the vouchers and found them correct, and a balance on hand of six dollars and twenty-five cents; and they recommend an assessment of five dollars on each member to meet the expenses of the Association.

The report was adopted.

DR. EARLE: Before we proceed to business I wish to trouble you a moment with a small matter. From my first entrance into the specialty,

forty-four years ago, I have kept what reports I could get, and since I went to Northampton have requested of superintendents to send me two reports, as I have sent them two reports each, yearly. One set of these reports, which I have kept since I went to Northampton, is for the hospital; the other is for myself. I have given my set from the beginning to the American Antiquarian Society, whose large library is in Worcester, Massachusetts. It is, I suppose, the most nearly complete collection of the reports of the institutions for the insane in this country, with, perhaps, a single exception. I am not certain that it is not now the most complete. Ten years ago there was one collection which was larger. Those which I have already given to that institution are bound in over a hundred volumes, some of the volumes being pretty thick. They were given with the hope that they may be of use hereafter, to some one who may write the history of the progress in the treatment of the insane in this country. I have enough now to make nearly eight volumes more, so that in all, there will be about one hundred and twelve volumes.

My object in calling your attention to this subject is, to say that I would like every superintendent to send me two copies this year; and I feel that I shall then have done my duty in that respect, and will not ask for two copies afterwards; but I should suppose that every superintendent would like to have his report preserved in such a collection, for the benefit of future researches. I believe the Antiquarian Society would like to receive from every institution, annually, hereafter, a copy of its report. Quite a number of the superintendents have sent me two this year. Some—I think about twenty—have sent me only one, and some have not yet sent any. If there are any here who have sent me but one, I would thank each of them for another copy, and every superintendent can do what he thinks best in regard to the subject, in the future.

We will now proceed to the business of the meeting, and you will please give your attention to Dr. Curwen's address on the history of the Association.

Dr. Curwen then read the address prepared by him, and stated that he had also prepared a full account of the names, with date of appointment and resignation of each superintendent. After some discussion as to the manner of publishing the history, Dr. Everts offered the following resolution, which was, on motion, adopted:

Resolved, That the Secretary of the Association be authorized to publish five hundred copies of Dr. Curwen's Supplementary History of the Association, at the expense of the Association, provided that he shall send a written copy of all matters pertaining to each institution to the superintendent of such institution for correction, fifteen days before publication, with notice to return the same within that time; one copy of such publication to be furnished gratuitously to each member of the Association. All copies required by superintendents or other persons in excess of the number provided for, to be furnished at cost of publication by the Secretary. The copies to the members to be furnished unbound.

The Secretary stated that the second address, on the "Causes of Insanity," was assigned by the Committee to Dr. Earle, but his health not allowing him to undertake the labor requisite to prepare the address he declined, and the Committee and the Secretary took the liberty of asking Dr. Shurtleff to attempt it, but his health also failed and consequently no address had been prepared.

Dr. Stearns then read his address on "Progress in the Treatment of the Insane."

Dr. Godding read his address on "Progress in Provision for the Insane."

The Secretary read a letter from Dr. Clarke giving the reason why he could not prepare and read the address assigned him on "Progress in the Pathology of Insanity."

On motion of Dr. Curwen, it was

Resolved. That the medical profession of Philadelphia and the members of the Medical Society of the State of Pennsylvania be invited to attend the sessions of the Association.

The Secretary then read the minutes of the sessions of the day and, on motion, the Association adjourned to 10 A. M.

The Association was called to order at 10 o'clock A. M., on Wednesday, by the President.

Letters were read by the Secretary from Drs. Hurd and Gundry, giving reasons why they could not attend this meeting. He also read the following communication from Dr. John S. Butler:

MY DEAR DR. CURWEN: I am very sorry that it will not be in my power to attend this meeting of the Association. I regret it the more sincerely, as this is so near to the anniversary of our organization in October, 1844.

I naturally recall the events of that most important meeting—the discussion of plans and principles since proved so sound—the natural doubts and fears of the future, giving way in the minds of all to high and confident hopes! All comes back so vividly to my mind, as if these events were not of forty, but only of a *single* year ago!

In view of these most natural and kindly remembrances, I hope to be excused if I recall to the minds, especially of those members who have joined us in later years, simply the *names* of those pioneers whose self.

denial, hard and warm-hearted work accomplished so much for the insane and to whose good deeds I could here do little justice. They have departed, leaving to all of us their devoted and inspiring examples.

A better "Roll Call" than this was never read out after any hard-fought battle field! Let their *record* answer to their names!

Dr. Samuel B. Woodward, Worcester, Mass.

Dr. F. T. Stribling, Staunton, Virginia.

Dr. Samuel White, Hudson, New York.

Dr. Isaac Ray, Augusta, Maine.

Dr. Luther V. Bell, Somerville, Mass.

Dr. Charles H. Stedman, Boston, Mass.

Dr. Amariah Brigham, Utica, New York.

Dr. William M. Aul, Columbus, Ohio.

Dr. John M. Galt, Williamsburg, Virginia.

Dr. Nehemiah Cutter, Pepperell, Mass.

And last, but not least, in our respect and loving remembrances, Dr. Thomas S. Kirkbride, Philadelphia, Pa.

These have ceased from their labors—but like the grand old architect of Christian Rome,

"They had builded better than they knew."

Dr. Pliny Earle, of Northampton, Mass., alone remains in active duty, bringing to a higher excellency the good work he began in the hospital at Northampton. He will, I trust, be with you at this meeting, to do more and better honor to our departed associates.

The good fortune of my connection with the Association from its inauguration and afterward the unmerited honor of being elected to preside over it, are among the richest rewards of my professional life.

During the past forty years a great work has been done for the insane. As surely, a great work for the insane remains to be done. Advances are to be, and surely *will* be, made in the medical and moral treatment of insanity, and in the amelioration of the condition and surroundings of the lunatic. The greater work of all is to be done in the line of the *Prevention of Insanity*.

Dr. Richardson, of London, says: "A change has come over the science of medicine; with true nobleness of purpose, true medicine has been the first to strip herself of all mere pretences to cure, and has stood boldly forward to declare, as a higher philosophy, the prevention of disease. The doctrine of absolute faith in the principle of prevention includes the existence of a higher order of thought, of broad views on life and health, on diseases and their external origin, of death and its correct place in nature. * * * * * The science of prevention becomes a political and a social as well as a medical study."

Dr. Henry J. Bowditch asserts, that "We stand now at the very dawn of the grandest epoch yet seen in the progress of medicine. While philosophically, accurately, and with the most minute skill studying by means of physiology, pathological anatomy, chemistry, the microscope, and above all, by careful clinical observation, the natural history of disease and the effects of remedies, our art at the present day looks still higher, viz., to the prevention of, as well as to the cure of disease."

These are, I believe, accepted as among our highest authorities.

Here *Advance* and *Prevention* are synonymous terms. As such I commend them to the Association.

Though I am so effectually on the "Veteran Retired List" that I cannot even "shoulder a crutch to show how fields were won," still my heart warms to the good and progressive work of the Association.

Remember me most cordially to "one and all" of the members, but especially to those of that excellent "*remainder*" of good fellowship with whom I have been, in olden times, so pleasantly associated.

I remain, your attached friend,

JOHN S. BUTLER.

HARTFORD, CONN., May 10th, 1884.

On motion of Dr. Chapin, Mr. D. Willers, Trustee of the Willard Asylum, was invited to take a seat in the Association.

On motion of Dr. Palmer, Mr. Levi S. Barbour, of the Board of Public Charities of Michigan, was also invited to take a seat in the Association.

Invitations were read from the Managers of the House of Correction of Philadelphia to visit that institution, and from Dr. John V. Shoemaker to attend a reception at his house, which were accepted and referred to the Committee on Business.

The President then called for the reports of the Standing Committees.

Dr. Theo. W. Fisher, from the Committee on Necrology, read a biographical sketch of Dr. R. H. Gale, prepared by Dr. C. C. Forbes of Arkansas:

The subject of this writing was born in Owen County, Kentucky, on the 25th day of January, 1828. His life, though cut off a little past middle age, was singularly eventful. Graduating when quite young from Transylvania University, at Lexington in his native State, he entered the office of his father, an eminent and popular physician as well as a wealthy and influential man; and after the usual term of pupilage under the care of so interested and capable a preceptor, he was enrolled in the classes of the Jefferson Medical College of 1847-43, graduating with excellent standing the latter year.

His first location in the pursuit of his profession was at Covington; Ky., where it is said his practice was signalized from the beginning by marked success. While in this field he became a staff officer of the Cincinnati Commercial Hospital. After very creditable public service and while possessed of a flattering and remunerative private clientage, he was induced by his family and their friends to change his location to the midst

of the community in which he had been reared; where his personal worth was appreciated, it might be said, to a degree of partiality and his professional capability and skill were recognized at once. A man of lively sympathies and of a generous and genial nature, he could never feel indifferent as to whatever affected in any way those among whom he lived and moved. He was distinctly and distinctively one of the people. Influenced by their wishes, he was twice elected by their suffrages to the office of County and Probate Judge of Owen County. Subsequently he served his county one or more terms in the legislative councils of the State, assuming a prominent part in their proceedings and leaving a highly creditable and flattering record.

At the beginning of the war, impelled by his ardent sympathies with the South, he entered the service of the Confederate States in Col. D. Howard Smith's regiment, which constituted a portion of Gen. John H. Morgan's famous command. His health failing from the energetic performance of his very arduous duties, he was obliged to resign his position and quit the service. After the war he settled in Louisville, where he immediately realized the eminence which he had already achieved. He very soon commanded a lucrative practice and assumed a prominent place upon the staff of the City Hospital, where his tastes affecting surgery most, he took an enviable stand among the many powerful and eminent men then and still identified with the specialty in that institution. Besides devoting considerable time to clinical teaching in the hospital, he also gave lectures for several seasons in the Louisville Medical College. He was chosen about the same time Secretary—who was also ex-officio financial manager—of the Physicians' Medical Aid Society.

In 1873 he was appointed surgeon to the Louisville, Cincinnati and Lexington Railroad, and a year later by the Paducah road, to a similar position. In this capacity he served these roads till 1879, when he was appointed by Gov. Blackburn as Superintendent of the Central Kentucky Lunatic Asylum, in which position he continued till the day of his death, which occurred, as remarkable, on the day fixed for his resignation of the office to take effect. Lately, Dr. Gale had realized very sensibly and painfully the aptness of the pithy and pointed words of somebody, that "a superintendent of an asylum for the insane dwells ever upon a volcano liable at any moment to erupt a catastrophe." He was both confiding and indulgent, and trusted his subordinates perhaps unduly. Unfortunate occurrences, concealed from him, led to charges which challenged investigation, and which eventuated in confirmation. Although the great mass of the testimony in the premises went very far to exculpate Dr. Gale himself and to establish the goodness of his nature and efficiency of his management, still the worry and anxiety incidental to the proceedings, so preyed upon his sensitive feelings and already failing health as, no doubt, to hasten his death.

In 1846, when in his nineteenth year, Dr. Gale was married to Miss M. C. Green, a most charming and estimable lady, whose death in 1880 preceded his own. As the fruit of this union, three children survive their parents, one son and two daughters, all married. Only a few weeks ago he was joined in a second marriage; this time to Mrs. Susan Bryant, an

amiable and excellent lady, the daughter of Dr. Hughes, a gentleman of fine fortune and great influence, residing near Springfield, Kentucky.

In his personality Dr. Gale was a man, physically, of an exceptionally fine order; of commanding size, he was well-proportioned, gainly and graceful. Socially he was genial and unreserved, while he excelled as an agreeable and entertaining conversationalist. Although possessed of mental endowments and culture much above the ordinary plane, still his breeding and native modesty would never allow these qualities to even seem obtrusive. He died at the residence of his son-in-law, Mr. J. C. Reid, in Owen County, near the place of his birth, on the 22d day of April, ult., in the fifty-seventh year of his age.

Dr. Dewey, from the Committee on Cerebro-Spinal Pathology, read a paper on the "Promotion of Mental Health by Care and Training of Children."

A motion to discuss the paper was made by Dr. Curwen, seconded by Dr. Fisher and agreed to.

DR. FISHER: I seconded the motion, not that I had anything special to say upon the subject, but that members of the Association should have an opportunity to remark upon the paper, if they so desired. It is a step in the right direction, and if the Doctor would go through his entire hospital and gather the statistics he might present some valuable conclusions by another year.

DR. GRAY: I hope that the orator in the upper corner will give us something on the subject.

DR. GRISSOM: "I am no orator as Brutus is."

DR. GRAY: I think with Dr. Fisher that the paper of Dr. Dewey is a step in the right direction. I think it is beginning at the right end of such cases. I presume that the difficulty he labored under is one that we have all appreciated—getting information imperfectly from the persons who bring patients to asylums. I thought I could see, in some of the cases of which he gave a brief analysis or synopsis, that he had labored under that difficulty. I have not a doubt in my mind that in the direction of true progress in reference to the appreciation of causes and the proper classification and treatment of the insane, it is very important that we should have more information than we usually get or are able to get, to commence the care and direction and treatment of patients. Going back, as Dr. Dewey has suggested, to childhood, to see the influences that are brought about children from the hour of their birth to form their characters, to develop or suppress their passions, to guide them in all ways, either into usefulness and integrity and duty, or to let them drift to themselves, is of vital importance.

Now it seems that several of these cases presented by Dr. Dewey, were children that could hardly be said to have been brought up; they simply grew up as weeds grow in the streets, subject to the tramp of every foot or anything that might occur. Out of just such cases we have the institutions for the reformation of criminals very largely filled, and occasionally they

drift to the asylums; but I perceive from the description of the cases given, that in the majority of these instances they have not simply been subjected to the exposure or drift of life, growing up on the street, homeless, finding there rest for the night and then pilfering or living as best they could through the day, without parents or friends or any one to guide them; but they have been given to those very excesses which in themselves, independent of such a vagabond life, are capable of producing most any disease. I notice that some of the young boys as a beginning have had syphilis. I think the earliest, the Doctor said, was at fifteen years of age.

DR. DEWEY: Yes, sir.

DR. GRAY: Now the lesson to all of us is—and I hope that Dr. Dewey will follow the subject up as he has opportunity, by taking a larger number of persons and giving us as accurate information as possible, and classifying them as he has here. The lesson that paper should teach is this: That we, as representatives of one of the departments of medicine and of a great department of hygiene, certainly of mental hygiene, should use our influence, perhaps more than we do, with reference to the very point suggested in almost the first sentence of the paper of Dr. Dewey, that is, the care and guidance and bringing up of children. I think instead of standing at the other end of the line and inquiring what the diseases are we are to treat, we should do more towards going back to the beginning and impress upon the communities in which we live and act, and through the legislatures to which we constantly report, the infinite importance of such training. Certainly we represent these institutions and the interests of the public, and we should seek to impress upon the public authorities the greater importance of originating and using protective measures, so that in the training of children from the very beginning, in our schools, and through humane societies that look after youth and children, the plain, simple facts in regard to vice, to training, to education, to diet, and all the elements that go to develop the physical, mental and moral life of youth. There is where I think we should begin if we wish to arrest the growing progress that there seems to be in diseases, insanity included.

After this discussion, the paper was laid on the table.

Dr. Catlett, from the Committee on Cerebro-Spinal Pathology, read a paper on "Tinnitus Aurium."

DR. CATLETT: Mr. President and Gentlemen—A report was not expected from me, but the chairman of this committee recently notified me that he would not be present at this meeting nor would he be able to make a report. This paper is not intended as a report of the committee, only supplementary. It was written before I received notice from the chairman that he would not be able to make a report. Being exceedingly feeble from the effect of breathing sewer gas, which escaped into my room last night, I will ask the indulgence of the Association for the manner of presenting the paper.

After the reading, the following discussion took place:

DR. FISHER: In regard to the paper I have but a few words to say. I

have been aware for a number of years, as probably all of you have, that auditory diseases, should be included in the symptoms to be observed among the insane. Deafness, or partial deafness, and hallucinations of hearing are very common in our insane hospitals, but the difficulties of investigation are considerable. It is impossible to rely always upon the statements of our patients, and investigations must be limited to testing the hearing in many cases and making such superficial examinations as are possible.

I had, not long since, a case of suicidal mania, in which I thought possibly some post-mortem evidence might be found of disease of the internal ear. There was deafness in both ears which had been gradually increasing for a number of years. There was also a decided tendency to rotary motion, from right to left, exhibited when the patient was walking by a series of cycloid motions across the floor, and when the patient was seemingly conscious of his actions. It was thought probable that some of the semi-circular canals might be found diseased. There was soon, unfortunately for the patient, an opportunity for the determination of his disease by an autopsy. On careful examination the semi-circular canals were found perfectly healthy in both ears; but evidences of disease were found in the cortex and in the membranes of the brain, such as are often found in cases of insanity of somewhat long standing. It was therefore supposed that the disease which affected the function of equilibrium was of centric, and not of eccentric origin. As it is often difficult to determine whether disease exists in the ear, we should carefully examine each case. Every patient coming into a hospital should be examined with reference to his hearing, as a matter of routine, as well as to the condition of the retina.

The paper was then laid on the table.

The next report was from the Committee on Therapeutics and New Remedies, by Dr. J. B. Andrews.

Dr. Andrews, before reading his paper said, in explanation:

The paper I am about to read is illustrated by pulse tracings by the sphygmograph, used to show the action of drugs upon the circulation. The instrument employed is a modification of Pond's and is simple in construction and action, and gives very satisfactory tracings. I have prepared a few specimens which I will pass around, simply to show the work of the instrument. Thus far the sphygmograph has been but a plaything in the hands of many who have attempted to use it, and by few have its possibilities been developed. Those who have thoroughly tested the instrument and are therefore most competent to judge, claim for it a great value in the diagnosis of disease. A medical friend who has extensively used the sphygmograph, in an album of some two thousand tracings, presents many of great diagnostic value. That the instrument has not as yet assumed its proper place as an aid in diagnosis, is largely due to the want of sufficient skill in its use. To take a good characteristic tracing requires considerable experience and patient labor. Many of the tracings which would seem at first to be admirable because of their size, are really useless, as they show

only the systolic beat of the heart without the tension or diastole of the vessels. This instrument is very simple. It acts by transferring the arterial beat through a rubber diaphragm to the lever which gives motion to the needle. This motion is more direct and made with less friction than in other instruments. Another improvement is in the shape of the needle; the curve at the extremity prevents its plowing into the paper and gives greater sensitiveness to its motion. It is so arranged by a screw that the barrel of the instrument can be lengthened or shortened, and this raises the lever from, or causes it to approach the diaphragm, thus adapting it to different pulses. If the pulse lies very near the surface, less pressure will be required, and then by screwing up the barrel the end of the lever is brought nearer the diaphragm, which makes the sphygmograph more sensitive. If the pulse is more deeply seated, more pressure upon the artery must be used; then the lever is lifted from the diaphragm. The instrument is so arranged that the paper can be passed through at different rates of speed, to correspond with that of the pulse. The watch motion is very perfect and runs continuously for three minutes.

I would like to call attention to two of the tracings presented. They are instances of very high tension, the highest I have had an opportunity to take. The pulsations were only 32 per minute, increased on exercise to 40.

The papers are prepared for the tracings by being uniformly blackened. This is accomplished by passing them over a lighted lamp, and they are finished by being immersed in or painted over with a varnish made from the following recipe: Gum sandarach, half ounce; alcohol, half pint; castor oil, two drachms.

Simple collodion will answer a very good purpose, but does not give the finish produced by the preparation given above. This is recommended by those engaged in the manufacture of sphygmographs, and does not originate with myself.

You will notice in the tracings presented, that while there is very great variety there is a close resemblance in all of those taken from the same pulse. While there is as much diversity in the tracings of different individuals as in the appearance of their faces, a correct tracing is as characteristic as the photograph of the individual.

With this introduction the Doctor read his paper upon "Paraldehyd, Nitro-Glycerine and Jamaica Dogwood." This was profusely illustrated with sphygmographic tracings.

In reply to a question by Dr. Grissom in regard to the action of nitro-glycerine in epilepsy, Dr. Andrews said:

The patient who had been under observation for a year had never before had a series of convulsions, but after taking the medicine for some six weeks he had a series of thirty-two seizures. The medicine was then discontinued, and he has since had an occasional convulsion only. Globoin has proved itself valuable in cases of feeble heart and of atheroma of the arteries, the tension of which it relieves in a marked degree, and also in

cases of albuminuria; see statements of Dr. Bartholow in *Philadelphia Medical Times* of a few months ago.

As the use of the drug in these diseases has been investigated and conclusions favorable to its use presented, I have not enlarged upon this view of the subject.

On motion of Dr. Curwen, Dr. I. N. Kerlin, of the Pennsylvania School for Feeble-Minded Children, was invited to take a seat with the Association.

Dr. Curwen also stated that Dr. Kilbourne was confined to his room by an attack of rheumatism.

The Secretary read an invitation to visit the School for Feeble-Minded Children, at Elwyn, also an invitation from the Secretary of the Medical Society of Pennsylvania, to an excursion to Cape May Point, on Saturday, and also to visit the Pennsylvania Hospital, Pine and 8th Sts.

On motion, adjourned to 3 P. M.

The Association was called to order at 3 P. M. by the President.

The Secretary read an invitation from the Guardians of the Poor of Philadelphia, to visit the department for the insane under their care. The Secretary read the report of the Committee on Time and Place of Next Meeting recommending Saratoga, N. Y., as the place, and the third Tuesday of June, 1885, as the time, which was on motion, unanimously adopted.

The President appointed on the Committee of Arrangements, Drs. J. P. Gray, J. B. Chapin, J. B. Andrews, C. H. Nichols and John Curwen.

On motion, the Association adjourned to 10 A. M., Thursday.

After adjournment, the Association in a body visited the Medical Society of the State of Pennsylvania then in session, and remained until their hour of adjournment, and

in the evening the members attended the reception of the President of the Medical Society of Pennsylvania.

The Association was called to order on Thursday, at 10 A. M., by the President.

The minutes of the sessions of yesterday were read. The Secretary stated to the members the arrangement for going to Friends' Asylum that afternoon. He also stated that an invitation had been extended by the Professors of the Medical Department of the University of Pennsylvania to visit that institution that afternoon, at 5:30 P. M.

On motion of Dr. Stearns, Dr. G. W. Russell, one of the Managers of the Retreat for the Insane at Hartford, was invited to take a seat in the Association, and on motion of Dr. Denton, the same courtesy was extended to Dr. White of Texas.

Dr. Foster Pratt then arose to offer the following resolutions.

DR. PRATT: Before introducing the resolutions I have to offer, I wish to remind the gentlemen present of the fact that last fall at Detroit, at the meeting of the American Public Health Association, I had the honor to read a paper which was in essence a careful study of the Tenth Census of the United States on what is termed the "Defective Classes" of population, including the insane. A copy of the paper was sent to every institution for the care of the insane, and also to every member of Congress and to State officials. The importance of the subject will commend itself, I think, to this body:

Whereas, By a comparison of the statistics of the "defective" classes of our population, as shown by the eighth, ninth and tenth census, it appears:

1st, That the proportion of insane to the total population of the United States is rapidly increasing; and

2d, That a prominent factor in this increase is the large defective element found among the foreign born who have emigrated to us since 1847 and 1848, and who now constitute one-eighth of our total population; but who furnish approximately, one-third of our paupers, one-third of our criminals and one-third of our insane; and,

Whereas, While the cost of buildings to suitably keep and the annual tax to properly maintain these classes fall wholly and heavily on the several States and Territories, they are inhibited by Federal laws from enacting and enforcing effective measures to prevent or to mitigate these evils as far as they are caused by immigration; therefore,

Resolved, That the Association of Medical Superintendents of American Institutions for the Insane respectfully urges the Congress of the United States to give early and earnest attention to this important subject, to the

end that emigration laws may be enacted by it, which, while they do not unnecessarily obstruct the immigration of healthy and self-dependent persons will effectively prevent the emigration and exportation to our ports of the so-called "Defective classes" of Europe and Asia.

Resolved, That in furtherance of this object a copy of these resolutions and preamble be forwarded to the President of the United States, and to the President of the Senate and the Speaker of the House of Representatives at Washington, for consideration by them and by Congress; also to the Governor and presiding officers of the Legislature of each State in the Union, and to each State Medical Society, that they and the people they severally represent, who are most affected by the pecuniary burdens and by the physical and moral evils caused by the unrestricted and unregulated immigration, may be moved to take such action as they deem best to secure early and efficient action by Congress (with whom alone is the power,) to abate the great and growing evils to which public attention is hereby called.

While a study of the census of 1860, 1870 and 1880, as has been remarked in the preamble, demonstrates the increase of insanity, and that our foreign born population is one of its most important factors, we have in addition to the statistics a great many isolated and important facts, in late years, to substantiate the general charge. Among several leading editorials which the Chicago papers gave to their readers in comments upon my paper when first published, there was one very important editorial which contains the statement that the day previous, in Chicago, thirty persons had been adjudged insane by the courts, all foreigners and none of them more than six weeks in the United States. Entirely apropos, I find in the *New York Herald* of this morning the following editorial:

"PAUPER IMMIGRATION."

"The action of foreign governments in exporting their paupers to this country is as ill-advised as it is impertinent. Hitherto, perfect freedom to admission to live and labor in the United States has characterized our system of economy, but this never contemplated the emptying upon our shores of the contents of British or other foreign workhouses. The arrival on the City of Rome of forty or more persons thus described, should arouse the vigilance of the authorities, and they should be at once returned whence they came. The fact, that in this instance, heads of families have been supplied by the British authorities with a little money, looks like an attempt to evade the strict definition of paupers while preserving the essential character. If there is probability of such persons being thrown upon our charities for their subsistence, they should be considered paupers and treated accordingly. The act of sending them here is ill-advised, because it is not unlikely to induce such legislation at Washington as will materially interfere with all foreign emigration to this country, a course of action not to be desired on any account."

It is but little over a month since two hundred and fifty were landed from one vessel at Boston, from Glasgow, I believe, but happily by a cablegram from Glasgow they were detected and are reported to have been sent back.

Now it is a significant fact, that, while those concerned in the management of immigrants claim, that as they arrive they are constantly sent back when found to be defective in any way, I have the statistics of the Commissioners of Emigration for the State of New York for the last ten years, and by their published statistics in those reports, year by year, they have failed uniformly to report the number sent back. I have also the reports of the Bureau of Statistics at Washington, a complete file from the

organization of that department, or bureau, and while they enter into great minuteness of detail in the statistics of emigration, they, too, utterly fail to report these cases of pauper or defective persons sent back to the ports whence they came.

By the request of the President, the resolutions were read a second time by Dr. Pratt.

DR. PRATT: I will state by way of explanation on one point, that the Supreme Court of the United States in a series of cases, running for seventy years, has decided that the regulation of immigration is a regulation of commerce, and therefore, according to the Constitution of the United States, wholly within the control of Congress. The way they make commerce of it is this: By the decision of the Supreme Court, in what is known as the "passenger cases," it was decided that carrying passengers for hire was "commerce," as much as carrying merchandise for hire.

DR. EVERTS: I move the adoption of the resolutions.

The motion was seconded by Dr. Catlett.

DR. NICHOLS: I would like to have the preamble to this resolution slightly amended. Dr. Pratt says that one-eighth of the population of the United States is composed of the immigrants since 1847 or 1848, and their descendants.

DR. PRATT: No, sir; I beg your pardon, they are the foreign-born, exclusively.

DR. NICHOLS: Then I misunderstood or miscollected the declaration in relation to this point, but the statement that it is *conclusively demonstrated*—I think that is the language—from an examination of the censuses of 1860, 1870 and 1880, that one-eighth of the inhabitants and one-third of the insane and other dependent classes are actual emigrants since 1847 or '48, does not affect what I have in view. Now I have not the slightest reason to doubt the correctness of the deductions the Doctor makes from his examination of those censuses, but it might be that another examiner would draw a different conclusion. Besides, there may be errors in one or more of the censuses. If the language is made less positive by substituting the words *it appears from an examination*, etc., in place of *it is conclusively demonstrated*, etc., I shall be willing to vote for the preamble and resolutions. Modified as proposed I think they will impress Congress more favorably than they will if we lay ourselves open to the liability of being thought too confident of our ground.

DR. PRATT: I understand this is the difficulty, that Dr. Nichols and others have not investigated the subject. I have a table here, which was sent to every hospital for the insane in the land, and to several two or three copies.

I would like, now that I am upon my feet, to state some facts in regard to several States. To begin with New York, the native whites are 3,805,000; the foreign whites, 1,210,000. One-fourth of the entire population of the State of New York is foreign-born. Now, mark, of the native white 7,595 are insane, and of the foreign-born—only one-fourth of the population—

6,321 are insane. Almost one-half of the insane of that State are furnished by one-fourth of the population. The same is true in Pennsylvania. Nearly the same is true in almost all the Northern States, except perhaps Maine, New Hampshire and Vermont. The same is true also, in almost all the Western States and Territories.

Now, as I already remarked, (and gentlemen understand it, it is not necessary to elaborate the point or the argument,) these figures are official in all respects. If any gentleman wishes them for demonstration he may have them to study the subject. But I want to read a paragraph or two, which shows how this ratio of increase has been manifested. Reckoning now from 1850 or 1860, as a basis to start with. During the ten years preceding 1860, the increase of foreign population was 100 per cent., but the foreign born insane had increased 181 per cent. Secondly, while the total of this class had increased during the next decade 30 per cent., the insane of this class had increased nearly 100 per cent. Thirdly, in 1880, the foreign born had increased less than 20 per cent., but their insane had increased 150 per cent. These are the official figures.

DR. FRANKLIN: I would add two or three items to the statements of Dr. Pratt. New York city, of course, suffers to a greater extent than any other place, from the very class of which Dr. Pratt speaks. Ireland furnishes to our institution at Blackwell's Island the greatest number of patients. Germany comes next. But I noticed, in 1881, in gathering matter for the annual report, looking up nationalities, etc., that one-half of the admissions for that year were people who had been subjects of Great Britain. Attracted by that fact, I looked the matter up again in 1882, and I found the number of those that had been subjects of Great Britain exceeded by a little, 50 per cent. I have not made up the report for last year—have not followed the figures down each day so as to see if there is a gradual increase.

Again, we get a great many from the Asylum for Insane Emigrants, at Ward's Island, after they have completed that period during which the Emigrant Department is responsible for their care. Again, we get many whose recent arrival in the country we strongly suspect, but whose mental condition is such that we can learn nothing from them as to the dates of their arrival, and some of these not being visited by friends we fail to get information in that direction. We often get from patients facts sufficient to satisfy us that they are recently arrived emigrants; but the failure of recollection upon one or two important points make it impossible for us to prove to a certainty that which would send them to the Emigrant Asylum. These difficulties sometimes are done away with when the patient has nearly recovered; and at other times after, she has become incurable and acquired the rights of citizenship by residence in our institution.

DR. CHANNING: I think there is one element that we have lost sight of in comparing the proportion of the insane in the foreign population and in our own, and that is the relative proportion of children. The number of these in our immigrants is smaller comparatively than in our native population. Therefore, the inference we draw, without considering these circumstances, might be misleading. An investigation is now being made in the hospitals in Massachusetts, by taking the number of insane of foreign

parentage and making a comparison in that way, and you [turning to President Earle] probably know the figures better than I do, but I think it is that three-fifths of our patients are of foreign parentage.

THE PRESIDENT: I forget the proportion.

DR. PRATT: Since I have had the matter under consideration, I have had some correspondence with Mr. Wines, specially in charge of this census work, in which I took upon myself to call attention to the fact that of the native born whites in the Northern States and Territories and the District of Columbia, the number of native born whites of foreign parentage outnumbered those born of native parentage by a million and a half. I know it is an astonishing statement, but the figures prove it conclusively. I will repeat it—that the native born children of foreigners of the Northern States, Territories and the District of Columbia—the native born children of foreigners exceed the children of native born parents by a million and a half; but the statistics of the census do not show when they come to classify the insane, anything about the parentage of those who are native born. While it is apparent from a study of the census that the proportion of insanity to population is increasing in the native white class very rapidly since 1850 or 1860, yet the statistics have failed to show how much of this increase is due to the children of foreign parents and how much to the children of native born. While, of course, the children born here of foreign born parents are treated by the census as native born, it fails to give other important data which should be given and without which we can never thoroughly study the subject; but Mr. Wines has promised in subsequent volumes of the census, if possible, to remedy this defect.

The gentleman from New York (Dr. Franklin) speaks of the State of New York as being exceptionally troubled.

DR. FRANKLIN: The city.

DR. PRATT: I have given the figures of the State. Of course the city is included in the State, in the statistical statement. Almost the same result found in New York is found in my own State. While the foreign born constitute one-fourth of the population, they furnish more than one-third of the insane. We have two ports, and a great many immigrants come to us from and through Canada, and coming to Detroit and Port Huron, we are subject also to the same difficulty as the State or City of New York.

DR. FRANKLIN: A great many come to us from Great Britain.

DR. PRATT: I am perhaps in error in part of the statement that I made in regard to the arrival of two hundred and fifty from Glasgow in Boston some few weeks ago. A gentleman from there, sitting near me says they were *not* sent back, that a fine of five dollars was imposed and they were sent to the West.

DR. FISHER: As I recollect, the immigrants were found to have about five dollars in money each, which had been furnished them at home, and for that reason they could not be considered paupers. Many of them represented that they had relatives to whom they were going and who would be responsible for their support. I think they were not sent back. I think I should have known it if they were. They were examined, and it

was contemplated to send such of them back as were not found to have sufficient means of support; but I think they were all sent West.

DR. NICHOLS: In New York we should have voted them before we sent them West. That is all the difference I can think of between New York and Boston.

DR. CHAPIN: I am not sure that I fully understand the import of this resolution, but think it is hardly wise for this Association to make any declaration about foreign born immigrants who are paupers or criminals, with which classes we have little to do. While, as Dr. Pratt has recited in his preamble, an unduly large proportion of the insane of the country are foreign born, or of foreign descent, it does not appear that these persons were insane or paupers before their arrival in the country. It is true that the foreigner on his arrival in a strange country is suddenly brought into contact with new conditions of living and environments. The change of food, the anxieties of a voyage, and residence among strangers, produce homesickness, and a strain which these persons are not prepared to endure. If they become incapacitated by insanity, or otherwise, they become a public charge at once and admission into a public asylum is an easier transition than for the native born. It is probable a few persons are sent over who are insane and paupers, but I believe if the facts could be reached the majority of the foreign born insane become so after their arrival in the country. As it has been the policy of the government to welcome and promote immigration, it would be very proper to inquire what causes so much insanity among the foreign born as appears, and an extension of the inquiry whether there are existing conditions in our social organization that tend to develop both pauperism and crime, would not be out of the way. I am under an impression that a statute is now in existence to authorize the return of paupers and lunatics, and that it is enforced to a certain extent.

DR. GRAY: You do not refer to the State of New York?

DR. CHAPIN: I supposed the law was enacted by Congress. At least I understand from newspaper reports certain cases have been stopped and returned.

DR. PRATT: The law is hardly directory. There is no penalty upon anybody who does not obey the law as directed.

Now, in regard to the fact, it seems to be a very difficult matter to obtain statistics of the number who come here actually insane. But this body will readily understand that epileptics, and others who are periodically insane—who have lucid intervals—arriving here, or who become insane very soon after they come here, when they once arrive at an institution would remain there, especially if dangerous cases or cases of epileptic insanity. Once before on the floor I called attention to the situation in Chicago, that thirty persons were adjudged insane there in one day, every one a foreigner and none of them in the country six weeks.

PRESIDENT EARLE: I would ask Dr. Pratt if we should infer from that the possibility of that number being adjudged insane every day, or whether in that city there are not certain days for trying the question of insanity, and those thirty patients, as we may call them, had accumulated there?

DR. PRATT: It is a daily business of certain courts in Chicago. But the important point is not whether courts act daily, weekly or monthly, but that thirty, all foreigners, and none of them more than six weeks in the country, by one court.

DR. NICHOLS, [interposing.] They must have accumulated in six weeks.

DR. PRATT: None of them more than six weeks in the country. Now the inference is irresistible that these persons, many of them if not all, had been insane before sent here—perhaps sent here during the lucid interval. I have personal knowledge, from my intercourse with the insane and their friends in my own State, that many have been sent to us who are periodically insane. Many are among the class of recently termed “assisted emigrants.” They are sent over here on the ground, as is alleged, that they have friends to take care of them; and when they get here, their friends prove to be the State.

It is undeniable that various moral causes must produce, at least for a few years after their arrival, some degree of insanity among them, which may be properly chargeable to the simple fact of removal. Mr. Wines in his treatise on the subject, in the chapter on defective classes, calls attention to this. In my correspondence with him I had occasion to speak of the fact that in 1850 the proportion of insane to foreign born was scarcely, if any, larger than the proportion of insane to native born. It was a little larger, just about large enough to account for the effect of these moral and other disturbing influences that I have spoken of. But as you come along down since 1850, that rate is increased in proportion. These foreign “defective” come here from the poorhouses and the almshouses; and since we take them in, they have been acting upon it ever since. The statistics show, as I have already said, that a certain amount of this insanity in the foreign born is probably chargeable to disturbing influences resulting from a change of residence; but it is much more largely due to the fact that they bring with them their periodical insanity and an hereditary tendency to it, which develops here because of the moral disturbance which they encounter. Mr. Wines seeks to fortify his argument by showing that of the people from the Atlantic States going into the Western Territories, as into California for instance, a larger proportion become insane than they do at the East. I think that I succeeded in proving to the gentleman that he was mistaken in his estimate in that direction. The fact is, that in the Western Territories the proportion of foreign born which become insane, is much greater than that which develops in the American or native born.

The total figures as shown by the census, in regard to paupers, I will read. I cannot turn to them just now very readily, but so far as the insane are concerned, the total number is 91,997, of which 26,259 are foreign white. I did not tabulate the details of the pauper element, because I was not so intent upon that as I was upon the matter of insanity.

Total paupers, 88,665; foreign born, 22,961.

DR. STEARNS: I would like to call attention to that portion of the preamble in which it stated that, “Whereas, one-third of the criminal class come from those who are foreign born,” etc. I do not know that we have anything specially to do with the criminal class as a body. It seems to me that it would be better to limit our language to the insane, or at most to

the pauper class, without including the criminal class. It would tend, I think, to prejudice any action in favor of the resolutions among those who are foreign born, and look as though we were stepping out of our sphere of action to include the criminal classes, if not the pauper class.

DR. PRATT: In response to that remark I would simply say that every gentleman is fully aware of the extent to which these classes run together—how many insane come from the pauper class; how many insane come from the criminal class—and it was simply because of their being to some extent connected together by being defective, that these two classes were considered in connection with the insane. Of course, we believe, as a general rule, that chronic paupers breed paupers, and criminals breed criminals, and we know that the criminal insane are largely found in those two classes. The gentleman is undoubtedly aware that a great many of the so-called political cranks of Germany and the social cranks become paupers and insane in the United States. It is with such a view only that these classes have been considered together, and are mentioned in the preamble; but they are not alluded to in the resolutions.

MR. OGDEN: Is the gentleman sure that he is correct in saying that Congress alone has such power?

DR. PRATT: Yes, sir. Congress alone has the power to apply the remedy, so far as these evils are caused by immigration.

MR. OGDEN: It seems to me that is a mistake.

DR. PRATT: No, sir. I can give you the references to the decisions from which it is clear that Congress is the only power that regulates immigration.

MR. OGDEN: My idea would be that diplomatic interference would be more effective than Congressional.

DR. PRATT: Diplomatic action is based to some extent upon legislation and also on treaty. The leading case in which the power of States in this matter was denied by the Supreme Court, is that of *Gibbons v. Ogden*, in 9 Wheaton. This has been followed by a line of decisions, the last being the *People of New York v. The Company Generale Trans-Atlantic*, published in the *Albany Law Journal*, April 7th, 1883. Still later, another case has been decided in the Circuit Court of California, in which these precedents were faithfully followed. In these decisions—a line of decisions from the time of Chief Justice Marshall down—every attempt made by States to obviate or mitigate any of these evils has been decided null and void. The Immigration Commissioners of the State and City of New York were finally discontinued on that ground.

Pardon me for a few further words. I think I know something of the sensibilities of foreign born people to any criticism upon them as a class. But if gentlemen will reflect a moment, this is not a criticism upon foreign born people as a class. I may state that the first audience of my paper, gathered together expressly for the purpose of estimating the effect the paper would have upon the foreign mind—the first audience of my paper, in my private office, was composed of two German Jews, two Englishmen, one Scotchman, three Irishmen and a couple of Scandinavians; all intelligent men. I read the whole paper to them as it is contained in this

pamphlet, and asked them if action by Congress, such as was asked for, would excite any unpleasant feelings among the foreign class. Somewhat to my surprise, and greatly to my gratification, they all, in the first place, confirmed the statements of the paper, saying that they knew personally that we were being imposed upon by the exportation of these classes to us to take care of, and that they, as foreigners, would rejoice to maintain any attempt to stop it. As taxpayers they feel the burden.

I do not know but that the purpose of the paper can be accomplished by striking out in the preamble all allusions to the proportion which the foreign born population furnish to our pauper and criminal classes; but the foreign people themselves, I have the best reasons to know, are not at all sensitive on the subject, because they know better than we do that they as a class are not responsible; that it is really the mercenary, municipal officials who have charge of the poor in these foreign countries, who are making it convenient, and economical at the same time, to send them to America.

So far as the accuracy of these statistics is concerned, of course the paper on which these resolutions are based professes to be nothing but a study of census statistics. The census chapter upon the defective classes explains with great detail the care taken in getting the statistics. The criminal list was obtained, not by any guess work, but from the dockets of the courts in the several States for a given twelvemonth. The pauper class was obtained in a similar way, by a careful compilation of official statistics; the insane were obtained partly by reports of asylums, almshouses, prisons and jails, but mainly by a very careful analysis of all returns by the enumerators in their several districts, and with this remarkable assistance; 60,000 physicians, without fee or reward of any kind, except the consciousness of doing a work for humanity, made reports, each from their own immediate neighborhood, upon the report as made by the enumerator himself, as to the accuracy of the enumerator's report, by which some cases reported were stricken off and others were added, and in various ways the accuracy of the report was secured. Now, while I have studied statistics enough myself to know how unreliable they are, if defective, I have the greatest confidence in the general accuracy of the statistics of the defective classes, as furnished by the census of 1880.

After this discussion the resolutions were unanimously adopted as amended.

The report of the Committee on Bibliography of Insanity, prepared by Dr. Hurd, was read by Dr. Palmer.

Dr. Schultz, from the Committee on Asylum Location, Construction and Sanitation, read a report on that subject.

DR. SCHULTZ: Before being aware of my appointment on this committee as chairman, I corresponded with other members in the desire and hope that a report might be made as the result of the labor and consultation of all the members. The idea miscarried, so that the fragmentary remarks to which you have listened, I wish to say, cannot be charged upon any other members of the committee.

On motion, the Association adjourned to 10 o'clock A. M.

The members of the Association spent the afternoon in a visit to Friends' Asylum, at Frankford, under the care of Dr. Hall.

The Association was called to order on Friday, at 10 o'clock A. M., by the President.

The discussion on Dr. Schultz's paper was postponed for the present.

The next report was on the "Treatment of Insanity," by Dr. Everts.

DR. EVERTS: Mr. President and Gentlemen of the Association—The task of preparing and reading a paper on so trite a subject—the treatment of insanity—to such a body as this, justifies me in stating that I shall not take it as disrespectful if any of the distinguished ex-Presidents of the Association shall go to sleep during the reading.

The report was then read.

On motion of Dr. Denton, Dr. Ghent, President of the Texas Medical Association, was invited to a seat in the Association.

DR. GRAY: I suppose the general silence of the members would indicate what is in my own mind in regard to the paper that we have just heard read. Dr. Everts has so thoroughly exhausted the subject, and so clearly, intelligently and comprehensively, that it seems to me the only thing that remains is to practice its precepts.

DR. GODDING: Lest silence should be construed into dissent, I wish to rise to say amen to every word and every letter of the paper.

DR. NICHOLS: I will only remark, Mr. President, that I am sure that none of the ex-Presidents, distinguished or otherwise, went to sleep during the reading of the paper; and that I am quite willing to unite in the general *amen* in respect to the substance of the paper, two dissenting thoughts occurred to me in respect to what may be denominated non-substantive matters. The Doctor speaks of patients doing as well in institutions under homœopathic as in those under allopathic treatment. For myself, I do not know that such is the case; nor do I know what therapeutic treatment is administered in homœopathic institutions for the insane. Their annual reports that I have had do not go into much detail in respect to the medical treatment of their patients, but my knowledge of the views of eminent homœopaths and of the practice of several of good standing, lead me to suppose that the medical men at the head of homœopathic institutions

may give drugs of great power quite as freely as others do. It would not, therefore, be my inference that patients in homœopathic institutions do well because they do not get medicine.

I do not recollect that the Doctor drew that inference for me, but the inference appears to naturally grow out of the remarks.

The other dissenting thought is this. In some works on insanity, in some annual reports and in the paper the use of "*chemical restraint*" is spoken of. The context in all cases has seemed to indicate that those words are used to describe the quieting and restraining excited and violent patient by administering drugs to them, and I have never been able to see any propriety in characterizing the quietude effected in that way by those terms. We have no evidence that opium or chloral act chemically in allaying excitement or producing sleep. Quietude or sleep produced by drugs should, it seems to me, be called *therapeutic or medical restraint*, if it be called restraint at all.

With the general views of the paper I fully sympathize and feel personally obliged to the Doctor for presenting them—the more for the admirable diction in which they are clothed.

DR. GRAY: If no other member has any remarks to make upon the subject, I would suggest that Dr. Channing should now present whatever he has to say.

DR. CHANNING: I have very little to say. It is indirectly in the line of the discussion of Dr. Schultz's paper in regard to cheap buildings for the insane. In Massachusetts, as the gentlemen here know, we have been going through the usual reaction in many of the other States in consequence of our past expensive buildings, and our insane have been collecting until now our institutions are practically all filled. The Danvers Hospital was opened six years ago, and since that time the insane have been increasing at about the rate of two hundred a year, and that is now about the rate of increase. At various times during the last three years we have considered—our and other interested legislatures have considered different plans for providing accommodation for the numbers of the insane which were gradually collecting; and one plan, especially, that has been thought about, has been in reference to provision for the criminal insane. We seem to have, in Massachusetts, an unusually large number of this class—that is, we have in the hospital at Worcester nearly seventy insane criminals. Many of them are cases of comparatively mild insanity, but the larger proportion of them are the insane convicts that have been transferred from the State Prison and other institutions during the last few years. Altogether there are considerably over a hundred insane criminals in all our different insane hospitals. The question of provision for this class of the insane was first presented in the form of a bill to the legislature and it died very shortly, and the matter was referred from one legislature to another. As the number of the insane was increasing so rapidly, last summer a joint legislative committee was appointed to consider the subject of the future provision necessary not only for insane criminals, but also for other classes of the insane. That committee sat during last summer. They decided that there was no need of a separate institution for insane criminals, although all the superintendents of hospitals that they saw very strongly

urged a separate institution. They thought that some separate treatment might be necessary in connection with the State Prison, or in connection with an insane hospital, but that is as far as they went. They found, however, that there was need of increased accommodation for the general class of the insane, and among other plans that they recommended was that of a homœopathic insane hospital, and the Committee on Public Charitable Institutions this winter has presented a majority report in favor of turning some of the existing buildings of the Westborough Reform School into a homœopathic insane hospital, to accommodate about three hundred and twenty-five at a probable expense of \$150,000. There were two minority reports, one that a portion of the buildings at Westborough should be adapted to the treatment of the insane and be under allopathic treatment, and the third one that supplementary buildings, such as those at Middletown, or perhaps at Washington, or at Kankakee, should be erected upon the ground of some of the existing State hospitals; and those mentioned, if I am not mistaken, were Danvers and Worcester. The idea of the last minority report was that the building should be erected for a hundred persons, at an expense of \$25,000, or at two hundred and fifty dollars a head, and Mr. Robert Treat Paine, Jr., of Boston, who organized our system of associated charities there and introduced this bill, was a member of the Committee on Public Charitable Institutions. He called a meeting at his house a week ago for the purpose of considering in what manner cheap buildings might best be erected to supply the present needs of our insane. A number of gentlemen were present, many of them legislators, and also architects, and two or three gentlemen interested in building and a few physicians.

Hon. Edward Atkinson, of Boston, who is very well known I suppose throughout the country as a prominent Boston citizen, especially interested in insurance, and who is the president of a large insurance company which insures mills and factories, was asked to present a plan of a cheap building for the insane. This he consented to do and some of his plans and some rough sketches which he had made on a small scale, I have here in my hand. I think it may interest gentlemen here to see these plans. He approaches the subject from a rather original point of view. Dr. Schultz spoke of so many of our hospitals being designed by architects who knew very little about the wants of the insane. Mr. Atkinson is not an architect but he understands thoroughly factory architecture, and it seemed to be Mr. Paine's idea to see if Mr. Atkinson, with his special knowledge of cheap, big buildings for manufacturing purposes, could not suggest some shape or form of building which would be cheap and in a certain measure would be appropriate for the insane. So he approached it from that unusual point of view. As he said, he knew very little about what the insane wanted, and the most he attempted to do was to give a plan of a mere shell of a cheap building which might be adapted to their use. He has, since given his plans on that evening, somewhat modified his views I am told. He discovered then that some things were necessary that he had not known of, in providing for the insane. Mr. Atkinson's plans are a direct contrast to those of a hospital like Danvers, and furnish a good illustration of the extreme of reaction. He presents several of these plans. First he

described a three-story building, and in illustration of it passed around the plan of a mill, showing the system of piping arranged for an automatic sprinkler. An inside view of this building gives an idea of an approved factory of three stories. Mr. Atkinson does not recommend a three-story building, but that section of the mill gives a good idea of the construction of the floors and of the supports of the three-story mill.

[The plans were exhibited.]

This plan, number two, is for a one-story building. This plan he especially recommended, although he modified his suggestions after learning that a one-story building would not be as well adapted to the insane as a two-story building. His plan number two was a frame building, although he said it could be a building of brick at very nearly the same cost. He would build this one-story building with a unite of sixteen. That is, the separate rooms may be sixteen feet square; the hall sixteen feet wide; open dormitories sixteen feet wide; and the large rooms, three sections, each one sixteen feet square. The walls of brick or wood as I have said before. The roof of three-inch plank, covered with gravel or with duck properly prepared. It seems to me such a plan of roof would be a very good one for a lunatic asylum. It is simply nearly a flat roof, raised a little in the middle, of three-inch plank, covered with gravel or with duck, the duck saturated with pine tar or mineral paint. The partitions would be of two-inch plank, grooved and splined, plastered solid, either on wire or dove-tail lath nailed to the centre of the planks, so as not to be affected by their shrinkage. These one-story buildings could be set up in sections in one line, on the sides of a quadrangle, or in the shape of an H or Greek cross or star form, and each section could be separately constructed or extended. This special arrangement, of course, if it is in a Greek cross—and sections too near together are not to be recommended—but the general plan kept up in the sections and proper distances, is one that might be very readily available. Such a building as this could be constructed for about seventy cents, or between seventy and eighty cents a square foot, or without the various internal arrangements adapted especially for the treatment of the insane it would cost not over one hundred and fifty dollars a person. With the boilers and the ordinary apparatus needed to carry on a hospital, it could be erected probably at two hundred dollars a head, on this plan. Here is a view of the one-story, not precisely like this that is mentioned on the other plan, but somewhat similar to it, showing the size of the timbers needed for a one-story building, and somewhat the internal appearance.

DR. EARLE: I would propose, as we have a great deal of business on hand and as our time is so short, that Dr. Channing let the plans lie on the table, where they may be examined at pleasure. As the Doctor well remarked, they show the extreme reaction from what I was about to call the insane delusion which manifested itself in the erection of the Danvers Hospital.

I wish at the present time to ask the assistance of the members of the Association. It is desirable that we should have, as I do not doubt that we shall have, an interesting meeting next year at Saratoga. Inasmuch

as our closing session will be held this evening, it will become necessary to appoint, before that time, the members of the standing committees—the same committees a part of which have reported this year. I greatly desire that we shall so fill them that the right men will be in the right places. For myself, I am not sufficiently familiar with the special studies of the different superintendents to decide in all cases, who will be the best men to appoint as chairmen of those committees. I hope that if any member of the Association knows of another member who is especially qualified for either of the committees, he will mention the name of that gentleman to me; or, should there be any member who is pursuing studies in a special direction, I trust that he will not be so modest as to keep his name to himself. I am very earnest in pressing this subject upon you and asking your assistance. The first standing committee is on the Annual Necrology of the Association; the second, on Cerebro-Spinal Physiology; third, on Cerebro-Spinal Pathology; fourth, on the Therapeutics of Insanity and New Remedies; fifth, on the Bibliography of Insanity; sixth, on the Relation of Eccentric Diseases to Insanity; seventh, on Asylum Location, Construction and Sanitation; eighth, on the Medico-Legal Relations of the Insane, and ninth, on the Treatment of Insanity.

I desire, further, to seize the present moment to make a few remarks on a subject which I think ought to be brought to the attention of the Association. Perhaps all of the superintendents of hospitals who are present, received, a few months ago, letters from New York asking for the number of patients admitted to their institutions the cause of whose insanity was alcohol. I declined to answer those which were addressed to me. Knowing that I could give no adequate idea of the actual number, or the proportionate number of my patients—whether those now present or all who have been inmates in past time whose insanity was caused by intemperance; I believed that any attempt to answer the questions by statistics would do more harm than good.

A few days ago the result of that inquiry was sent to me in the form of a pamphlet. Undoubtedly it was sent to other superintendents. I have not had time to read it, but have so far examined it as to learn that its author comes to the conclusion, derived from information of all sources, but chiefly from the superintendents of hospitals, that the percentage of insanity caused by intemperance is seven, or about seven. I leave it to you to form your own opinions whether that approximates in any very considerable degree of nearness of approach to the actual proportionate number. I still believe that those statistics will do much more harm than good. There was not, apparently, allow me to say, sufficient care on the part of the superintendents who answered the letter. As Dr. Chapin remarked in essence yesterday, statistics are very delicate things and unless made with great care they may tell great falsehoods.

At several of the hospitals, the figures in the column "Number of Patients Admitted" are *not* the numbers of patients admitted, but, apparently, the whole number in the house in the course of each consecutive year. Every patient received is consequently counted every year so long as he remains in the hospital. The effect of this repetition is greatly to increase the sum of what are called admissions, but are not what they

profess to be. Thus, at one hospital, which according to its annual report, admitted, in the course of thirty years, 7,061 patients, the number of admissions is made by these New York statistics to be 20,658. The number of cases alleged to have been caused by intemperance was 1,141. The *actual* percentage so caused was 1141-7061, equal to 16.15, or nearly one-sixth of the whole. But the apparent percentage which is the result of the New York statistics, is only 1141-20658, equal to about 5.57, or but little more than one-twentieth of the whole.

At another hospital the swollen numbers of the New York statistics make the admissions, in ten years, 6,187, whereas the true number, as shown by the annual report, was 2,451. The number of cases originating in intemperance was one hundred. The New York statistics make the percentage 100-6187, equal to 1.61, whereas the *true* percentage is 100-2451, or 4.61.

A very similar letter to the one just mentioned has since been received from Missouri. A committee of some association in that State requested the same or similar statistics in regard to intemperance as a cause of insanity. I answered that by first giving my correspondent the number of admissions from the opening of the Northampton Hospital to the present time, and then informing him that if he could sit down and make a shrewd Yankee guess he could obtain figures which would be of more actual value than ostensible facts which I could give him, especially if the committee which used them would acknowledge that they were obtained by guess work.

It is not necessary for me to point out the difficulties involved in this subject or to mention the impossibility of giving to outsiders, from the statistics which we have, an idea of the extent to which intemperance is probably a factor in the production of mental disorders.

DR. GRAY: Mr. President—I am glad that you have brought this matter before the Association, as I understand, formally. I have received, I suppose in common with other superintendents, on an average certainly of once a week, a claim or circular of some kind for information, upon which persons desire either to write a paper, or to write a book, or to appear before some association, or execute some philanthropic purposes for the good of men. As a general rule I have put them in the waste basket. To me, a good many of them seem to be simply sponges, sucking up what they can get here and there and then appearing as authors. Occasionally, when I have complied, after a second or third letter telling me that I was either the only one, or nearly the only one in the State who declined to give the information, and furnished it, I have found that it was generally the case that the information was desired by the writers in order that they might appear as authors, either on opium or liquor, or statistical information, or in connection with the administration of various remedies. I have even been asked for detailed information as to the number of doses of various medicines given in the hospital; the persons calling for it wanting to write a paper, or appear before the public on chloral or bromides, etc., thus sponging all the information possible from persons of experience, they having little or none themselves, and then appearing as great authors on the therapeutics of these subjects. I doubt very much whether any of

those circulars ought to be answered, except they come from some responsible body. I do not know exactly what association in New York the President referred to. I have received four or five pamphlets.

DR. EARLE: It was a brewers' association.

DR. GRAY: I think I answered them after I had received additional letters from three or four prominent and responsible gentlemen, among them one or two lawyers, saying they thought a public officer ought to furnish the statistics upon any subject asked for by reputable men, or refer them to where the statistics could be found. Afterwards I furnished the statistics as they appear in the reports made to the Legislature upon the subject. I have not received any reply or any pamphlet, but I presume if the rest are in there that I appear with them. However, I have made up my mind to ignore those things as far as possible, because I do not think that that sort of pseudo-science, or whatever it may be called, should be in the least encouraged. I think spontaneous labor on the part of men who know about the subject they are writing upon, who give just what they know themselves and compare it with what they may get from others, or on general record, is the only way that authors should appear. I believe that these sponges should be dropped.

DR. EARLE: I am very glad to have heard Dr. Gray's remarks. The object in this case appears to have been, as I suspected from the beginning, to sustain a trade, the support of which is the support of the cause of intemperance. The pamphlet shows that only seven per cent. of the cases of insanity are caused by intemperance, and then gives the National revenue from the production of alcoholic drinks in such a way as to lead to the inference that the nation gets abundantly paid, perhaps much overpaid for the little detriment of the seven per cent. of insanity which is caused by it.

DR. NICHOLS: The same application for information upon this subject came to me. It appeared to come from an officer of a brewers' society, and I supposed it was made entirely in the way of trade—that is, to make it appear that alcoholic, and particularly malt liquors, did not produce as much insanity as is generally supposed. I think I received as many as three applications for the same information from the same party.

DR. EARLE: I had three or four.

DR. NICHOLS: The second and third applications stated that an additional number of superintendents had responded. I treated the applications as Dr. Earle says he did. I didn't furnish any information.

While I am up I will take the liberty of saying that the subjects presented by Dr. Channing appear to me to be of a great deal of moment in connection with the class of people in whose welfare this Association was organized and is met here to promote, and that I very much hope that Massachusetts will not be led into the concretion, so to speak, of the extreme reaction of sentiment which has taken place in that State in relation to the cost of its institutions for the insane. Nobody will deny that one, perhaps both, of the institutions last erected in that State, including the large sums expended in preparing the sites for building, cost a very unnecessarily large sum, but the money can not in any way be called back

into the public treasury and its expenditure has not impoverished the State. It is still perfectly able to provide for the increase of insanity within its borders, and I cannot think that it will be led into putting up card-board shanties that will be neither comfortable, healthy and safe as respects patients taken care of in them, nor reputable to that great commonwealth.

From the outset of the consideration of the subject of making proper provision for the criminal insane my judgment had in certain cases favored the erection of buildings or quite separate wards in connection with our State institutions for the treatment of this class of patients. We all agree that the criminal insane should not be placed in the same wards with innocent, reputable people and that they should not be confined to the cells of a prison. Now, the rational course, it seems to me, is to adopt some scheme of separating them that is feasible and practicable. New York has a sufficient number of the criminal insane to justify it in providing and maintaining a separate asylum for them. Other States have a sufficient number of this class to justify the same procedure, but I believe New York is the only State that has such an institution, though the separation of the criminal insane from other classes has been strongly advocated by this Association of Superintendents in their annual reports for at least twenty-five years. Massachusetts might have an entirely separate institution for the criminal insane, but I cannot think that altogether desirable under the circumstances.

DR. EARLE: Not in Massachusetts.

DR. NICHOLS: But there are States beside New York that probably have a sufficient number of criminal insane to justify an altogether separate provision for them. The plan that is suggested by Dr. Channing, or that it is now proposed to carry into effect in Massachusetts, is such a one that the small States can carry into effect; and whether a State has six or sixty criminal insane, it can in that way give them the most enlightened and humane care at a moderate expense; and I believe it can be done without encroaching upon the welfare of the ordinary insane in public institutions.

DR. GRAY: I was not present when the matter came up, but I think I ought to say something in connection with the remarks of Dr. Nichols. I have had some experience in having criminal insane, both convicts and what are ordinarily called criminal insane, in a State institution. I am utterly opposed, looking through my experience, to any such plan as a ward, connected with a State institution or any other institution, for the care of criminal insane. In the first place, the proximity of that class—for they are a class that should be kept away from the ordinary insane—is unpleasant, and it is difficult to have them properly cared for without, on the one hand, too much isolation; and, on the other hand, if they are mingled with the ordinary classes in their exercising grounds, in the work upon the farm, or walks to anywhere in the vicinity, that immediately breaks up any separate management. Besides that it would be unjust to the criminal insane themselves to house them together in a ward, the quiet and orderly with the noisy, disturbed or dangerous. It throws aside at the very beginning all the ideas of classification, by placing an injurious attrition upon each other. The very purpose, therefore, of making them

feel agreeable and comfortable, and putting them under enlightened supervision, is thwarted. Such a ward would become merely an almshouse ward.

I have been in an almshouse where they took care of the chronic insane with all classes in one ward. There were the noisy, maimed and epileptic patients; the violent, the quiet, the demented classes. This would be the same thing. The State of New York projected this institution a great many years ago, that now has its existence there, and is highly successful. At that time I visited, at the request of the Governor, all the prisons of the State; examined all the convicts and made a report to him as to the number and character of the prisoners there who were actually insane, or who were so insane as to disturb the discipline and order of the prisoners. The institution was erected, organized and then a law passed subsequently authorizing the transfer from the State asylums of such criminal insane as were recommended to be transferred by the superintendents, after examination into each case by a Justice of the Supreme Court, he having the final responsibility. I am glad to say that this last winter, as one of the results of the legislative investigation that was had, was the passage of a more comprehensive law, similar to the provisions (or in essence) that exist in England; that is, instead of restricting the cases of transfer simply to murder or attempted murder, and arson and highway robbery, there is no designation of crime but embraces all persons who have committed crimes, leaving it open then to transfer all criminals who are dangerous or injurious to the welfare of the ordinary insane in the hospitals, following the course in England of transfers from other county asylums of persons of the same class to Broadmoor. Now the system has certainly acted well there, and I think—I speak in the absence of Dr. McDonald, who is Superintendent of the Criminal Asylum in our State—it is conceded by those who have had opportunity to look into the matter, our State officers and the Legislature, that that institution is a success; I know that it is an infinite relief to the State Lunatic Asylum at Utica, and I should be very sorry to see any movement which would tend to place the criminal insane in isolated confinement in connection with any State institution. Of course, if the States are too small, as some of the New England States are said to be, I can see no objection to the erection of some central hospital, where one State could secure an opportunity of transferring its criminals to the care of that institution. I do not know how the matter would work, but if there are from seventy to one hundred or more in the State of Massachusetts, that would be half as large an institution as some of the members of the Association believe ought ever to be erected. But any institution that covers over fifty persons, could very easily arrange a proper classification, so that these people would not be brought together in a confused, heterogeneous mass of mania and melancholy, dementia and general paresis, and the filthy, the orderly and the quiet and neat all put into one ward. I think nothing could be worse than that. If I had a friend or acquaintance so unfortunate as to be a criminal, I should pray that he be left in prison, than that he should be changed under such a system as that.

DR. CHANNING: I do not think that Massachusetts will put up such buildings as Mr. Atkinson has drawn here. I simply brought them here as suggestive of what were better than card houses, warm and well venti-

lated, etc., and thought they might be interesting to the Association to look at. The chances seem to be now that we shall have a homœopathic hospital there—that the building of the Westboro Reform School will be adapted to the use of three hundred and twenty-five insane persons, under homœopathic treatment. In other ways we have, perhaps, retrograded somewhat in Massachusetts in regard to provision for the insane. A bill was passed last winter, that cities of over 50,000 inhabitants *may* erect an institution for the care of their insane. Just now we have only two or three cities of more than 50,000, so there will not be very many of them at any rate. But our State Board of Health, Lunacy and Charity, has recommended the transfer of the insane from the cities and towns back again to the almshouses, especially if they have an insane department. In consequence, at the present time, we have quite a large number of persons under lay management. For instance, in Lowell the insane department has now, I believe, fifty or sixty insane persons, and they are visited by a doctor from the city once or twice a week. There are also insane departments at Salem and Lawrence. When I spoke of the proposed plan, I did so for the purpose of showing how a number of insane persons might be kept cheaply, but not to recommend it.

DR. NICHOLS: Are there not quite a number of insane kept at Salem?

DR. CHANNING: I do not think a very large number, probably fifteen or twenty.

DR. NICHOLS: Not as large as they have had?

DR. CHANNING: I think they were sent to State hospitals, and not sent back for want of proper accommodations.

In regard to an institution for insane criminals, having been connected with the Auburn Hospital for some time, I got some knowledge of insane criminals; and having also examined insane convicts in the State prisons and reformatories of Massachusetts, I have a little idea of the treatment of insane criminals both in special institutions and in general insane hospitals. Insane convicts, where they are treated with the other insane in a general hospital or in a separate ward, from what I have seen myself, are a source of great embarrassment. At Worcester, where the number is very large, wards were supposed to have been built especially for that class. They cannot all be treated satisfactorily together in one ward, there are so many varieties of insanity among such a large number of insane convicts. I think it is the testimony of Massachusetts' Superintendents, that it is a source of great difficulty with them. But the State of Massachusetts retains insane convicts in the prisons, because of no other place to send them. We do not feel like obliging the superintendents of hospitals to take them, as they are often disturbing and dangerous men. I do not feel like recommending such a transfer, although I know it is the quickest way to get such accommodations as we ought to have. The Warden has to keep them closely confined, and they do not receive the medical treatment that they need; and yet, if they go to the insane hospital they make so much trouble that it seems only right to keep them confined in a close room as in a prison. The picture is very different as seen at Auburn, where the insane criminal is very much like any other insane man, except that he is confined

more closely within four walls. He has more privileges, a greater amount of freedom and much better treatment in every way than it is possible to give many of the insane convicts in a lunatic hospital. Men who are disposed to be vicious, cannot be allowed to associate with other patients without the greatest injustice; and where one has seen both sides of the picture as much as I have—having always been interested in the subject and seeing a number of insane criminals every year—one is much impressed with the advantages of a separate institution for insane criminals.

DR. EARLE: Dr. Nichols suggested, as a palliative, at least, of the mistake made by Massachusetts in the erection of so expensive a hospital as that at Danvers, that Massachusetts was not impoverished by it. Of course she was not. If she had expended ten millions upon it she would not have been. But that does not relieve the taxpayers of the State from the effect of the burden of to-day, which is, that they are paying ninety thousand dollars interest, annually, on the cost of that establishment. Aside, therefore, from the actual necessary current cost of support of its inmates, there is this additional ninety thousand dollars a year to be considered as a part of the expense to the State.

The hospital was intended for four hundred and fifty patients. The commissioners and the physician who advised them, always maintained that it never ought to contain more than that number.

Provided, therefore, that the number of patients had been limited to four hundred and fifty, the actual cost to the taxpayers of Massachusetts, of the insane paupers—and I suppose considerably over three-fourths of the inmates of Danvers are paupers—are they not, Dr. Channing?

DR. CHANNING: I should think so.

DR. EARLE: The actual cost, then, would be about eight dollars each, per week. Instead of having four hundred and fifty patients it has almost seven hundred and fifty. When I last heard, it had seven hundred and thirty. The hospital never paid its running expenses until the last official year, when the average number of inmates was nearly seven hundred.

In regard to the plans which have been shown by Dr. Channing, and the remarks upon them by Dr. Nichols, I may say that the gentlemen may rest assured that Massachusetts is not going to commit itself to any unwise experiment. That State will never, unless a great change takes place, house its insane in buildings where their physical comforts will not be sufficiently administered to. As an evidence, take our asylum for the chronic insane, at Worcester. A member of the State Board of Health, Lunacy and Charity, within the last year has said to me, "It is the best hospital in the State"—meaning, as I inferred from the previous conversation, the most comfortable and home-like.

DR. NICHOLS: Better than Northampton?

DR. EARLE, [hesitating.] I quote from a member of the Board of Health, Lunacy and Charity:

The whole subject is in the hands of a body of men who will never see their fellow men improperly treated—a body of men and women, for women are beginning to form an important factor in the administration of the charities of Massachusetts.

DR. SCHULTZ: Mr. President—With reference to the remarks of Dr. Nichols I wish to say something. He did not elaborate his remarks and I do not know fully what his ideas are in regard to the association of these two classes of people, the ordinary insane and the insane convicts; whether he believed they ought to be in the same building, or in the same town, or on the same farm. We have two hundred and sixty acres at Danville and have only four hundred patients, and yet cannot find room enough for suitable exercising grounds, for they are mostly unskilled laborers and they require plenty of elbow room. On that account we go out for exercise into the lanes and roads of the neighborhood and the consequence is that we are blamed for trespassing, justly, perhaps. Now, if we had insane convicts, classified and known as such, we should be restricted still further, as they could not come in contact with each other out of the buildings and away from them, any more than in the halls or amusement room or chapel.

When the Danville Hospital was being erected the attempt was made to have a part of the building appropriated for the insane convicts of the State, but while deliberations on the matter were in progress an article appeared in one of the medical journals of this city, by one whose ability to speak with authority none of us would for a moment question. He maintained with much emphasis and philosophy, I think, that it required one kind of mental organization, habit of thought and moral disposition to take care of the criminal class, and a totally different one to take care successfully of the ordinary insane, and that the two classes could not be suitably cared for under one management.

When, some years later the buildings had to be in part re-erected, the same question arose once more. After a somewhat full conference at the hospital, by a Legislative Committee, the Board of State Charities and the Trustees and Officers of the Hospital, the conclusion was arrived at and acted upon that it was inexpedient to take care of the insane convicts in the building. I hardly know whether I am more surprised or more pained to hear a statement made in this meeting, that these two classes of patients should be taken care of together. I think the position of this Association ought to be decidedly, that it is utterly wrong to treat them together, and it is to be tolerated only as the lesser of two evils.

DR. NICHOLS: Dr. Channing and Dr. Schultz appear to come to a common ground on this question.

No man can be more deeply impressed with the importance of separating the criminal from the reputable insane than I am. When I was an assistant at Utica a considerable number of criminal insane were treated in that institution, and at Washington a very few such patients were treated at different times, and I am unable to express my sense of the injustice to the reputable insane of treating the two classes together. And if they are treated under the same economical and medical organization as the ordinary insane, I have not the slightest idea of having the two classes come in contact with each other, and cannot see that such contact would be necessary. A State institution should have as much as two hundred and sixty acres of land—some have a much larger area—and I cannot see why fifty or sixty acres of it cannot be walked in, buildings be erected in such enclosed

grounds, and the criminal insane of an asylum district be treated there just as well as they are treated at Auburn.

Perhaps I was unfortunate in using the word *ward*, though I think I did use the word *building*. I cannot think that any one here really supposes that I have for a moment entertained the idea of putting all the criminal insane of one sex in one ward—much less that I have entertained the idea of putting both sexes in one ward—which language used in this discussion might be thought to imply. If a separate building in a separate enclosure provided for three (3) classes of each sex, the classification would be more liberal than has always been provided for the reputable insane in State institutions; and in that proportion of the almshouses of the country in which from ten (10) to a hundred (100) or more insane persons are taken care of, are there six (6) distinct wards, three (3) for each sex? Probably in no more than one (1) out of ten (10.) It is from my sense of the crying evil of associating the ordinary and the criminal insane, and of the urgent necessity of everywhere disassociating them that I am in favor of a plan or scheme that the State legislatures are like to authorize and make the necessary preparations for. I am not in favor of a retrograde movement in this or any other matter, unless it may be, to depart from a single line of endeavor that has long been pursued without desired results, except in one instance as far as I now recollect.

DR. CHANNING: I understood Dr. Nichols to say a ward.

DR. NICHOLS: If I used the word *ward* alone, I was in error. I should have used the word *building*.

DR. CHANNING: Could not a building be put up on the grounds of an existing hospital? On the score of expediency it might be the best plan; but I think the best or ideal plan is an institution for the criminal insane, that is wholly and absolutely separate, where there is no possibility of association or of demoralization in the environment or in the proximity of that class. I think the insane criminals, themselves, could have more liberty and more treatment, if they required treatment, by themselves, on a good-sized farm, which they could perfectly, work and carry on, than in proximity to another institution. I think with a tenement, one would have an opportunity of curtailing the whole. That would be the only practical advantage.

DR. NICHOLS: The erection of a building on the grounds of an existing hospital—on a part of the farm set apart for the treatment of criminal insane—is just what I advocate where it is not practicable to have a separate asylum for that class of patients. You would consider it necessary to have that part of the farm walled in?

DR. CHANNING: Not unless there was an institution near by.

DR. NICHOLS: I think it should be walled in in every case, in order that the patients might have an easy liberty of personal movement, without the liability to the escape of persons very dangerous to be at large.

It has been proposed that two or more States should unite in the establishment of an institution for the criminal insane for their common benefit. All that can be said of that scheme is that it has not yet been carried into

effect though proposed many years ago, and that there are many reasons why it is not likely to be.

DR. CHANNING: There is a certain number that will escape, and I think provision should be made in insane hospitals for that class. They should not be allowed the same privileges, should be guarded very closely, placed in particularly strongly constructed rooms, and also more closely watched when they go out doors. You know Dr. McDonald allowed quite a large number to go out into the neighborhood for farm work, and into the fields around. Even in criminal institutions a large number can go out under the care of attendants, without the walls. It would be very expensive to put up walls around a large farm.

DR. GRAY: Wouldn't an institution on a farm, or anywhere else, have to have a medical officer detailed for service there?

DR. CHANNING: Certainly. In regard to card-board houses, or cheaper buildings, Dr. Palmer told me to-day that at his hospital, near Kalamazoo, they have what I think he calls "sheds," where, if I am not mistaken, he has forty patients, at a total cost of fifteen hundred dollars; they are there in the winter as in the summer, and he said they are very comfortable.

DR. EARLE: It is necessary, in justice to myself, that I should make an explanation in regard to the subject which has been under discussion. While Dr. Gray had the floor, I expressed the opinion that it is not desirable, in Massachusetts, to have a separate criminal asylum. It is not because I do not think that such separate treatment is best. My remark was based upon the fact that the number of patients in Massachusetts who, in my opinion, ought to be domiciled in such an institution, is too small, at present, to justify the construction of an independent establishment for their accommodation. Could such a thing be effected, I would hail the day upon which it might be decided that the States of New England should unite in the erection of a joint asylum for the criminal insane. Dr. Gray alluded to the number of the criminal insane in Massachusetts. Three quarters of them, roughly speaking, are criminal only in the very lowest degree, and no worse than many of the patients by whom they are surrounded in the present hospitals. An insane man, happening to get drunk, is taken up in the streets, sent to the Jail and thence to the House of Correction. He is brought from that institution to ours or one of the other State hospitals, and in two or three months the term of his sentence expires. Shall all these cases be confined in a separate institution with other convicts? If those, why not a large proportion of other pauper insane in the institutions who are really as objectionable as these petty criminals themselves? I do not wish to prolong the discussion, but I thought it right to prevent myself from being misunderstood.

DR. GRAY: I would say at this point that those persons are not recognized in our State as criminals. They are simply persons who have not been tried by courts or by juries for crimes, but are found to be dangerous to be at large, and are not subject to transfer to Auburn.

DR. EARLE: In our State they are called criminal insane, and the fact that so large a proportion of them were arrested for merely petty offences is perhaps one of the chief reasons why Massachusetts has not done some-

thing toward making separate provision for them. The numbers of the really criminal insane, that is, those convicted of felony and those who have committed homicide or other capital crimes, but have not been put on trial, are very few.

Dr. Fisher then read a paper containing a history of a case of tumor of the brain.

Dr. Chapin read a paper on "Mental Capacity in Typhoid Fever."

On motion of Dr. Gray, it was

Resolved, That if any member of the Association wishes to attend the International Medical Congress, he shall be furnished by the Secretary with a certificate as delegate.

On motion, the Association adjourned to 8 o'clock P. M.

The Association spent the afternoon in visiting the Department for Males of the Pennsylvania Hospital for the Insane, under the conduct of Dr. S. Preston Jones.

The Association was called to order at 8 P. M., by the President.

Dr. Chapin offered the following resolution:

Resolved, That Assistant Physicians of State and Incorporated Hospitals and Asylums for the Insane, who have been continuously on service for a period of years, are hereby constituted members of this Association during their official connection with their respective institutions.

On motion of Dr. Chapin, the resolution was referred to a committee consisting of the President, Vice President and Secretary, to report at the meeting in 1885.

The Secretary read the list of the Standing Committees for the year 1885.

[The list of Committees is here omitted, the same having been published in the July (1884) Number of this JOURNAL.]

Dr. Callender, from the Committee on Resolutions, reported the following:

The Association of Medical Superintendents of American Institutions for the Insane, about to terminate its meeting in this city, in which it was organized forty years ago, and in which it has held seven of its annual meetings, in the customary resolutions on the occasion is inspired by

mixed emotions. The selection of Philadelphia for this meeting was mainly induced by the hope of the presence at its deliberations of one of its venerable and eminent founders, whose weight of years and declining strength was known to the membership—the late Thomas S. Kirkbride, M. D. The inscrutable wisdom of Providence has frustrated that hope. His face was not among us, but the memory of his abilities and his rare virtues was left to us to honor, and will be green as long as the Association shall survive. This meeting has been graced, however, by the presence of another of the links yet connecting the body to the day of foundation, in the person of our distinguished President, his contemporary and colleague, and the Association congratulates itself upon the fact and cordially wishes him length of years and usefulness.

The Association records with pleasure, that the authorities of public institutions of this city with which our work is affiliated, and the resident members of the medical profession have greeted it with their accustomed liberal hospitality, and the observation of our visit is that Philadelphia, the pioneer in this country of humane endeavor in behalf of the insane, is yet abreast of the current of progress in general philanthropy guided by medical science.

To the Board of Managers of the Pennsylvania Hospital for the Insane, and to Dr. S. Preston Jones, for many years in immediate superintendency of the Male Department of that renowned institution, we are indebted for the privilege of visiting the wards of that department and for their courteous attention.

To Dr. John C. Hall, the Superintendent, and the Managers of the Friends' Asylum at Frankford, we are also indebted for an agreeable afternoon in the inspection of the appointments of that institution—a model of neatness and comfort, and an honor to the specialty.

The Association expresses its high appreciation of the invitation to visit the Medical Society of the State of Pennsylvania in its annual session, and the opportunity afforded to mingle with its members and of attending the reception held by its eminent President, Henry H. Smith, M. D., of this city, in the rooms of the Philadelphia Academy of Fine Arts.

The thanks of the Association are returned to the Guardians of the Poor, of the city of Philadelphia, for an invitation to visit the Insane Department of the Almshouse; to the Managers of the House of Correction, to visit that institution, and also to the Directors of the School for Imbecile Children at Elwyn, Pennsylvania, and its regrets expressed that the limited period of the session and the immediate business of the body rendered it impossible to avail itself of their kindness.

The reporters of the city press, in attendance upon the sessions of the Association, have laid it under obligations for their full and accurate minutes of its proceedings; and Messrs. Kingsley & Co., of the Continental Hotel, have its thanks for the quiet and commodious parlor furnished for its use, and for their attention and courtesy to its members as their guests.

On motion of Dr. Curwen, the Association adjourned to meet in Saratoga, N. Y., on the third Tuesday of June, 1885.

JOHN CURWEN, Secretary.

SELECTIONS.

HARVEY'S FORECAST OF COMING EVENTS.—We note the following from Dr. J. Russell Reynolds' "Harvein Orations," published in the *British Medical Journal*, October 25, 1884:

"We find him saying, 'In general, the first processes of nature lie hid, as it were, in the depth of night, and, by reason of their subtlety, escape the keenest reasons no less than the most piercing eye' (*Anatomical Exercises on the Generation of Animals*, p. 225). In another paper, "All living things . . . derived their origin from a certain primary something or primordium, which contains within itself both the 'matter' and the 'efficient cause,' and so is, in fact, the matter out of which, and that by which, whatsoever is produced is made" (*Thesis on the Uterine Membranes and Humors*, p. 554). Again, "It appears advisable to me to look back from the perfect animal, and to inquire by what process it has arisen and grown to maturity, to retrace our steps from the goal to the starting place; . . . so that we shall perceive from what primary matter and from what efficient principles, and in what way from these, this plastic form proceeds. . . ." (*Introduction to Exercises on the Generation of Animals*, p. 163). Further on, in the same paper, we find him saying, "Man comes into the world naked and unarmed, . . . as if nature had desired that he should be guided by reason rather than be driven by force; therefore she did endow him with understanding, and furnish him with hands, that he might himself construct what was necessary to his clothing and protection. To those animals to which nature has given vast strength, she has also presented weapons in harmony with their powers; to those that are not thus vigorous she has given ingenuity, cunning and singular dexterity in avoiding injury." (*Ibid.*, p. 425.) In connection with this, he proceeds to mention the "ornaments * * * offence weapons, teeth, horns, spurs, and other implements employed in combats . . . the subject of dispute being no empty or vain-glorious matter, but the perpetuation of the stock in this line or that; as if nature intended that he who could best defend himself and his should be preferred to others for the continuance of the kind." (*Ibid.*, p. 425).

In the passages just read, we have, as it appears to me, very much the same ideas as are now conveyed by the term "protoplasm;" "the relation of man and animals to their environments;" and the doctrine of "the survival of the fittest."

With reference to the significance of the primordium, the protoplasm, as seen by Harvey, let me read another passage from his writings. Speaking of the lowest forms of life known to him, he says: "These have no heart, as not requiring any impeller of nourishment into the extreme parts; for they have bodies which are connate and homogeneous, and without limbs; so that, by contraction and relaxation of the whole body, they assume and expel, move and remove the ailment . . . The whole is used as a heart, or the whole animal is a heart." (*An Anatomical Disquisition on the Motion of the Heart and Blood*, p. 76.) Further on, "All local motion proceeds from, and has its original, in the contraction of some part." (*Ibid.*, p. 81.) Here we have, as it seems to me, an account of the simplest form of life; his counterpart of the "amœba," as we may find it described in the most modern and, to my mind, one of the most able text-books of physiology of our days. (Introduction to Michael Foster's *Text-book*.) —*Philadelphia Med. and Surg. Rept.*

A CASE ILLUSTRATING SECONDARY NEURATROPIC PHOBIAS.—Dr. C. H. Hughes (*St. Louis Med. and Surg. Jour.*, Oct., 1884) reports the following case: John C., aet. 52, of spare build, height five feet eleven inches, weight one hundred and forty pounds, blue eyes dark (now gray) hair, of Irish birth and by occupation, most of his life, a hotel porter, is married and the father of three children. He has never been sick so as to be confined to bed. Has had spermatorrhœa, and been treated for it in various ways without material benefit. He is a man of mediocre intelligence, steady in his habits, and never used whiskey or tobacco.

He has now cutaneous anæsthesia in face, arms, thighs and hands and intense burning sensations in feet. Eats sparingly and sleeps badly. He has been employed in one of the principal hotels of this city for many years and by frugal economy has accumulated considerable means for one of his station in life. He confides in me, but is suspicious of others. His *speech* and *manner* betray *timidity* of mind and lack of resolution. He has *anthropophobia*, being afraid to meet any one about the house,

as he says, and *polyphobia*, "afraid of everything, sometimes," to use his own language. He has also *phobophobia* being "afraid something is going to happen to frighten him."

His failure of memory is quite marked. So much so, that the ordinary orders in regard to trunks, to which he has been accustomed, he is obliged to note down at once, or he would forget the order and the number of the room in the house before reaching the latter, yet this failure of memory is secondary to his fear of forgetting and the indirect product of it, his mind being preoccupied with the fear of forgetting, so that the impression of office instructions are evenescent and indistinct by reason of this preoccupation, for he bears in mind instructions concerning his medicine and hygienic advice and carries them out precisely. His volition is impaired and quite abeyant to one who gets his confidence, so that, notwithstanding his suspiciousness, he can be unduly influenced. He has improved some under systemic electricity, induced sleep, peptones, and reconstructives, but will likely pass into the insanity of premature senility, the consequence, in part at least, of over sexual strain. There is atheromatous degeneracy of the radials, an anæmic cardiac bruit, he has few remaining teeth and his skin is dry, harsh and shriveled.

This is not a case of neurasthenia pure and simple. It is a condition of greater gravity. Yet the morbid fears of neuratrophia are marked and prominent. It is the neuratrophia of atheromatous degeneration of the cerebral vessels.

INABILITY TO WALK BACKWARD EASILY, A NEW SYMPTOM OF LOCOMOTOR ATAXY.—The *British Medical Journal* directs attention to the fact that ataxic patients experience difficulty in walking backward at a time when they may have no trouble in walking forward. Their heels catch the ground. If they walk backward, it is in a halting, odd, and timorous fashion, which at once attracts attention, if they are capable of thus walking at all.

THE PROGNOSTIC VALUE OF ABSENT TENDON REFLEX IN DIABETES.—Professor Bouchard (*L'Union Médicale*) on the prognosis of saccharine diabetes says, in forty-seven cases of diabetes in which the tendon reflex persisted, there were only two deaths, or one in twenty-

three; in nineteen cases with absence of the reflex there were six deaths, or one in three.

ON THE MECHANISM OF EPILEPSY.—Lecture at the Hotel Dieu, by Prof. Germain See, reported in the *Med. and Surg. Rept.* 1st. Over-excitation of the reflex function in general, especially that of the bulb, through the instrumentality of the different parts of the nervous system, "excito-motor epilepsy." 2nd. Augmentation of the excitability of the vaso-motor center, located in the bulb, "vascular epilepsy." 3d. Excitation of the cortex cerebri, "cortico-cerebral epilepsy." "When the cerebral system comes under the persistent influence of a lesion of the spinal cord, of certain nerves, or of the encephalon, the medulla oblongata becomes the seat of a functional modification, that is to say, an aggravation of its reflex power, which makes the organ a prey to the least excitations; the bulb can itself engender convulsive attacks without the least exterior determining cause. Here we have the first theory. The acquired property of the bulb extends naturally to the vaso-motor center in the bulb; the excitation of the vaso-constrictor, then of the vasodilator nerves, determines anæmia, then hyperæmia of the encephalon, and we have the *grand mal* attack with loss of consciousness; the vaso-motor theory is only applicable to the *grand mal*—this is bulbar epilepsy or bulbo-vascular epilepsy."

The theory of excitation of the psycho-motor centers explains all the other cases, "all the forms of *petit mal*, *i. e.*, vertigues, absences, '*petit mal auto-motor*,' which is a psychical trouble with unconcious movements." The phenomena will vary according to the region of the cortex excited. If the frontal are excited, intellectual troubles result; if the fronto-parietal convolutions, the ascending parietal convolutions or the paracentral lobule, troubles of motility; if further back, the parietal lobes, the angular gyrus, the occipital lobes or the temporo-sphenoidal convolutions, to hallucinations of taste, of hearing, of sight, of smell, or to troubles of general sensibility, "which constitute in the majority of cases the auras of common sensation or of special sense, which one may consider rather as the first manifestations of the *grand* or *petit mal* than as prodromes capable of being arrested."

THE ACTION OF HYPNOTICS ON THE CEREBRAL CIRCULATION.—Drs. Bergesio and Mosso (*London Medical Record*,

October 15, 1884,) having a patient who had lost a portion of the calvarium, were enabled to make observations on the circulation in the brain. They confirmed the view that the brain is anæmic during sleep. Paraldehyde gave the same result as natural sleep. Morphia and alcohol caused endocranial congestion. The authors remark that the hypnotic effects of these drugs do not depend upon the change in the blood-pressure, but upon some more intimate modification, perhaps of a chemical nature, of the cerebral cortex.

EDITORIAL.

[The Editor is Responsible for all Unsigned Editorial Matter.]

Solar Heat Intolerance, a Sign of Cerebral Arteriole Hyperæmia of Cerebral Vaso-motor Nerve Atonicity.—Note on its Frequent Occurrence and Significance in Certain Cases.—The frequency with which this associated symptom has presented itself to the writer's notice during the past several years, in the practice of neurology and psychiatry, has established the conviction that it is a sign of no mean significance worthy to be classed with the sense of encephalic pressure, insomnia, etc., of exaggerated cerebral arteriole distension or dilatibility, under slight provocative cause. In the writer's view, the true disease is not the hyperæmia of the brain, but the hyperexcitability of certain areas of the cerebro-spinal substance implicating directly or indirectly the cerebral vaso-motor center in the cord and medulla, which constitutes the essential pathological condition which we recognize in the arteriole symptomatic expression of hyperæmia. The brain of a cerebral hyperæmic need not be constantly hyperæmic, and the degree of arteriole distension varies under varying surroundings. Hyperæmic states of the brain are induced by over excitation of the brain cells through psychical as well as physical impressions, or of certain purely psychical stimuli to ideation, and through optical, auditory, gustatory, general, or special, tactile or olfactory impressions, etc., and *vice versa*. A brain flushed with blood evolves ideation different in degree from the thought products of normal blood supply. But whether this view of the pathological condition of the brain state called cerebral hyperæmia be accepted or not, there is no doubt about the vascular condition, and we never fail to find augmented heat areas, more or less extensive, in this condition, and this increased internal heat and its probable cause in lowered vaso-motor tonicity and exalted impressibility to paralyzing influences partly, if not wholly, explains the heat intolerance of these patients. There is doubtless also a changed condition of the whole nervous system, especially the central. We often see marked, light and especially sound intolerance in these cases. But the fact of heat intolerance has been so uniformly found

in our observation, that we here make record of the fact for the consideration of others in the profession, occupied, like ourself, with the study of morbid neural phenomena. The citation of cases would be needless, for we have never failed to find it among our patients when we have inquired about it, and this latitude is peculiarly depressing to such persons in the months of June, July and August and sometimes in September.

Large Doses of Bromides and Iodide of Potassium.—Séguin (*Archives of Medicine*) has called attention to the fact that the use of large doses of iodide of potassium originated in New York, but large doses of most all drugs, much larger, generally, than those of our European *confrères* is characteristic of American therapeutics. Séguin himself has called attention to the value of larger doses of the bromides in children than is commonly given them, and the editor of this JOURNAL has, on many occasions, found it desirable and decidedly beneficial to give, largely diluted, in aggravated hyperæmic conditions, one-hundred-grain doses of the bromides every four hours during the first twelve hours. But these large doses can not be given, without harm, for any great length of time, seldom beyond the first day. Under them patients undergo a state of dementia and ataxia of speech and gait, more or less prolonged and serious, and necessitating decisive, counteracting and recuperative measures. The same results we have seen to follow the long continued employment of drachm doses of iodide of potassium even in syphilitic nervous lesions, as well as in other forms of profound central nerve trouble. We have seen dementia induced by large doses of iodide recovered from in one instance during the past year, and ameliorated in another, by suspending the iodide altogether. The long continued use of iodide of potassium in one-ounce doses daily, or in two-drachm doses daily when there are grave head symptoms, either specific or not specific, is hazardous, and in administering them, when necessity seems to justify their use, they should be cautiously given largely diluted, and at lengthened intervals of not less than six hours, when the stomach is empty of food and gastric juice, and with due regard to the quality of the patient's blood and the assimilability of an abundant reconstructive hæmatic nutrition. As far back as 1867 the writer employed, with success, two-drachm dose *ter in die* for a while, in the successful treatment of mania caused by syphilis, but not continuously. It is as important

to know when to discontinue as it is to know when to give large doses of either the iodide or the bromide of potash. When nutrition weakens and psycho-motor ataxia appears, resentful nature has thrown out the signal for suspension of our vigorous assaults upon the disease, and we should call a halt lest we fatally invade non-combatant territory of the tissues of the body and destroy the physician's most friendly ally, in every contest with disease, the *vis medicatrix nature*. There are untowered sequellae to injudicious overdosing as well as to over-timed underdosing with both the iodide and bromides of potash, which should always be borne in mind when we employ them.

The Theory of Immunity from Second Attacks of Contagious Diseases, attributed lately to Tyndall, was promulgated by Dr. M. L. Linton, Prof. of the Principles of Medicine, in St. Louis Medical College, as far back as 1858, to our certain knowledge. He used to say that certain elements upon which the contagion fed disappeared to return but tardily or never, and conjectured also that the thymus gland, etc., that existed in infancy, but disappears with advancing years, explained the immunity of age to certain contagious diseases from which early life was not exempt. The real cause of immunity from certain contagious diseases, after successfully combatting a first attack, is probably due to an educated resistance in the nerve centers of organic life; in the same way as immunity to the congestion of taking a cold is brought about by the hardening process of repeated exposure. Acclimatization, to either a hot or a cold country, is brought about by cautious, repeated exposures and long residence; and the individual who has had yellow fever, or cholera, and passed triumphantly through the ordeal, emerges stronger in resisting power to that particular kind of assault upon his organism. Instead of something being lost, we think something has been added to the power of the central nervous system by which it is enabled better to resist than before. In the case of microbe diseases it is less vulnerable to their assaults, and does not a second time so readily respond to their presence in the organism, in morbid commotion. It is the same principle of organized tolerance under repeated, but not overpowering strain, which we invoke to explain the acquired immunity from the toxic effects of certain narcotics, like tobacco, opium, etc. Linton, likewise, more than a quarter of a century ago, controverted the cell

doctrine in his lectures, and denied the then strenuously asserted existence of a specific cancer cell, maintaining the precedence of a primordial plasma.

Sensational Bonfires of Restraint Apparatus for the insane, and calling upon the public to indulge in jubilee over the abolition of all restraint, is not the way to do the greatest good to the insane. The best way is to dispense with all needless restraint and supplement restraint, so far as practicable, with unirritating surroundings, thus reducing the necessity of restraint to the very lowest possible minimum compatible with the individual and collective welfare of an asylum, by judicious study of the subject, and *then* to make the *fact* known for the benefit of those superintendents of asylums who wish to learn how to be as humane as possible. The Chiaruges, the Pinels, and the Conollys have shown how greatly restraint may be minimized, let those who seek fame in the same direction show the people and legislatures how a liberal, and not parsimonious, provision for these unfortunates, by providing for them congenial surroundings, may lighten the weight of such remaining restraint as must needs still be employed. It is a tragic thing to make a public bonfire of all restraint apparatus, but it becomes a farcical performance when followed by preventable homicides. It would be still more sensational to burn up the building, but not more farcical than to burn up all and every form of restraint appliance, though it were better to burn them than to allow ignorant and brutal attendants to abuse them. But a well conducted asylum, with a disciplinarian at its head, will use without abusing needful restraint, prescribing a camisole or a safety bed as he would a medicinal potion and never allow their use otherwise, and the same psychiatric skill is often as essential to determine when to employ a restraint appliance, as is demanded to properly determine when and how to set a limb in a plastic splint.

Bell's Law Discovered by Magendie.—Professor Chapman says the credit of demonstrating the functions of the anterior and posterior roots of the spinal nerves belongs to Magendie, and not to Sir Charles Bell. When Magendie, in 1821, published the correct idea, Bell collected and destroyed, as he thought, the whole edition of his own pamphlet printed in 1811, which advanced the idea that the posterior roots are trophic only, and quickly published another containing the true idea. Professor Chapman has

seen a copy of Bell's treatise of 1811 which escaped destruction, and is now owned by the celebrated Richard Owen.

Development of Language in Infants.—Sikorsky, in an interesting communication on this subject in the *Archives de Neurologie*, No. 13 (November, 1883), presents some observations of value germane to our caption, but which we have neither time nor space to epitomize. The contributions also of Segismund, Darwin, Vierodts, Preger, Kussmaul, Tami, Lobish, Schultz, Simonovich, are referred to Sikorsky, and with these very complete references and the observations of Sikorsky himself, the reader explores this field so far as it has been traversed, and still, at the end of his explorations, he will be enabled to conclude with the opening sentence of Sikorsky's entertaining paper, viz., *Le mode de développement du langage chez les infants est encore très peu connu*. In confirmation of this observation we here record, without comment, the record made by us of the vocabulary evolution period of our own child, Ray Hughes. They are the first words he learned to speak, at about the age of two years (the child is now six years old), and were so different from the usual monosyllabic abbreviations of this period of life, that they attracted general attention, our own, especially, and were made a matter of record at the time. The child soon learned to speak correctly, and effaced all peculiarities of utterance.

The following is the list:—Hobbaloo (Sarah, his aunt), Rusu (sugar), Tippity (gravy), Haha tippity (sausage gravy), Tata (sister), Hammie (Henry), Nammie (Clarence), Lala (Charlie), Mamie (Catie), Mamma-la (mamma), Papa-la (papa), Wasra (syrup), Bulla (water), Ninnie (the breast), Ninnin (dinner, supper, breakfast), Niminé (chamber vessel, afterwards Pepe), Muk (milk). The most remarkable word is the first one, which was one of his earliest attempts, and the thirteenth, which is the same expression as that used by his father at about the same age and with the same meaning. Truly, "the mode of development of language in infants is as yet very little understood."

Philanthropy in the Right Direction.—Mr. Vanderbilt's munificent donation to the College of Physicians and Surgeons, of New York, is a lift to the cause of higher medical education that will not be lightly esteemed by the fortunate recipients, or by the profession of the United States. The College of Physicians and

Surgeons will now hold higher still its exalted standard, and those whose eyes are longing to see high grade medical education popular throughout this mediocrity cursed counting may soon gain new hope by looking towards New York. John P. Morton, the well-known Louisville publisher, has presented a splendid building, suitably finished, to the Episcopal denomination of Louisville, to be used as a "Church Home and Infirmary for the Sick of all Denominations." These donations go together. The first goes to improve facilities for imparting skilled treatment, the last goes towards proper care; good gifts both of them, in the right direction, and there remains ample room for the repetition of the example of Vanderbilt and Morton in each of the great cities of the Union, save perhaps, the city of Baltimore, for which the late Johns Hopkins so liberally provided in the university which bears his great and good name.

It is not Electricity which Cures, but Electrizations, a process requiring far more technical skill than the uninitiated generally believe, truthfully says DeWatteville in his "Practical Remarks on the Use of Electricity in Mental Disease," in the January number of the *Journal of Mental Science*. If this truth were fully appreciated, how many blunders now being made might be escaped, and how much more real therapeutic progress might be accomplished by this subtle and potent agency. To possess a battery does not make an electrician any more than the possessing of a set of tools makes a surgeon. DeWatteville who has studied deeply into this subject, believes that the galvanic current can be made to permeate the brain, while a recent medical author on electricity in this country is skeptical on the subject, yet nothing is more easily demonstrable than this fact of practical observation and personal proof.

Honors to Dr. Workman.—Dr. Joseph Workman was made an honorary member of the Phreiatric Society in Italy, in September, 1883, also an honorary member of the British Medico-Psychological Association in July, 1884. Dr. Workman is one of the recognized alienists of North America, and will honor any society that honors him with such distinction. We heartily join our Canadian *confrères* in congratulating our distinguished collaborator and the distinguished societies, upon the reception and bestowal of so worthy a laurel.

Sweating to Death.—Dr. Myrtle in a recent paper cites the case of a healthy, active man, who, after suffering for three weeks from pains of a rheumatic character, relieved by sodium salicylate, was seized with profuse sweats of offensive character, lasting often for ten hours. He improved for a time, but he died from exhaustion 121 days after the first symptom. There was no post-mortem. Dr. Myrtle regarded the case as one of paresis of nerves supplying the sweat-ducts, caused by frequent exposure to cold during his employment. Dr. Jacob thought the intermittency of the attacks precluded a peripheral paresis, and pointed rather to the sweat-centers being affected.—*Vide* Proceedings West Riding Medico-Chirurgical Society, in *London Lancet*, Nov. 1st.

Immediate Restoration of Function in Divided Nerves.—Dr. James P. Bramwell (*London Lancet*, Nov. 15th, 1884), referring to two cases, one of a few months, and the other of fourteen years, cured by Villeaux, sensibility returning in both cases within forty-eight hours after the reunion, cites an instance in his own experience, and published ten years ago in the *Edinburgh Medical Journal*, where the ulner nerve having been reunited immediately after accidental division, neither sensation nor motion in the parts supplied by the divided nerve were supplied. Ten years ago he also made the statement that if the ends of a divided nerve were brought into immediate apposition, there conductivity would be retained without organic reunion, just as a severed telegraph wire, if the divided ends are brought into immediate and perfect contact, would at once continue to conduct the electric current without soldering.

The Death of Dr. Joseph A. Reed, superintendent of the Dixmont Insane Asylum. Next to Dr. Curwen and the late Dr. Kirkbride, Dr. Reed was the most prominent and widely known superintendent of the insane in the state, having devoted himself exclusively to his work for a period of nearly thirty years.

Born in Washington, Pa., in 1823, he graduated from Washington College at the age of nineteen, completing his medical education at the University of Pennsylvania and Jefferson Medical College of Philadelphia, from the latter of which institutions he received his degree of M. D., in 1847. He spent ten years in the practice of medicine in Alleghany City.

In 1857 he was appointed medical superintendent of the Western Pennsylvania Hospital for the Insane, located at Pittsburgh.

He succeeded in enlisting the Legislature in his scheme to build a great hospital for the insane on an improved modern basis, and in 1862 opened the commodious and now widely known institution at Dixmont. Under his efficient management it soon became one of the most successful institutions of the kind in the United States, and his annual reports, for upwards of twenty years, are justly regarded as a valuable addition to the practical literature pertaining to the care of the insane.

Reports derogatory to the management of the hospital have led to two or three Legislative investigations, which, however, failed to develop any serious abuses. The few irregularities discovered being traced to worthless employees who had imposed themselves upon the managers. Dr. Reed has been a trusted adviser in matters pertaining to the erection of the various State Asylums, having been a member of the commission appointed by the Legislature to erect the Danville Asylum.

In the death of Dr. Reed, Dixmont has lost a strong pillar of popular confidence, the State of Pennsylvania a practical and prominent alienist, and the country a noble man, a kind, competent and true physician. This JOURNAL too, in his demise, has lost one of its staunchest and earliest friends. By a life of honest, earnest and fruitful labor he has well earned the right to an eternity of rest.

His memory will live long in the hearts of the afflicted ones of Dixmont, and in the kindly affectionate recollection of his *confrères* in the field of practical psychiatry.

The Sober Second Thought in Gynecology.— Under the caption of "Nerve Counterfeits of Uterine Diseases," Dr. Wm. Goodell, of the University of Pennsylvania, says: "The crying medical error of the day is the mistaking of nerve disease for womb disease. From this widespread delusion it has come to pass that no organ in the human body is so overtreated, and consequently so maltreated as the womb." He demonstrates with clinical proofs, a fact long known to neurologists, that many cases which have been regarded as serious uterine disease, in fact, are cases of nerve exhaustion or malnutrition of nerve centers. Prof. L. Chas. Boisliniere, of this city, has antedated Dr. Goodell in this line of observation, and with the growing tendency to repeat and

confirm similar utterances, the recent strictness of Dr. Clifford Allbutt in "Visceral Neuroses," promise to be not long applicable to this valuable department of medical research and work.

The Case of Intra-cranial Cerebral Tumor, recently so skillfully diagnosticated on by Hughes Bennett and operated upon by Surgeon Godlee, is reported as making satisfactory progress towards recovery. The chief symptoms which led Dr. Hughes Bennett to diagnose the extent and locality of the tumor were paroxysmal twitchings of the left side of the face, alternating with twitchings of the arm on the same side, followed by slowly progressive paralysis of the hand and later on by twitchings of the eyelids and leg without paralysis. These symptoms were accompanied by double optic neuritis and violent headache. The conclusion arrived at was that there was a tumor, probably not larger than a walnut, situated at the upper third of the fissure of Rolando. The skull was trephined by Mr. Godlee over the corresponding spot under which the convolutions appeared to be healthy. An incision was then made in the ascending frontal convolution, and a quarter of an inch below the surface a tumor of the size suspected was discovered and removed.

The Anæsthetic and Hypnotic Properties of Cocaine are among the most recent therapeutic novelties. Since the Vienna student, Zoller, announced its local anæsthetic power, the journals have teemed with confirmatory records of clinical experience with this agent on the eye, the nose, the fauces, the gums and os uteri. Experiments with it in forms of neuralgia due to central nerve lesion have been less satisfactory. In the *British Medical Journal*, for December 20th, Dr. J. Swain records some successful experience with it, hypodermically, and with the valoid internally for sleeplessness. Contrary to statements made by others as to the toxic effect of cocaine, Swain saw no bad results from one-fourth grain doses, hypodermically, or from the valoid in five drachm doses.

Dr. Edward J. B. Dumesnil, for many years one of the editors of the *Annales Médico-Psychologiques*, and one of the oldest and ablest alienists of France, is dead. Dr. Dumesnil was born at Constance, in December, 1812. In 1847 he was made Medical Superintendent of St. Dizier's Asylum. In 1852 he was assigned to Dijon, and in 1858

he became Superintendent of the Quatres Mares Asylum, Rouen. Dr. Dumesnil was a thorough scholar in all that pertained to the department which he cultivated, and his executive capabilities were adequate to all the important trusts confided to him. His death was caused by embolism.

Apomorphine in Nervous Affections.—Dr. Weill (*Lyon Medical Journal*) says: "The hydrochlorate given, hypodermically, in doses of from one-thirtieth to one-tenth of a grain has a favorable action in obstinate hiccough, epilepsy and chorea. By using the drug carefully, sedative effects may be produced without nausea."

Arthropathia Progressiva is described with plausible claims as a new disease of nervous origin by Dr. A. McLane Hamilton (*New York Medical Journal*, January 24th, 1885). The author does not think the symptoms can be confounded with those of any other disease.

Please Note the Change of Address, of this JOURNAL, to 3000 Chestnut Street.

HOSPITAL NOTES.

DR. EDWARD N. BRUSH, of Buffalo, and late first assistant physician at the New York State Lunatic Asylum, at Utica, has been appointed physician to the male department of the Pennsylvania Hospital for the Insane at Philadelphia. Dr. Brush is a native of Buffalo, where he graduated in medicine and engaged in practice for some years thereafter. He was formerly one of the visiting physicians to the Buffalo General Hospital, one of the editors of the *Buffalo Medical Journal*, and a lecturer in the Buffalo Medical College. He is a physician of varied and rare accomplishments, and he will carry to his new field a large experience in the care and management of the insane.

NEW JERSEY.—Dr. Buttolph, late of the Morris Plains Asylum, has removed to Short Hill, near Milburn, New Jersey. The career of Dr. Buttolph was a long and successful one, and we wish him, in his retirement, that restful happiness which he has so richly earned by a life of diligent and profitable endeavor in behalf of the insane of his State.

IMPENDING FATAL CHLOROFORM ANÆSTHESIA can be arrested, according to Dr. L. M. Yale's observation, by rubbing the patient on the left side. The suggestion is worth a trial in every case where alarming symptoms appear. Dr. Yale's conclusion is drawn from data furnished by seven thousand cases in the London Hospitals.—*Vide Medical News.*

WISCONSIN.—Dr. R. M. Wigginston has been in charge of the Northern Hospital for the Insane, in Winnebago, since July 1st, 1884, but we have only lately been advised of the fact. Dr. Walter Kempter, the former superintendent, having gone into private practice.

REVIEWS, BOOK NOTICES, ETC.

REAL AND IMAGINARY INTEMPERANCE. By G. Thomann, Secretary United States Brewers' Association.

The apparent purpose of this pamphlet is to show that fermented liquors are harmless and even healthful drinks.

We suspect, however, that the discerning reader will conclude that the writer's logic is faulty, and that even his statistics, in so far as they are of any value, tip the balance against his theory.

Mr. Thomann deserves credit for his candor, which is everywhere apparent, and which is as rare as it is refreshing in the discussion of this subject. The admissions, however, which his sense of fairness leads him to make, very seriously weaken the force of his argument.

It would appear to be the opinion of Mr. Thomann, though he does not distinctly say so, that distilled liquors are very liable to abuse, and he would have the world drink fermented liquors in their stead. He has much to say of the "proper use" and the "abuse" of intoxicating liquors, although his statements of what their proper use consists in are certainly hazy, obscure and unsatisfactory.

While he mildly and in an indirect and circuitous way suggests that fermented liquors are less injurious, or, perhaps, less abused than distilled, yet he evidently understands that the distinction needs not be wide, else it would suggest to the reader what is really the fact that in their ultimate effects upon the tissues of the body, fermented and distilled liquors differ mainly in degree.

Mr. Thomann concedes that a proportion of insanity is due to intemperance, and much of his effort is directed to showing how small this proportion is and the trifling cost it occasions taxpayers in comparison to the vast revenues derived from the liquor traffic. His statement of the cost of maintaining the insane is quite incorrect, the cost being very much greater than is stated by him. He neglects also to consider that greater cost which is occasioned to the community by the loss through insanity of valuable working members, and the loss through the impoverishment and pauperizing of families where the head becomes insane. This is a loss which statistics can not show, yet it is very great and probably affects society more seriously than the additional taxation due to the maintenance of the insane.

Mr. Thomann's habit of barricading himself with qualifications and reservations is shown in the following from page 6:

With certain reservations as to the kind of drink used, the climate, the temperament and habits of the drinkers, as well as their social condition, it may readily be conceded that an increase of inebriety implies a proportionate increase of insanity; but it is not, therefore, by any means fair to infer an increase of inebriety from an alleged increase of insanity.

On page 21 he says:

Such evidence could easily be made interminately cumulative. Enough

has been said, however, it is hoped, to show that a decrease in the consumption of distilled spirits, attended by an increase in the use of fermented beverages, in countries where the vine is indigenous, must necessarily diminish that form of intemperance, from which, when persisted in to excess, alcoholism and insanity are apt to result.

The assumption that fermented liquors are harmless is the chief aim of his entire essay, and this quotation may be considered a fair summary of his opinion. That this is an error is sufficiently apparent from the investigations of Dr. Sunier, published in 1872. He found that distilled liquors produced a much larger proportion of insanity than fermented, but he also concluded that fermented liquors produced a proportion of mental disorders. His conclusions were "that the pernicious influence of intoxicating drinks, as regards insanity, is in the following order: Alcohol from cider, alcohol from beet-root and grain, cider, wine, beer; the white wines being much more injurious than the red."

If "intoxicants civilize nations," as Mr. Thomann asserts, then such civilization is attained at a fearful cost as is implied by the following on page 48, the reader bearing in mind that pauperism is but one of the evils that result from the intemperate use of alcoholic liquors:

The proportion of pauperism caused by intemperance is 10.74 per cent. Among the female paupers there are very few intemperates; but in the female department and nursery of every poorhouse there are, of course, a number of inmates whose indigence was caused by the intemperance of husband or father, and in estimating the number of persons made dependent upon public charity by drink, this fact must be taken into consideration. As it is extremely difficult, not to say impossible, to obtain correct data on this point from the institution here referred to, the compiler adopted the proportion which appears from the Danish statistics of pauperism, adding 5 per cent. for females and 8.03 for children, so that the total proportion of pauperism caused by intemperance is raised from 10.74 per cent. to 23.74 per cent. Hence we have four intemperate paupers to every ten thousand of the entire population.

The opinion expressed concerning the relation of intemperance to crime is apparently correct. It is a common belief, but a mistaken one, that crime is usually the result of intemperate habits. The shrewder class of criminals do not drink to excess. The criminals who drink are the petty offenders and they do not go to penitentiaries, but are sentenced to local jails and workhouses and houses of correction for short terms.

The difficulty with the problem which Mr. Thomann has attempted to solve is, that it is a problem which statistics will not solve. It is an attempt to measure that which is immeasurable. The harm of the excessive use of alcoholic liquors is in a proportion of cases conspicuous, so that he who runs may read the story of degradation that results; but these effects are but a part of the total evils that flow from such excesses. There is certainly great demoralization in the children of a family in which a parent is intemperate. The scenes they witness blunt and wound and harrow their sensitive feelings, they are experiences which leave scars upon the minds of children, experiences which degrade because they familiarize the young with vice, and the mental organization, and perhaps the physical, of children reared under such conditions, must be more or less awry. Thus the inheritance of disease or the tendency to mental and physical degeneracy is great in the children of those who drink to excess.

Intemperance brands with degeneracy the offspring of those who are its victims, and if in the histories of those who are idiotic or insane we could trace these states along their various lines of causation, a much larger proportion than now appears would be found directly or indirectly due to intemperance. The difficulty of tracing the history of an individual in a case of mental disease is very great, so great that it is a rare achievement to obtain a reliable history in a case of insanity. This difficulty is increased a thousand fold when we attempt to reach the lives of parents and bring to light vices which would produce weak and degenerate offspring and get vices the existence of which the descendants would prefer to conceal. The writer hereof can recall many cases of insanity in which the cause of the disorder was quite beyond solution until the ancestral history being revealed by some family acquaintance, it became clear that the principal cause was in the unstable and defective organization which had resulted from parental vice.

Statistics will not solve the question, and though it is an important inquiry how large a proportion of insanity is due to intemperance, it is yet well to bear in mind that the showing must be incomplete and is at least but a fragment of the truth. The conclusions to which Mr. Thomann's investigations would lead were doubtless foreseen by the superintendents who furnished him statistics, for they knew that statistics do not, and never will, show the proper share which intemperance has in the causation of insanity. In many cases where intemperance is the direct cause it will be denied or concealed, in others where it has been less excessive the physician may not consider it the cause, though it may have been the straw that broke the camel's back of mental health; in another, the insanity is the bad fruit of ancestral indulgence, and here again the physician may fail to reach the fact.

The preponderance of medical opinion of the present time is in favor of the view that alcoholic liquors of all kinds when habitually used are injurious. Distilled liquors are probably more injurious than fermented, but the difference is one mainly of degree. This is simply the statement of a scientific fact, and we who indulge in our social glass occasionally should not delude ourselves with the belief that we are in any way the better for it, but let us drink it if we will with the clear understanding that without it we would be as happy, as healthy and clearer-headed.

Science is the only proper temperance lecturer, for she appeals to human reason and without prejudice, and every day she speaks to a larger audience and more and more effectively. Men indulge to excess because they are weak, and as the better intellect illustrates the height of human progress, so the wrecks and the degradation we see in the world illustrate the further extreme of human frailty and imperfection.

To that silent and ceaseless progress in which we all take some share humanity is steadily gaining in self-control, in the power of self-denial, and every day the race is lopping off something of its weakness and its grossness. This growth of self-restraint will ultimately enforce a universal temperance, and the indulgences which now degrade and kill will be thrown aside, their victims falling by the wayside as the dead leaves fall from the living branches.

COMPARATIVE PHYSIOLOGY AND PSYCHOLOGY; A Discussion of the Evolution and Relations of the Mind and Body of Man and Animals. By S. V. Clevenger, M. D., Chicago: Jensen, McClurg & Co. 1885.

The object of this work is the discussion of psychology from a monistic stand point. Dr. Clevenger seems to be a follower of Condillac for he claims that: "The mind consists of sensations and their revivability of sensations. All psychic phenomena have these as their basis, feelings, cognitions, reason and volitions, etc., being mere modes of working of sensation and memory." In the present volume Dr. Clevenger discusses: the evolution of the emotions and their differentiation from fundamental peculiarities of the amoeboid cell, such as hunger and the enemy-escaping reflexes, which crop out in insanity in bulimia and delusions of persecution. The relations of Darwin's serviceable associated habit to the integration of emotion and their development of centers and peripheries for their expression. Analysis of cognitions as being modes of sensation, and their revivability depending upon memory registrations. Feelings as depending wholly upon superimposed, feebly-registered past sensations. Reason as involving fully evolved reflex systems. Instinct as being the outcome of reason, and depending upon an acquired or inherited stability of reflex systems (Spencer's idea). "The will of the individual being the co-ordinated wills of the component cells" (Foster). Consciousness as being the result of sensation summation, past and present, on the plane peculiar to the individual. It is exclusively connected with the functional disintegration of the central nervous elements; its intensity is in direct proportion to this disintegration, and simultaneously, in inverse proportion to the facility with which each of these elements transmits to others its functional vibrations, and with which it relapses into repose, into integration. . . . *Its intensity is in an inverse ratio to the facility and rapidity of central transmission.* Pleasures and pains as being comparable to Euler's consonance and dissonance. The simpler the terms in which the order expresses itself, the greater is our delight. Hence the superiority of the simpler ratios in music over the more complex ones. The style of the author is marked by extreme conciseness and his theories are extremely suggestive. As a statement of the problems by life and mind from the sensational and monistic stand point, the work deserves perusal. It is well issued.

J. G. KIERNAN.

THE BRAIN AND THE NERVES. By Thomas Stretch Dowse. Second Edition from the Press of Putnam's Sons, 27 and 29 W. 23rd St., New York.

This book is reserved for further notice. A worthy review of the book has been expected from other than editorial sources, as the time of the editor is now too much engrossed to write out *in extenso* and place, in proper light, before the readers of the ALIENIST AND NEUROLOGIST, its distinctive features and merits. It is, however, a very satisfactory treatise on an interesting and still neglected subject in medicine. Neurasthenia, or better, *neuratrophia*, a term which we have already offered to the profession as preferable, is deserving of as much thought and research as the now popular themes bacilli and bacteria are.

Neuratrophia and neurasthenia are at the foundation of a world of psychological and physical misery in the human organism, and every ray of

light thrown upon these subjects must illumine the whole field of pathology.

The author especially deserves the thanks of all Americans for the tribute he pays to the work and memory of the late and largely lamented Dr Beard, whose labors shed much light on this subject. Dr. Dowse, however, appears not to have learned of the contribution to this subject by Van Deusen, another American physician who preceded Dr. Beard. The contributions of Flint and Weir Mitchell are also acknowledged.

We cordially commend the book, confident that a perusal of its pages will repay the reader, and with the regret, in conclusion, that we are compelled thus cursorily to notice it.

MEDICAL RHYMES. Published by J. H. Chambers & Co., St. Louis.

An attractive book consisting of a collection of poems, grave, sentimental and humorous, relating to medical subjects. Several of the choicest of Dr. Holmes' poems have a place with selections from a great many other medical poetical writers. There are poems on *anatomical* lore—on *Medicine, Surgery* and *Obstetrics*, and on a great many *miscellaneous* subjects. The whole is arranged by DR. HUGO ERICHSON, Professor in the Quincy School of Medicine, with an introduction by Prof. Willis King, Kansas City Medical College, and Ex-President Missouri State Medical Society. Melancholy moods are, in this book, dissipated by light laughter over medical melodies. Trials and tribulations, toothache and tape worms are treated in most amusing verse—touching medicine, surgery and obstetrics. The music of the mother, with a thrilling tale of a Blue Glass Baby, together with other kinds of Doctor's ditties, from the earliest times to the present, find place in this volume.

THE THIRD EDITION OF THE OFFICIAL REGISTER OF PHYSICIANS AND MIDWIVES IN THE STATE OF ILLINOIS.

It shows that during the last four years there has been a slight reduction of the number of physicians in the state notwithstanding the increase of population. The actual number now in Illinois in practice is given as 5,885, whereas in 1880 it was 5,979. Of the various graduating institutions represented there are in all 198. In the United States 138, Canada 10, Great Britain 14, Continental Europe 34, Africa 1, and South America 1. The Secretary invites corrections from all interested in the accuracy of details of the report.

INDEX-CATALOGUE OF LIBRARY OF SURGEON-GENERAL'S OFFICE UNITED STATES ARMY, Vol. V., Flaccus-Hearth: Washington Government Printing Office.

This extensive volume is but one of a series of which the reader may form some estimate by observing that it embraces only those subjects in alphabetical order between the words *Flaccus* and *Hearth*. The labor in preparing this index must be something enormous, but when completed it will be the most extensive work of the kind in the world.

MYNERT'S TREATISE ON PSYCHIATRY. Translated by Barney Sachs, M. D., illustrated. New York: G. P. Putnam's Sons.

This publication is soon to be offered to the medical profession. The first part of the work, devoted to anatomy and physiology of the brain, is now ready. The work is fully illustrated.

NOTES ON THE TREATMENT OF TRACHOMA BY JEQUIRITY. By Leartus Connor, A. M., M. D., Ophthalmic Surgeon to Harper Hospital, Detroit. Mich. Reprint. 1884.

This is a brief, critical review of the literature of the subject up to this time. "It is in substance and in diction characteristic of its learned and talented author."

CLUB FOOT: IS EXCISION OF THE TARSUS NECESSARY IN CHILDREN? By DeForest Willard, M. D., Lecturer, Orthopedic Surgery, University of Pennsylvania, etc. From Transactions of the Medical Society of the State of Pennsylvania.

MUMPS AS A CAUSE OF SUDDEN DEAFNESS.—Also by same author.

THE ARCHIVES OF MEDICINE.—We regret to note, has suspended publication. While it lived it made a lasting record.

Care of the Chronic Insane. A paper read before the Tenth Annual Conference of Charities and Corrections, held at Louisville, Ky., September 24-30, 1883. By H. Wardner, M. D., Superintendent of the Southern Illinois Hospital for the Insane. [Reprint.]

The Obligation of Civilized Society to Idiotic and Feeble-Minded Children. By Hon. H. M. Greene, Lawrence, Kas. A paper read at the Eleventh National Conference of Charities and Correction, St. Louis, Oct. 16, 1884. [Reprint.]

The Fillmore Will Case. By Landon Carter Gray, M. D., Professor of Mental and Nervous Diseases, New York Polyclinic; Physician-in-chief to Department of Mental and Nervous Disease, St. Mary's Hospital. [Reprint.]

Permanganate of Potassium: Its Action and Uses. By Robert Bartholow, M. D., LL. D., Professor of Materia Medica, General Therapeutics, and Hygiene, in the Jefferson Medical College of Philadelphia, etc. [Reprint.]

Provision for Idiotic and Feeble-Minded Children. By Isaac N. Kerlin, M. D., Elwyn, Pa. A paper read at the Eleventh Conference of Charities and Correction, St. Louis, Oct. 16, 1884. [Reprint.]

The American Method of Giving Potassium Iodide in Very Large Dose, for the Later Lesions of Syphilis; More Especially Syphilis of the Nervous System. By E. C. Seguin, M. D. [Reprint.]

Therapeutische Notizen der Deutschen Medicinal-Zeitung. 1880-1881. Herausgeber Dr. Julius Grosser. An excellent ready therapeutic reference for German reading physicians. [Reprint.]

Progress in Provision for the Insane, 1844-1884. By W. W. Godding, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C. [Reprint.]

Explanation of the Pathology and Therapeutics of the Diseases of the Nerve Centres, Especially Epilepsy. By J. McF. Gaston, M. D., Atlanta, Ga. [Reprint.]

Hair: Microscopically Examined and Medico-Legally Considered. By William J. Lewis, A. M., M. D., F. R. M. S., Hartford Conn. [Reprint.]

Epileptic Insanity. A paper read before the Academy of Medicine. February, 4th, 1884. By Philip Zenner, A. M., M. D., Cincinnati, O. [Reprint.]

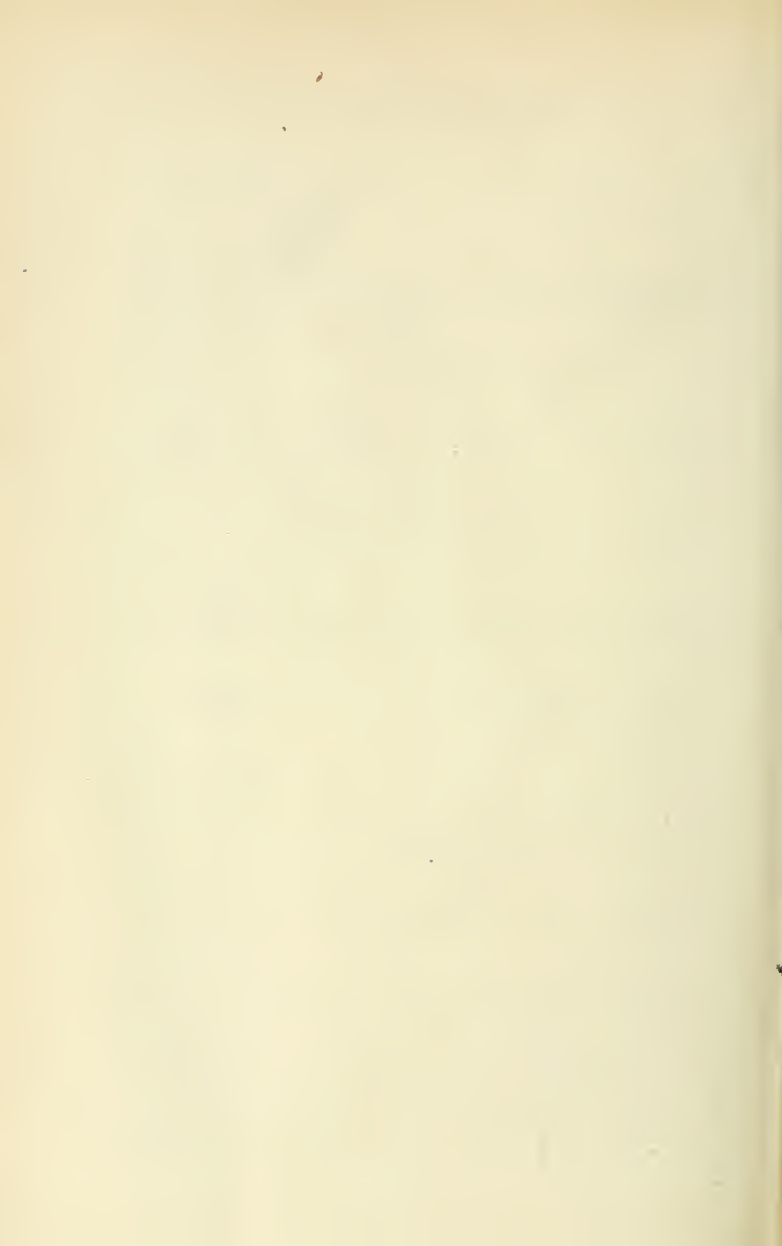
Notes on the Treatment of Trachoma by Jequirity. By Leartus Connor, A. M., M. D., Ophthalmic Surgeon to Harper Hospital. [Reprint.]

One Aspect of the Subject of Medical Examination, as set forth in the work of the North Carolina Board of Medical Examiners. [Reprint.]

Illustrations of the Anomalous Course of Posterior Spinal Sclerosis. By E. C. Seguin, M. D. [Reprint.]

One Hundred Years of Publishing—1785-1885. Philadelphia: Lea Brothers & Co. 1885.

The Treatment of Epilepsy. By Landon Carter Gray, M. D. [Reprint.]



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ORIGINAL CONTRIBUTIONS.

A Case of Demonomania with Periodic
Hystero-Epileptic Accesses.*

By DR. ANGELO PASSERINI.

I.

THE case which I purpose to describe appears to me of some importance, not only because demonomania has, in our days, become, as Dagonat writes, "a very exceptional affection," but also because it furnishes another proof of the very great influence which delirious ideas may exercise over the various nervous functions.

In the patient whose history I am about to relate, the demoniacal delirious ideas, under certain circumstances, reached such an intensity as evidently to become, in a predisposed subject, determining causes of violent hystero-epileptic accesses. In this respect my case presents the usual analogies to all those which authors have described under the name of *melancholia demonomaniaca*, or *dæmonolatRIA*, in which, according to Krafft-Ebing, neuralgias, paralgias and convulsions of undoubtable hysteric origin are very frequent, and the accesses of true *raptus* but reiterate the ecstasies of all delirious religious fanaticisms. But in this case the intensity of the hysterical phenomena attained the degree of the grand hysteria, the *hysteria major* of Charcot.

* Translated by JOSEPH WORKMAN, M. D., Toronto, Canada, from the *Archivio Italiano*, July, 1883. Milan.

My case presents not a little interest also in the fact that the delirious ideas alluded to became exalted at a fixed time; and at a time which might be said to be fixed with scrupulous regularity, the convulsive accesses determined by these ideas burst forth.

II.

There resides in Settala, a little village in the neighborhood of Milan, a young woman a little over 20 years old, who has been regarded by most of her fellow residents as possessed by a devil. Her name is Henrietta Ga—; she belongs to a family in rather good circumstances, but of trivial intelligence. A maternal aunt, who died a few years ago, suffered under *nervous troubles*; a paternal uncle was, and her father now is, addicted to the pleasures of Venus and Bacchus. The mother is rather a robust woman, and appears not to have suffered any disease of importance. When, however, she was pregnant with Henrietta she experienced sufferings new to her, which in subsequent pregnancies were not felt by her; digestion was slow and difficult, she had vomiting which no medicine suppressed, obstinate constipation and great debility. Having very little milk for the infant, it was given to a nurse, who became *enceinte* in a few months, but from greed for the wages she held on to her nursling. Henrietta was vaccinated twice unsuccessfully. She did not take either measles or scarlatina. Dentition proceeded regularly; and she commenced to walk at the usual period.

From her earliest years it was evident that her intellect was below mediocrity, and that it would hardly attain to normal development. She was late in commencing to speak and slow in showing that she understood anything spoken to her by her relatives or neighbors. Having been sent to school, she was always among the lowest in her class, or indeed, the very lowest herself. Under the belief that this was in part owing to the numerous causes of distraction presented in her home and around it, she was

placed in a college in Milan, and kept there for two years; but the result was far from equaling the expectations of her parents. During her absence from the family, she gave no indication of affection for any of them; she never wrote unless in reply to letters received by her, and her answers were always very short, and always devoid of expressions of affection. It cannot, however, be said that her heart was entirely closed against every altruistic and benevolent sentiment; she greatly loved one of her college companions, who was very unlike herself in physical constitution, and in aspect, and much superior to her as to her intellectual faculties.

This affection ultimately reached such a degree that Henrietta could not absent herself from her friend for an instant, and having become jealous, she hated and ill-treated those companions who appeared to her desirous of supplanting her in the position she held, or believed that she held in the heart of the one for whom alone she was, perhaps, capable of having any affection. Separation from this companion must certainly have contributed very much to throw Henrietta into that state of melancholy in which she was found after her parents decided on taking her home. The little or no affection shown by her for the family, her gloomy and taciturn character, and her indisposition to employment in domestic engagements, very often provoked reproofs from her mother, who, possessed of very little intelligence and not much tenderness of heart, exacted from her daughter far more than she was able to accomplish, and she ascribed to laziness her mental dullness and her disinclination to do what any other girl who had never been at college could do very well. She often, in presence of her daughter, lamented with friends for having spent money on her education in vain, and she often threatened to drive her into a convent, or into some far distant place, in order to relieve herself of the presence of so senseless and annoying a being.

One fine day, for what reason is unknown, the mother shut Henrietta up in a small and dark apartment, and

went out of the house. The poor prisoner first tried to break the lock, to smash the door, to wrench off the window fastening, but after fruitless efforts, finding that every effort to escape was useless, she began to weep, to scream, to call loudly for aid, and to rage madly. Night came, and the darkness augmented her terror and desperation; the end was, according to her own statement and the testimony of many neighbors who heard her say so, that she invoked the assistance of the devil, promising to him both her soul and body, if he would free her from that place of imprisonment.

In the subsequent days the girl's melancholy showed a notable augmentation; she spoke only in monosyllables, and then only when questioned; she took very little food, and she wept every now and then. The end of April, 1880, came round; on the morning of 1st of May, she went from home, in company with her mother, to attend church and hear mass.

The poor girl, as she herself afterwards related, tormented with melancholy thoughts, and full of remorse for having sold herself to the devil, had not closed an eye the preceding night, until near morning, at which time she had a dream of terrific nature, or, to use her own words, "a frightful vision." She said the devil, in person, presented himself red, frightful, sullen, with very long legs which were shriveled and distorted, with coiled up tail and long hooked claws; and having threatened her in thunder tones, and with a terrifying glance, he forbade her, in a hollow voice and with a savage and terrifying frown, ever to set her foot in a church, for she already was his property, and if she disobeyed his orders he would drag her, the very first time, down to hell.

As Henrietta gradually approached the church, her breathing became short, frequent and oppressed, and just as she was about to set foot on the steps that led up to the door, she uttered a piercing cry and fell to the earth senseless. She remained for a short time motionless and stiff, then she began to tremble all over, and became livid

in the face, she ground her teeth, and foamed at the mouth, and finally she shook, and was furiously convulsed; she rolled her eyes and stared, tossed her limbs, elevated the pelvis, and every now and again carried her hands to the epigastrium and the throat, alternately.

Having been carried home, she continued this, with short pauses of remittance, for an hour; she then began to weep and to try to escape, and she shrieked and groaned; finally she fell into a profound sleep which lasted as long as, or perhaps longer than her period of agitation. On the following morning, feeling pretty well, she wished to renew the attempt to go to church, and behold! another access of grand hysteria, more violent and longer than the first. At 2 o'clock P. M. there was a third access, which lasted till 4 o'clock. In the succeeding days an access, similar to those preceding, took place daily and invariably about 2 P. M., and ending about 4.

The poor girl, at the close of these accesses, usually cried out that she had seen the devil, and that he abused her; she tried to leap from her bed, to dash through the window, to knock her head against the furniture and the wall of her chamber. After this she thrust her hands into her hair and rapidly tore it out, and she tore her clothing into rags. Two pretty strong persons were at times unable to restrain her.

In the intervals Henrietta was pretty well, and sometimes she conversed with her young neighbors, telling them of her misfortune and lamenting the unpardonableness of her sin, for now her soul and body belonged to the devil, to whom she had devoted herself, and he had come to her to remind her of her promise. She said that she, a pupil of nuns, and both by education and tradition, once the friend of priests, was now, through her diabolical work, constrained to feel repugnance towards both, and was unable to look on them without feeling a crushing at her heart and a sort of nauseous shuddering. She said that from midday till towards 2 P. M., her anguish sometimes increased up to sheer desperation; that the idea of being

damned, beyond all pardon, at such times caused her unspeakable anguish; that her convulsive accesses were very often pre-announced to her by a sort of shivering, which radiated with the rapidity of lightning from her right little finger up to the throat, and there choked her, and ascended to the head so as to blind her and deprive her of feeling. According to her statement the devil often presented himself, both in the daytime and the night, to remind her of her promise, under the form of a cat, a dog, or some other animal, and she knew quite well how to interpret, in their real signification, the mewings, the barkings and the menacing howlings of these nasty beasts.

Her relatives never thought of placing her under the care of a physician; but, being convinced that the case was one of demoniac possession, they had masses and ceremonies celebrated to drive out of the body of the girl the malignant spirit that possessed her. A priest advised them to send her, on the 26th of May, to the Santuario di Caravaggio, where the apparition of the Blessed Virgin had many and many a time worked the miracle of curing those possessed of devils.

For the readers who do not know it, we may say that Caravaggio is a little village of Cremasee, a few miles from Trevoglio, rather famous in the surrounding region, and for a good distance beyond, for a grand and handsome church, which was erected on a spot where, according to the legend, the Madonna appeared and worked many miracles.

Every year, on the 26th of May (the day of the apparition of the B. V.), a great festival is held there, and the people run to the place in crowds, partly for devotion, partly through curiosity, and partly for other purposes. It is related that several *women* on the coming round of this festival, have shown themselves to have been freed from (at least for a few days) hemicranias, constrictions of the throat and stomach, neuralgias and similar nervous disturbances by which they had previously been tormented. For those, therefore, who believed themselves invaded by

the devil, to whose baleful operations they ascribed their maladies—like the ancient Babylonians who believed that every disease was produced by an invisible being, the enemy of man—there is, attached to the church, an appropriate small chamber, under the care of guards, in which, separated from all other persons, they take part in the religious functions, and are able to see, through the gratings, the great altar and the priests there officiating. On the approach of evening, just a little before 5 o'clock, the hour at which it has been related that the Madonna appeared for the first time, at the moment when the chief priest is elevating the consecrated host and when all the faithful reverently cast their eyes down, as unworthy to look upon the body of the Lord, the apparition of the Blessed Virgin takes place. At that instant the bells sound all over, the clergy chant almost cracking their throats, trumpets and drums resound, fire-crackers are let off, and instantly there, in that special chamber, the poor possessed ones are contorted, they roll their eyes around, they make wry faces, they hammer their breasts and heads, they sob, weep, howl and scream with desperation. The devil, forced by the great power of the Madonna to give up his prey, at least for a time (for the most of them in the next year return to the same exploit) is the cause of all this rumpus.

Our young lady, therefore, on the 26th of May, 1880, early in the morning, along with a crowd of the people of the country, proceeded to the Sanctuary of Caravaggio. She had been greatly agitated on the preceding day. The usual access of grand hysteria had commenced at noon, instead of two hours later, and it lasted until 3 o'clock, and was followed by several minor accesses. During the journey to church she was much preoccupied, and she wept from time to time. The moment she came in sight of the sacred temple she burst into loud weeping, into groans and piercing shrieks. She could not enter the church, being held back as if by an invisible iron hand, and she stood with her relatives on the area at the foot

of a tree, to wait for the *benediction*. Towards the middle of this, that is to say exactly at the instant of the elevation of the host, she acted just as her companions in misfortune who were shut within the chamber, but far worse, as she had within her a demon much stronger and more malignant than any of them carried about.

From that day onward, throughout that year, she had no more exaltations or accesses, excepting on Christmas Eve and the two holidays of the Nativity; then there was another pause until the two days of Easter, 1881. These having passed over, she remained tranquil until the last day of April, from which until the 26th of May succeeding, when she again betook herself to the miraculous Sanctuary, she had daily an access of grand hysteria, similar to those of the year before, coming on at the same hour, and preceded and followed by an exaltation of the demoniacal ideas and more or less severe agitation. In the past year and the current one, there have been the same phenomena, with the same law and scrupulous regularity, so that we have the following characteristic periods, and therefore, coincident with with the grand mystico-religious epochs of the year:

1880—All the month of May.

1880—The festals of the Nativity.

1881—The festals of Easter.

1881—All the month of May.

1881—The festals of the Nativity.

1882—The festals of Easter.

1882—All the month of May.

1882—The festals of the Nativity.

1883—The festals of Easter.

1883—All the month of May.

In the intervals of the accesses she was pretty well, excepting a little melancholy and sometimes ill-humor. She often spoke of the devil, to whom she was given over, and by little and little she reached the point of becoming rather sympathetic with him. She invoked his aid every time she got into any trouble, and she said that through

his intervention she succeeded in the end with whatever she wished to accomplish. One time a priest, who was consulted by her parents, advised them to put her into the hands of an exorcist, and they probably would have done so, had she not vehemently opposed them, protesting that she much preferred to remain as she was. [As more comfortable?—TRANS.]

Henrietta had menstruated for the first time at thirteen years of age, but she was always more or less dysmenorrhœal. Her appetite was always very variable, without, however, ever reaching the extreme degree of sitophobia or bulimia; she had for several years been troubled with constipation. Excepting some fevers of malarial origin, it does not appear that she ever suffered from any diseases of importance.

Henrietta is tall and of well-formed person; she has black hair, dark chestnut eyes, and a pale countenance. Her physiognomy, usually devoid of expression and deeply serious, becomes at times suddenly animated and full of life, and at such times her cheeks become bright red, and her eyes sparkle with unwonted brightness. Her musculature is sufficiently developed, the subcutaneous fat is rather scarce, the mammæ are of moderate volume. The size of the cranium is a little below the medium; it is brachicephalic; the face is oval and regularly developed. The pupils are equal and slightly dilated; they react promptly and actively to light; she shows a hardly sensible degree of myopia; there is great facility in the spasm of accommodation. Hearing is normal. Her general sensibility is very exquisite, and her sense of place is well developed. I did not succeed in finding any hysterogenic zone. She has a decided predilection for acidulous substances and for roasted meats, but boiled meat nauseates her; she does not care for fruits unless they are sour. Sometimes she eats with real voracity, and again she will pass a whole day without touching food. Digestion is effected slowly and gives place to the formation of much gas, so that the bowels very often rumble and become

notably puffed. Usually she is rather constipated. She is very subject to palpitation, and sometimes to abortive accesses of angina pectoris. The other organic functions are accomplished with all regularity, excepting menstruation, which is scarce and painful. She complains much of frequent ovarian troubles, especially on the right side, where pressure a little strong gives pain; she also complains of the hysteric constriction and the feeling of the œsophageal ball.

Henrietta usually sleeps but little, and her sleep is frequently disturbed with dreams which are mostly of a terrifying nature. As regards the psychic functions, I may, from my inquiries, state as follows: Her ideas are puerile and extremely limited, not clear, and often disconnected; her language is very often improper, vague and confused. She speaks rather well her local dialect, but the Italian very badly; of the French idiom, although she had studied it in the college for two years, and for some time afterwards, she remembers, only with great difficulty, a few scattered words and some half phrases, which she at times horribly distorts. She hardly ever speaks unless when questioned. If by chance she enters on a chat of more than half a dozen words, she has much difficulty in keeping to the thread of her discourse. She rambles from one thing to another with perfect nonchalance and facility. Having at her disposal only a very limited vocabulary, she makes free use and abuse of general expressions and paraphrases. She recollects only with difficulty, and with much uncertainty and confusion, principally names and dates, and the occurrences of her own life, and these not very remote. Of her beloved college companion she no longer preserves more than a vague remembrance; she has but little affection for her mother.

She spends hours and hours at her looking glass, in adorning herself; she studies with close diligence the adjustment of her hair, she paints her face with white lead and rouge, she perfumes and powders herself all over.

If any one asks her why she bestows so much study in adorning herself, in a country in which luxury and fashion have not yet taken their abode, she replies with a smile: "*My devil-kin so wishes it.*" It now seems that for some time past, instead of being distressed for having commerce with the devil, she has concluded by entering into friendly relations with him; and at the present time, far from feeling afraid of him, she entertains a certain affection for him. She invokes his assistance in every trifle; for example, in searching for a pin, lost by her, in threading her needle when the light is bad, in making any decision whatever, and so on.

[*Note.*—Being asked how it ever could happen that she, now so closely intimate with the devil, was in such desperation and distraction last May, and at other times, because of being possessed by him, she merely replied: "*In that time I was mad.*" It is almost totally useless to interrogate her as to the manner in which she communicates with the devil, or upon the particulars of such commerce. We obtain only laconic and vague replies, such as the following: "He appears to me in the night, in my dreams. I hear his voice in the night time, and sometimes I see and also feel him. *He takes the form of a dog, a cat, etc., and he talks to me in dog barks, cat mewings, howlings, which only myself can interpret in their true signification, etc.*"]

This fact (of invoking the aid of the devil) is explicable by her systemized delirium and the gradual shrinkage of her ideative field. The demoniac ideas which once caused her anguish have become powerless to move her, being now habitual.

Her intellectual perception is tardy, and reflection most feeble. She hardly ever succeeds in mentally accomplishing an arithmetical process, however simple and short. It is superfluous to say that she is quite incapable of intense and prolonged attention.

As in the past her humor is usually sad and gloomy, rather than melancholic. She is very capricious, and when

she is bent on doing a thing, she must be allowed to do it, at whatever cost.

The ideas of justice, propriety, good morals, duty, etc., are dead letters with Henrietta. The feeling of modesty is very poorly developed, so that she hesitates not to denude herself even totally. She is insusceptible of compassion; rather indeed she sometimes delights herself in stupidly tormenting, in various ways, animals that come within her reach, and not seldom even the children of her neighbors, whose crying and screaming make her merry and happy. She seems to be altogether dead to family affection and to friendship. Some months ago a sister died of pneumonia; they say she did not shed a tear. It is now three years since she came from college, to reside continuously in the country, and she has never sought for friendship with anyone. As to the passion of love, in the strict sense of the term, it seems that she never has felt it, and that she is insusceptible of it.

III.

In summation of the case we may say that Henrietta Ga— is a girl imbecile, hysterio-pathic, in whom there has been developed a religious melancholy with demoniacal ideas, in which the demonopathic accesses provoked by recurrence of the religious epochs of the year, are always associated with the convulsions of the grand hysteria. Now, the association of imbecility with religious delirium, and of the latter with hysterio-epilepsy, as also the influence exercised on the delirium by religious festivals, all seem to me to be important facts which merit notice. Besides, the dependence, so manifest in our patient, of hysterio-epilepsy on religious ideas, reminds us of the fact that very often it is, that the grand hysteric access commences with delirium, and not less frequently, with delirium it closes.

This sporadic case of demonomania with accesses of grand hysteria, may also explain the fact of the constant association of religious deliriums with hysteric neurosis in

the great demonopathic epidemics, which afflicted many countries in the middle ages, and which, even in the present century, have repeated themselves, though in less grave proportions, as at Morgines, Verzegnis and Genzano, and at Alia in Sicily; it may also serve to throw light on the genesis of many of the cases of the so-called "malady of the mystics," of which in our own time Luigia, Latteau and other celebrated stygmatisers have been stupendous examples.

SETTALA, June, 1883.

Clinical Lectures on Dipsomania.*

DELIVERED AT THE ASYLUM OF ST. ANNE.

By M. LE DR. M. V. MAGNAN.

LECTURE II.—SYMPTOMS.

SUMMARY.—Dipsomania; impulsive paroxysm. Prodromata:—Depression, precordial anxiety, anguish, irresistible craving and struggle to resist. After the attack:—Sobriety; no inclination to drink.

CASE II.—At 20 years of age, melancholia; at 24, first attack of dipsomania during pregnancy. The attacks continue after confinement. Suicidal impulses.

CASE III.—(M. Trélat)—Prodromata:—Self-reproach. Ineffectual attempts to resist the inclination. Uncontrollable desire for drink.

CASE IV.—Malaise, the forerunner of the attack. Ineffectual resistance. Impulsive paroxysms. Desperate craving for drink. Attempts at suicide. Restraint.

Dipsomaniacs do not choose particular liquors—frequent exceptions. During his paroxysms M. R. would take ether with sugar, his mother also taking it in enemata.

GENTLEMEN:—The alcoholic excitement with which an attack of dipsomania terminates when the latter lasts long enough or is repeated with sufficient frequency to cause the toxic symptoms due to the cumulative action of the alcohol, this excitement I say should not be confounded with the dipsomania itself as it is a complication only, not a symptom of it.

Trélat,† in his work on “Lucid Insanity,” lays great stress upon the distinction between these two conditions. “Drunkards,” he says, “are a class of people who become intoxicated whenever the opportunity offers. Dipsomaniacs are patients who do so whenever their attack comes on.” The chief and characteristic feature of dipsomania is its

* Translated by Henry R. Stedman, M. D., Boston, Mass.

† Trélat, “Folie Lucide” Paris, 1861, p. 151.

tendency to manifest itself in attacks which are essentially intermittent and paroxysmal, and leave behind them a certain cerebral discomfort which gradually diminishes, the patient resuming in the interval his wonted sobriety, regretting his excesses and being left free for the time being.

The attack is preceded by symptoms which are usually identical. At first a vague feeling of sadness arises which no occupation or diversion can dispel, and the patient depressed and discouraged, finding it impossible to apply himself, stops working. He soon falls a victim to gloomy thoughts, believing that everything about him has changed and that speedy disaster awaits him. He also becomes more irritable, his feelings change and his dearest friends are objects of indifference. To these symptoms of the intellectual and moral order are soon added physical symptoms. At first, anorexia, with precordial anxiety and a sense of constriction of the epigastrium and throat appear, and then loathing of solid food. Finally, disturbances of the general sensibility supervene; the patients complain of a burning sensation in the stomach and heat in the throat. They have a most intense thirst, not one which any sort of a draught will quench, but a special kind of thirst with craving, an irresistible longing to drink something stimulating.

From this time nothing can dissuade them. They must have some alcoholic drink at any cost. When they have no money with which to procure it, they leave no stone unturned, even using the basest means to accomplish their desire. Theft, prostitution, and even crime they will not stickle at to procure an exciting drink. It is in these cases that the father of a family is seen taking the last piece of household property to the dram-shop, deaf to every entreaty of the mother who points to her starving children; or else it is the mother, who, forgetful of her duty, throws aside all shame and makes a prostitute of herself for a few glasses of brandy, or sells her daughter as related in a newspaper account of a case in England.

Here is a patient who will tell us her experience. Her history is as follows:

Louise B——, 33 years of age, is hereditarily predisposed to insanity. She is the daughter of a drunkard whose father committed suicide. Her mother appears to have been a woman of ordinary intelligence, but the patient's brother died of hydrocephalus, at the age of five. Lastly, one of her cousins is insane.

At the age of eight, Louise had an attack of typhoid fever which left its mark in permanent mental enfeeblement, attended by so great failure of memory that she forgot all that she had known before, and was obliged to begin again to learn to read and write. After that was accomplished she had no further difficulty.

Towards the age of twenty she had intervals of sadness and discouragement. She experienced pains and dragging sensations in the stomach, and complained of a feeling of weight in the hypogastrium. These phenomena were worse at the menstrual periods and were not replaced by any other manifestation. She noticed even at that time that a little sweetened wine would entirely relieve the hypogastric distress.

Louise married in 1873, when 24 years old. Her husband, who had known her for several years previously, was very fond of her and she, in return, was devoted to him. The first indications of pregnancy, which appeared not long afterwards, bound them closer to each other, and it seemed as though nothing could disturb their domestic tranquility. In the third month of her pregnancy, however, she began to grow sad from no apparent cause. Social pleasures, diversion of any sort, annoyed her; the most trifling daily duties were a burden; she sought the solitude of her room only to be haunted by the same feeling of *ennui* and lassitude. At the same time she developed a loathing for solid food and began to experience, on the other hand, an incessant thirst which nothing could allay and a dryness of the throat. At first she took peppermint water and, finally, wine to quench

it, but her desire for drink was unassuaged. She then decided to try brandy. The immediate relief which began to follow its use impelled her to drink more. The first exhilaration of drunkenness dispelled her discomfort and she continued to drink until, after consuming half a bottleful of alcohol in a short time, she became profoundly intoxicated. After five days of sobriety and regularity of life her sadness returned, when she completely abandoned herself to her longing for drink, with the same result as before. Her husband and her family attributed this fancy to her pregnancy, and used every means—censure, advice and surveillance, to induce her to correct her vitiated appetite. She promised to reform and kept her word for a month, but the depression and craving for brandy again set in. She was haunted by a craving from which there was no escape. Realizing, after a determined struggle, that she must soon give up to it, and being anxious to escape the inevitable reproaches of her family she left home, taking some clothing with her which she sold for a song at the first offer. With the proceeds she bought some brandy and, shutting herself up in a hotel chamber, drank until she fell to the floor insensible. The next day she was found by her husband, who had searched for her all night, in a stupid and dirty condition. He took her home and redoubled his vigilance, but with no better results. She relapsed again and again, into her old habit, until her confinement took place at term without accident.

She had scarcely left her bed before her old feelings of sadness and discouragement returned accompanied, as usual, by malaise, a sense of constriction at the epigastrium and dryness of the throat, which culminated in the overmastering desire for drink. She, at first, fought against it, knowing that once the descent was begun she could not stop short of the lowest depth of degradation. Every precaution was again taken and yet she yielded to the impulse, directing all her energies toward gratifying her irresistible desire. From that time her attacks increased in frequency, occurring at irregular intervals, but perhaps

more particularly at the menstrual period. Later she took to the use, or rather abuse, of absinthe as well as brandy, and its effect soon showed itself in muscular twitchings and attacks of vertigo. Her afflicted family are at a loss to account for the patient's condition. This woman, chaste and reserved in her intervals of sobriety, no sooner begins to drink than she loses all modesty and discretion. For a glass of spirits she abandons herself to the first comer. Her resorts are drinking places of the lowest kind, and she gives herself up to the most disgraceful debaucheries with prostitutes in the worst quarters of the city. Sometimes, for want of money, she is forced to leave her garments in payment of her debts, and she is then found by the police lying on the sidewalk nearly naked.

The crisis passed she becomes herself again and manifests the utmost remorse and grief for what she has done and promises not to allow herself to be again led astray. Her resolutions are sincere and she willingly seconds every attempt to turn her from her propensity. She was, at one time, given a position in a business house with the hope that by keeping her constantly under a friendly oversight it would be less easy for her to obtain liquor, and it was thought probable that she would return every evening in a calm frame of mind to her home where her husband and her child awaited her, but all these precautions were of no avail. When the impulse comes on she contrives a thousand ways for obtaining drink and begins another debauch. After the first glass her firmest resolutions vanish, to be replaced by ravenous indulgence of her appetite.

After a time her relatives decided to place her in charge of an uncle in the country who was a physician. She readily agreed and counted on securing complete protection by this arrangement. While she was there, every means were employed to prevent a relapse; persuasion, threats, and even restraint, but to no purpose. As soon as the attack seized her she would steal off and begin anew her old practices. At one time, however, she

appeared to reform and had a respite of three months. Her husband, believing her cured, took her back to Paris where she received the congratulations of all her friends. But on the very first day she began to feel sad and uncomfortable, took no interest in household matters, and passed a sleepless night. On the following day her husband, on returning from his business, found her stretched upon the floor, soiled by her evacuations and profoundly intoxicated. She was again put under her uncle's care for some time, but little benefit resulted. Returning to Paris she again took up her double existence, so to speak, at times conducting herself as a worthy and estimable wife, showing the utmost affection for her husband and child, at other times, falling, inevitably, back into her old indulgence in debauches of the most revolting character.

In January, 1877, she left the house one morning with the apparent intention of going to work, and took her way to her place of business. On the way the impulse to drink seized her, and having no money with her she pawned a ring, went to the dram-shops and there remained for two days. She was arrested and slept at the police station, where she was found by her husband, on the second night, in a half-naked condition, all her jewels and most of her clothing being in the hands of the pawn-brokers. In the following May the same thing was repeated, except that on this occasion she remained away from home four days, during which time she was under the influence of absinthe and took no nourishment, but hung about the drinking places until they were closed for the night. Then, being turned out into the street, she wandered about waiting for some shop to open where she could obtain her favorite drink and satisfy the burning thirst which was consuming her. The scandal her conduct created led to her arrest. When her husband found her at the Prefecture of Police she was again nearly naked. Even her corsets had gone, she knew not where, to pay for drink. Her cloak had also been pledged early in the morning for two glasses of absinthe. On another occasion,

towards the last of July, feeling herself sad and thinking that a walk in the Square would cheer her, she went out taking with her her little child as a safeguard against temptation, but in spite of her precautions she drank, on the way, several glasses of wine, and when she reached the garden was somewhat overcome by it. Here she entrusted her child to a drunkard whom she met. Her husband not finding her at home went out to look for her, and, at about eleven o'clock at night, met her returning in the company of a laborer as intoxicated as herself, who was forcing her to walk along. She was afraid that on her return home she would be taken to task and had induced the laborer to take her to his house. On the next day she was placed with some friends who felt sure they could watch her closely, but her attack returning, she made her escape to a distant quarter of the city, where she was twice arrested in two days for being intoxicated.

To-day her appearance shows the ravages her excesses have made. She drinks until she falls insensible and motionless. She remains prostrated for several hours and for five or six days is in a stupid condition which incapacitates her for work.

This was her condition when she was brought to St. Anne. A week after admission she had become calm and rational, and gave a most accurate history of her case.

You can see how she deploras her unfortunate propensity for drink. She knows that she could be very happy in her home and that, instead, her dissolute life has brought only desolation and misery upon it, as her husband has not been able to provide the household necessities and to meet, at the same time, the increased expense her excesses have entailed. She states with distinctness the premonitory stages of her impulses, and insists that she is powerless to resist them. With her child in her arms, she could not prevent herself from entering the wine-shop. Occasionally she has thought to commit suicide by throwing herself in the Seine. She even drank to give herself courage so to do, but the brandy only had the

effect of depriving her of all energy, and instead of contenting herself with the small amount necessary to produce a little excitement, she would drink until she became brutishly intoxicated.

In all dipsomaniacs the impulse is preceded by the same prodromata, and manifests itself in the same manner with the single difference that the various features of the disease are appreciated in proportion to the education and intelligence of the patient. Moreover, some of them quickly develop an aptitude at concealing the habit from others. The struggles which some of these unfortunates make before yielding to their disastrous propensity, indicates in the clearest manner possible how much they differ from natural drunkards. The latter seek every opportunity to drink, while the dipsomaniac, on the contrary, begins by avoiding it. He reproaches himself. He enumerates, perhaps, in a loud voice, the different torments that await him. He endeavors in a thousand ways to make himself disgusted with liquor, even contaminating his drink in hope of keeping himself from yielding to the temptation. The ordinary drunkard does not behave in this way. Trélat has reported a very interesting case bearing upon this point. Madam W— was an earnest and energetic woman. She had started several enterprises which had always failed for the same reason. As a rule, she was regular, circumspect and economical in her habits, but from time to time she would be seized with attacks of the drinking monomania which made her forget everything, business interests, obligations of all kinds and her family, until, at last, she brought upon herself complete ruin.

It was impossible to hear her describe the efforts she had made to cure herself of the propensity which was ruining her. When she felt her attack coming on she would put substances into her wine which were most calculated to excite disgust, but to no purpose. She would even mix it with excrement, telling herself at the time of the harm which would come of it. "Drink that," she

would say, "Wretched creature! drink, you sot, drink! miserable woman, forget every duty, and bring disgrace on your family." But her craving was stronger than all reproaches and any amount of disgust she could feel.

When the dipsomaniac finally succumbs he behaves altogether differently from the drunkard. He conceals and secludes himself after secretly purchasing his liquor, and then steals away with it utterly ashamed of himself. The habitual drunkard, on the contrary, is demonstrative and noisy, and asks his friends to join him in drinking. He displays the bottles he has emptied and is proud of telling his exploits. One is insane before drinking, the other only becomes so because he has drunk too much.

The accounts given by dipsomaniacs of their struggles to resist the impulse is even more instructive. They drink the first glass to give them strength and assistance in carrying on their struggle against temptation and promise to go no farther, or else they do so in order to dispel a feeling of heat in the throat. But from that moment the power of resistance wanes, as they experience a slight exhilaration or a sense of well-being, of satisfaction or a kind of relief from their trouble. Then nothing can stop them and they are impelled to hasten their libations. They must have at any cost their favorite drink, and nothing short of confinement can keep them from it.

We have a patient in this service an examination of whom will show, better than any description, the moral condition usual with dipsomaniacs, the period of sadness which preceds each of their attacks, their resistance before succumbing, the means they use to gratify their passion and, finally, what is most marked, the remorse which torments them after each new relapse. Her history is as follows:

Marie T—, a seamstress, aged 51 years; has been several times admitted to St. Anne. Her maternal grandfather committed suicide. Her mother, at 40 years of age, had an attack of melancholia. The patient contracted drinking habits in a regiment in which she was *vivandière*

and where she occasionally drank a little brandy. "It was a part of the business," and, at that time, she drank without any craving for liquor, and solely so as not to offend by refusing when it was offered to her. It is important to emphasize this point. At the age of 34 years she complained of cramps in the index finger and thumb of the right hand, in which she also noticed a diminution of sensibility. This obliged her to learn to sew with the other hand. Galvanization was tried without success. Two years later she had, from no assignable cause, her first attack of depression. This she thought she could drive off by taking the lees of brandy, but this only caused her to lose sleep. She had, thus far, not had a genuine attack of dipsomania, but not long afterward she had a second attack of melancholy. She felt unfit for anything, and wept and mourned for two days as though she felt some calamity impending. Distension of the stomach caused pains and for the first time she felt a desire to drink, which not being immediately gratified became irresistible. She left her home in order not to be seen intoxicated in that neighborhood, and ran off to the dram-shops, but was greatly ashamed of this freak and determined not to repeat it. Up to that time she had been comparatively sober as a rule, but since then she has had, at irregular intervals, periods of melancholy marked by a feeling of powerlessness—"like cutting off her arms and legs"—which renders her incapable of doing any work. Her stomach also seems to burn and she feels as though she had a heavy weight on her chest which was stifling her. These phenomena are immediately followed by a desire to drink.

The impulse quickly drives her to drink to excess which she is generally sorry for afterwards, but cannot resist repeating whenever the attack recurs. Finally, alcoholic complications brought her to *La Pitié*, where she developed suicidal desires and endeavored to leave her bed in order to throw herself into the bear's pit in the *Jardins-des-Plantes*. On one occasion she succeeded

in eluding her watchers, and leaping over the stair-rail threw herself down from the second floor. As she received no injury to speak of and heard a voice calling her to make another attempt higher up, she went to the third floor and made ready to throw herself down again, when she was secured. The next night she attempted to strangle herself with one of her garments. She was brought to St. Anne on the following day for the first time, suffering from horrible hallucinations. She saw serpents, birds, white cats coming to devour her and soldiers who wished to kill her. She was abused and everyone was in league against her, etc., etc.

At St. Anne the undercurrent of melancholy has remained unchanged for eighteen months. She has not committed any excess thus far, although given charge of the distribution of the allowances of wine at meals. Nevertheless, on several occasions she had felt impelled to drink the contents of the glasses placed in her care, but being under close observation she did not succeed in her attempts. She said, moreover, that she would be disgraced by succumbing, as an inward voice which urged her to resist said, "You will be pursued and punished if you drink." We have seen what weight a similar suggestion had with her. A phenomenon also manifested itself in spite of the patient's sobriety, which we shall have occasion to refer to again. The physiological equilibrium finding itself disturbed during this preliminary period of the attack of dipsomania, Marie was seized in the middle of the night with an attack of alcoholic delirium. She saw grimacing faces, shadows of Chinese figures dancing on the wall, and flames and sparks. She also smelled offensive odors. Today you see her in her usual state. She hears voices within her "not sounding in her ears," but saying to her mentally, "You have done finely, you will end by killing yourself; you wretch! You have begun badly and you will end badly." Lastly, this woman presented a final peculiarity which is striking. When walking with another patient she is always careful to keep her on the right side, as she cannot

possibly feel anyone on her left. If she fixes her left eye on a light, it seems as though it would fall upon her head. Everything she looks at with this eye alone seems to dance about. Her arteries are atheromatous, and sensibility of all kinds is weakened on the left side.

What liquors do dipsomaniacs prefer?

Every kind of alcoholic drink is acceptable. One patient drank *Eau de Cologne*; the first woman I called to your notice took *vulneraire*.* You remember the other who drank essence of peppermint and afterwards absinthe, and we shall see a fourth who prefers wine. An insane person well known in the medical world, Comte de R—, resorts to ether taken with sugar, and his mother, who also seems to have been a dipsomaniac, is in the habit of inhaling it and sometimes even goes so far as to use it in enemata. Many dipsomaniacs invariably take the first liquor which comes to hand.

It is not only during their impulsive phases that dipsomaniacs differ from habitual drunkards. The toxic delirium also which follows their drinking spells is not the same. While the drunkard calls incessantly for wine, brandy, champagne, etc., and takes what is administered, if it is given the name of the drink he clamors for, the dipsomaniac, on the other hand, when his impulsive craving is gratified, is disgusted at the mere mention of alcoholic drinks of any kind as they inspire the greatest repugnance. Our first patient could not bear the odor of *vulneraire* between his attacks, although he drank glassfuls of it at other times. Of the two other dipsomaniacs now in this service one usually takes nothing but water, milk, soup and a very little wine, and the others will not take any liquid for several days after an attack.

* Also known as arquebussade water. A lotion used for wounds.—TRANS.

State Provision for the Insane.*

By C. H. HUGHES, M. D.

WE live in an age when every uttered sentiment of charity toward the insane is applauded to its remotest echo; an age in which the chains and locks and bars and dismal dungeon cells and flagellations and manifold tortures of the less humane and less enlightened past, are justly abhorrent; an age which measures its magnificent philanthropy by munificent millions, bestowed without stint upon monumental mansions for the indwelling of the most pitiable and afflicted of the children of men, safe from the pitiless storms of adverse environment without which are so harshly violent to the morbidly sensitive and unstable insane mind; an age in which he who strikes a needless shackle from human form or heart, or removes a cause of human torture, psychical or physical, is regarded as a greater moral hero than he who, by storm or strategy of war, taketh a resisting fortress; an age when the Chiarugi's and Pinel's, the York's and Tuke's of not remotely past history, and the Florence Nightingale's and Dorothea Dix's of our own time, are enshrined in the hearts of a philanthropic world with greater than monumental memory.

Noble, Christlike sentiment of human charity! Let it be cherished and fostered still, toward the least of the children of affliction and misfortune, as man in his immortal aspirations moves nearer and nearer to the loving charitable heart of God, imaging in his work the example of the divinely incarnate Master.

But let us always couple this exalted sentimentality with the stern logic of fact and never misdirect or misapply it in any of our charitable work. Imperfect knowledge perverts the noblest sentiments; widened and perfected

* Remarks following "Definition of Insanity," published in the October number of THE ALIENIST AND NEUROLOGIST, and read before the Association of Charities and Corrections, at St. Louis, Oct. 15th, 1884.

knowledge strengthens their power. A truly philanthropic sentiment is most potent for good in the power of knowledge, and may be made most powerful for evil through misconception of or inadequate comprehension of facts. As we grow in aspirations after the highest welfare of the insane, let us *widen our knowledge of the real nature of insanity and the necessities for its amelioration, prevention and cure.*

It is a long time since Grotius wrote, "The study of the human mind is the noblest branch of medicine," and we realize to-day that it is the noblest study of man, regardless of avocation. Aye! it is the imperative study of our generation and of those who are to follow us, if we would continue, as we wish to be, the conservators of the good and great, and promoters of advancing capability for great and good deeds in our humanity.

One known and acknowledged insane person to every five hundred sane persons, and among those are unreckoned, numbers of unstably-endowed and too mildly-mannered lunatics to require public restraint, but none the less dangerous to the perpetuation of the mental stability of the race, is an appalling picture of fact for philanthropic conservators of the race to contemplate.

The insane temperament and its pathological twin brother, the neuropathic diathesis, roams at large unrestrained from without or that self-restraint which, bred of adequate self-knowledge, might come from within, and contaminates with neurotic and mental instability the innocent unborn, furnishing histogenic factors which the future will formulate in minds dethroned to become helpless wards of the state or family.

The insane temperament is more enduringly fatal to the welfare of humanity than the deadly *comma bacillus* which is supposed to convey the scourge of Asia to our shores. The latter comes at stated periods and disappears after a season or two of devastation, in which the least fit to survive of our population, by reason of feeble organic resisting power, are destroyed; while resisting tolerance is

established in the remainder. But *this* scourge is with us always, transmitting weakness unto coming generations.

It is the insanity in chronic form which escapes asylum care and custody except in its exacerbations; it is the insanity of organism which gives so much of the erratic and unstable to society, in its manifestations of mind and morals; it is the form of unstable mental organism which, like an unstrung instrument jangling out of tune and harsh, when touched in a manner to elicit in men of stable organisms only concord of sweet, harmonious sounds; it is the form of mental organism out of which, by slight exciting causes largely imaginary, the Guiteau's and Joan d'Arc's of history are made, the Hawison's and Passananti's and Freeman's, and names innumerable, whose deeds of blood have stained the pages of history, and whose doings in our day contribute so largely to the awful calender of crime which blackens and spreads with gore the pages of our public press.

We may cherish the sentiment that it were base cowardice to lay hand upon the lunatic save in kindness; and yet restrain him from himself and the community from him. We may couple his restraints with the largest liberty compatible with his welfare and ours; we may not always abolish the bolts and bars, indeed we can not, either to his absolute personal liberty in asylums or to his entire moral freedom without their walls, yet we may keep them largely out of sight. Let him be *manacled when he must and only when he must*, and then only with silken cords bound by affectionate hands, and not by chains. We may not open all the doors, indeed we can not, but we can and do, thanks to the humanitarian spirit of the age in which we live, open many of them and so shut them, when it must need be done, that they close for *his* welfare and ours only; that he may not feel that hope is gone or humanity barred out with the shutting of the door that separates him from the world.

We may not always swing the door of the lunatic as facilely outwards as inwards—the nature of his malady will

not always admit of this—but we should do it whenever we can, and never when we must, should we close it harshly. And while we must needs narrow his liberty among ourselves, we should enlarge it in the community to which his affliction assigns him, to the fullest extent permissible by the nature of his malady.

Liberty need not necessarily be denied him; and to the glory of our age, it is not in the majority of American asylums for the insane, because the conditions under which he may safely enjoy liberty, to his own and the community's welfare, are changed by disease. The free sunlight and the fresh air belong as much to him in his changed mental estate as to you or me, and more, because his affliction needs their invigorating power, and the man who would chain, in this enlightened age, an insane man in a dungeon because he is diseased and troublesome or dangerous, would be unworthy the name of human. Effective restraint may be employed without the use of either iron manacles or dismal light and air excluding dungeons.

The insane man is one of our comrades who has fallen mentally maimed in the battle of life. It may be our turn next to follow him to the rear, but because we must carry him from the battlefield, where he may have fought even more valiantly than ourselves, we need not forget or neglect him. The duty is all the more imperative that we care for him, and in such a manner that he may, if possible, be restored. Simple sequestration of the insane man is an outrage upon him and upon our humanity. "Whatsoever ye would that men should do unto you, do ye even so to them," is the Divine precept, which, if we follow it as we ought, will lead us to search for our fallen comrades in the almshouses and penal institutions and reformatories, and sometimes in the outhouses or cellars of private homes, to our shame, where errors of judgment or cruelty have placed them, and to transfer them to places of larger liberty and hopes of happiness and recovery. The chronic insane are entitled to our

care, not to our neglect, and to all the comforts they earned while battling with us, when in their best mental estate, for their common welfare and ours.

Alms-houses and neglected outhouses are not proper places for them. They are entitled to our protection and to be so cared for, if we can not cure them, as that they may not do those things to their own harm or the harm of the race, which they would not do if they were sound in mind. Society must be protected against the spread of hereditary insanity, hence such kindly surveillance, coupled with the largest possible liberty, should be exercised over them as will save posterity, so far as practicable, from the entailment of a heritage more fatal than cancer or consumption.

The insane man is a changed man and his life is more or less delusional. In view of this fact we should endeavor always to so surround him, that his environments may not augment the morbid change in him and intensify his perverted, delusioned character.

Realizing the fact that mind in insanity is rather perverted than lost, we should so deport ourselves towards the victims of this disease as in no wise to intensify or augment the malady, but always, if possible, so as to ameliorate or remove it.

Realizing that the insane man in his best estate may have walked the earth a king, and in this free country of ours, have been an honored sovereign weighted with the welfare of his people, and contributing of his substance towards our charities, we should, with unstinting hand, cater to his comfort when this affliction comes upon him.

We should give him a home worthy of our own sovereign selves, and such as would suit us were we providing for ourselves, with the knowledge we have of the needs of this affliction, pending its approach to us.

That his home should be as un-irritating and restful to him as possible it should be un-prison-like always, and only be an imprisonment when the violent phases of his malady imperatively demand restraint. An hour of

maniacal excitement does not justify a month of chains. Mechanical restraint is a remedy of easy resort, but the fettered man frets away strength essential to his recovery. Outside of asylums direct restraint is often a stern necessity. It is sometimes so in them, but in many of them and outside of all of them, it may be greatly diminished and asylums may be so constructed as to make the reduction of direct restraint practicable to the smallest minimum. Direct mechanical restraint for the insane, save to avert an act of violence not otherwise preventable, is never justifiable. The hand should never be manacled if the head can be so influenced as to stay it, and we should try to stay the hand through steadying the head.

Every place for these unfortunates should provide for them ample room and congenial employment, whether profitable to the State or not, and the labor should be induced, not enforced, and always timed and suited to their malady. A variety of interesting occupations tend to divert from delusional introspection.

Most institutions attempt to give their patients some occupation, but State policy should be liberal in this direction.

Deductions are obvious: Every insane community of mixed, recent and long-standing cases, or of chronic cases exclusively, should be a home, and not a mere place of detention. It should be as unprison-like and attractive as any residence for the non-criminal. It should have for any considerable number of insane persons at least a section (640 acres) of ground. It should be in the country, of course, but accessible to the supplies of a large city. It should have a central main building, as architecturally beautiful and substantial as the State may choose to make it, provided with places of security for such as require them in times of excitement, with a chapel, amusement hall, and hospital in easy covered reach of the feeble and decrepid, and accessible, without risk to health, in bad weather.

Outhouses should be built with rooms attached and

set apart for the residence of trustworthy patients, for farmer, gardener, dairyman, herdsman, shepherd and engineer, that those who desired to be employed with them, and might safely be entrusted, and were physically able, could have opportunity of work.

Cottages should be scattered about the ground for the use and benefit of such as might enjoy a segregate life, which could be used for isolation in case of epidemic visitation. Recreation, games, drives and walks should be liberally provided.

A perfect, but not direct and offensive surveillance should be exercised over all the patients, with a view to securing them the largest possible liberty compatible with the singular nature of their malady.

In short, the hospital home for the chronic insane, or when acute and chronic insane are domiciled together, should be a colonial home, with the living arrangements as nearly those which would be most congenial to a large body of sane people, as the condition of the insane, changed by disease, will allow.

It is as obvious, as that experience demonstrates it, that the reigning head or heads of such a community should be medical, and not that medical mediocrity either which covets and accepts political preferment without medical qualifications.

The largest personal liberty to the chronic insane may be best secured to them by provision for the sexes in widely separated establishments.

It is plain that the whole duty of man is not discharged towards his fallen insane brother, when he has accomplished his sequestration from society at large, or fed and housed him well. The study of the needs of the insane and of the duty of the State in regard to them, is as important and imperative a study as any subject of political economy.

Some Clinical Studies of the Incipient Stages of Inebriety.

By T. D. CROTHERS, M. D.,

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THE inebriate rarely, if ever, comes under medical care until he has reached a chronic stage of the disease. He is considered in this anterior period wilful and wicked, and treated by moral suasion, the pledge and prayer, and perhaps punished by law, and all without relief. At last he comes to the asylum and under medical care. Five, ten, or fifteen years of the toxic use of alcohol have gone by, the patient is a continuous or a periodic inebriate, has had many attacks of delirium or delirium tremens; he has tried every moral means and failed, and yet his faith in his ability to stop at will is unshaken. He comes to the asylum in his own estimation, not from any inability to abstain on his part, but for some minor affection, and to gratify others who misapprehend his case. Thus at the start he gives evidences of mental derangement. When his case is studied, most decided marks of both physical and mental degeneration appear. Congestions, and disturbances of liver, heart, stomach, skin and other organs, and alterations of the higher functions noted in changed character, conduct, notions, disposition and emotions, are clearly apparent. The pronounced character of these symptoms of degeneration, with the history of their duration, point to a chronic stage that is present. When these symptoms are noted and carefully grouped, they become the starting point from which the march of the disease can be traced backward to its origin. Notwithstanding the difficulties of a search down through a realm where every event or phase was supposed to come from wickedness, the great number and variety of acts that point to a regular order of

progress and distinct stages in the case, show clearly that inebriety, like all other diseases, follows a progressive line of dissolution from a certain origin and development down to chronicity and death. My purpose is to trace *some of these early stages of inebriety, and show that they can be seen, that preventives and curative measures, applied at this time, give more promise of certain results than at any other period.*

It will be understood by all who have any experience in these cases, that heredity is the largest and most prominent factor in the causation—a heredity that dates back to inebriate, insane, idiotic, epileptic or consumptive parents. An entailment of degeneration that is likely to develop into any one of these diseases, depending upon some unknown determining cause; also that inebriety is surely one of this family group, and likely to come from or merge into any one of them. In a study of cases of inebriety, running back into the earliest incipient stages, many and very prominent symptoms appear which may be put down as pathognomonic, and may be divided into two groups: *One noted before any spirits are used. The other coming on after alcohol has been used.* These are only outline divisions, and point to periods that may extend over years, or be limited to a few weeks. The first may be termed the pre-alcoholic stage, and the second, the post-alcoholic period. Probably the latter stage is more prominent and traceable, yet both are psychological and pathological periods that have never been studied from this point of view before. It should be remembered that in nearly all of these cases a pronounced heredity is present. In these stages a number of prominent symptoms appear and increase up to a certain point where inebriety is recognized, then they change and are lost in other and more distinct signs of progressive degeneration. Thus a child at puberty, or later at full manhood, will develop an unstable brain and nerve organism easily exhausted, associated with a capricious appetite for foods and drinks. This will go on increasing with varied and complex

neurasthenic states, then inebriety will at once manifest itself unmistakably and rapidly pass to chronic stages. Or these symptoms of brain instability and nutrient delusions and derangements may appear in previously healthy men, following illness, injury, or mental shock, such as sorrow, grief, loss and suffering. Some illustrative cases will bring out this phase more clearly:

A man with a marked heredity both insane and alcoholic, soon after beginning business began to manifest a strange appetite for unnatural foods, such as decayed meats and large quantities of strong acid water. He would use one article of food to surfeit, then turn to some other. He became very emotional and changeable in manner and disposition. This period of great eccentricities of conduct and use of food and drinks suddenly merged into pronounced inebriety two years later. The food delusions vanished, but other and most prominent signs of mental failure followed. He is now, ten years later, a low chronic inebriate.

B— had a doubtful ancestry; showed soon after puberty an unusual liking for rich foods. He would spend all the money he could get to buy rare delicacies in the market; was also very vain of his looks and person; would not drink any form of spirits, but used tea and coffee to excess. His mind was unsettled and full of changing fancies and notions about himself and future. He drank to excess soon after graduating from college, and is now a chronic inebriate in an asylum.

C—, with an epileptic parentage, developed the same nutrient eccentricities at about twenty years of age. He had dyspepsia and showed a mania for taking pills, and was full of delusions as to the effects of foods and drinks on his body. He drank large quantities of water both night and day, and finally became an inebriate.

Each of these cases was thought not to be peculiar except in their judgment of foods and drinks. They were noted for emotional exaltation and depression, dyspepsia, etc., but this was supposed to follow their excesses, and to be of no general importance.

Another class are, in my opinion, more common; the following are illustrations:

A—, a good business man, who was temperate and apparently well up to forty years of age, suddenly conceived that he could indefinitely prolong his life by the selection of foods and drinks. He gave this subject all his leisure time and thoughts and was a monomaniac; soon emotional and changeable disposition and conduct followed, and he drank to excess. All his food mania disappeared and he was a periodical inebriate.

B—, a lawyer, temperate, well; at thirty used food to great excess, had an acute attack of dyspepsia. Then he ignored all solid food and lived on gruel and liquid foods in small quantities. From this time he imbibed many delusions, and his brain and body showed marks of debility. A physician ordered spirits as a remedy, and inebriety was the result. I have met with many cases of this kind, where inebriety was precluded by similar delusions in men of apparent good health and vigor, and which soon merged into either alcoholic or opium inebriety. In these cases no particular cause was traceable to account for the beginning or for these delusions and alterations of brain function.

Another class is noted where these symptoms follow some distinct cause, and end in the same way, as in the following: A—, with consumptive heredity, was a temperate, hard-working man, up to thirty years of age, when he was greatly prostrated by the death of his child. After recovery he manifested great anxiety to find medicines that would relieve some unknown state of the body. He became very fastidious about the quality and character of food eaten. He went to the butcher and inspected all the meat purchased, and was very particular about the preparation of food and excitable if it was not done according to his will. He was very nervous about little things and his disposition and temper changed. Finally, he became a periodic inebriate, and is now serving out a term of imprisonment for assault committed

during a drinking paroxysm. B—, was a merchant, temperate, and well up to forty-five, when he suffered from concussion of the brain. A year afterward he developed dietetic delusions, and lived on separate articles of food, and special forms of drinks from plants and shrubs. His mind was changeable and he conceived that clothing was dangerous after it was worn a short time. He put on new suits every week, and was in a state of constant alarm for fear of disease from poison. He suddenly drank to intoxication, and was an inebriate at once. C—, with insane ancestry, after an attack of typhoid fever was alarmed for fear of a return of the disease. He manifested various delusions of food and drink as a source of contamination from the poison of this disease. He ate to great excess one day, then abstained the next, sought all kinds of quack remedies, and finally drank to excess and was an inebriate.

A clergyman after an attack of pleurisy developed the same symptoms, principally dietetic and medical delusions which ended in inebriety. An officer in the army after a period of great suffering in prison became an epicure, with delusions as to the quality and value of food and of the care of the body, which two years later developed into inebriety. A banker lost all his property, and soon after a morbid fear of death, and desire to avert it by food and drinks, possessed his mind, ending in inebriety.

In these and many other cases that I have seen, the history of the incipient stages showed these same mental disturbances in relation to foods and drinks. In some cases delusions with regard to the care of the body, and sudden impulsive ambitions to outstrip others in strength or grace or beauty; or morbid fears of death and delusions of specific medicines to prevent it. I have found this peculiar delusion as to the power of remedies, and the possibility of foods and drinks to perpetuate life and keep away disease, present in clergymen and literary men in many instances which ended in inebriety.

Morbid appetites and unusual tastes, in youth and

early manhood, are very strong hints of inebriety, which may go on, or be checked by some unknown causes. The early history of many cases point to great mental activity before inebriety began, in addition to these nutritive delusions, that have been described. In one case a merchant who from being a very quiet man after the appearance of food delusions, seemed to have delirium of work, which lasted over a year, then merged into inebriety. In another case an unusual desire to be noted was associated with his delirious food impulses. Thus the more accurately the early history of inebriates is traced, the clearer the evidence of a progressive order of symptoms appears before spirits are used, and the subject assumes a sudden enormous expansion, as this new realm of psychological forces is seen and comprehended.

In the second group, or post-alcoholic stage, the symptoms of inebriety after alcohol is used are recognized more generally. In this class the so-called moderate drinker is prominent. Where he is studied carefully his condition and symptoms are only found to vary from the chronic case in degree. The delusion of power to stop at will is noted in the chronic inebriate and the moderate drinker. A certain number of moderate drinkers continue in this state a life time, and suppose it is owing to superior will power that they do not become chronic cases.

Literally it is the absence of some peculiar exciting cause. As in small-pox, a certain number of cases who are exposed do not take the disease. A certain number of cases with symptoms of incipient phthisis never go on to full development, so the moderate drinkers who do not become inebriates are rare exceptions to the rule. Under all circumstances the moderate drinker transmits to the next generation a disease that is sure to appear in some of the allied neuroses. The symptoms of this stage of moderate drinking vary widely, but are all signs of change or breaking down. Delusions of foods and drinks, of strength, of superior character and judgment, with alterations of character, conduct, motives, and a steady failure

of the higher brain functions, seen in little things, emotional changes, states of exaltation and depression, great pride in dress and surroundings, or the absence of it. In brief, the history of the moderate drinker reflects nearly all the various delusions and degenerations of the chronic inebriate. The skilled psychologist can trace these in outline in this stage of the moderate use of spirits. In America this stage of moderate drinking is generally short, the slightest strain or great drain on the nervous system and he is a chronic case, or dies of some intercurrent affection.

Another class of cases have been profoundly intoxicated or poisoned by alcohol, then abstained for an indefinite time, and finally become inebriates. This period is full of hints and signs of oncoming inebriety. This class have a peculiar interest, because many very prominent temperance workers come from it, and not a few sensational preachers, lawyers and literary men are found in this shadowy borderland of disease. When these cases come under observation, a new continent of psychological facts appears. The following are illustrations: A—, a distinguished temperance lecturer, used alcohol to great excess for two years, then abstained for twelve years, becoming famous in the lecture field. He drank and came under my care. From a study of this interval of sobriety it was found to be marked with symptoms of progressive degeneration, that of necessity would develop into inebriety or some one of the family group. Prominent was the almost sublime delusion in his strength to resist all temptation to use spirits again. His constantly increasing egotism, and alternate activity and indolence. For days he would be plunged into the deepest depression unless on the lecture stand, when he would appear in the highest spirits. Then he would be in a state of great mental exaltation. He was at times very avaricious, then generous, and all his conduct and character seemed to become more uncertain. His habits also grew uncertain although his work on the lecture stand seemed much better. He was full of delusions of the care of his body, of food, of

drinks, clothing and sleep, and steadily lost faith in the value of honesty or respect for his word. At times he would borrow money and refuse to pay. He recovered and went back to the lecturè stand, but he was a chronic inebriate with but little hope for the future. B—, a man of forty, drank to intoxication and then continued in moderation for several months and abstained. Gradually he gave up his work (that of a merchant) and became a lay preacher. He exhibited great egotism and desire for notoriety, would sacrifice everything for an opportunity to preach. His private life was full of petty selfishness and dishonest dealings, grasping, tyrannical, and changeable impulses. He ate and drank in the same erratic way. All this was foreign to his usual manner and conduct. He became an inebriate after an interval of sobriety lasting eight years, and remained so until death. In both these cases the first intoxication had started a train of defects that continued on through the free interval of sobriety, and could have been recognized by the medical examiner.

Another case illustrates a class of which I have seen several. A—, a physician, drank to excess at his graduation, then became an abstainer. He was conscious from the time of a great change in the control of his appetite for food and drink. He was very uncomfortable when hungry and thirsty, was irritable, nervous, and unreasonably excitable until this demand was satisfied. This grew more and more imperative and he was very careful to eat with regularity, and thus save himself from these bad feelings. To his friends he grew more irritable, and at intervals was very moody, dull, and bad tempered, and ate voraciously, also using large quantities of tea and coffee. This lasted for six years. Then he had a paroxysm of drink, and soon became a periodical inebriate. The incipient stages in these cases cannot be mistaken, and the careful observer will find in many circles men of talent and often of prominence who have all the symptoms of approaching inebriety, or even inebriety itself, only they do not use spirits.

In the periodical inebriates and the irregular impulsive reasoning drinkers there are always many and varied symptoms which show the march of dissolution and the approach of the drink paroxysm, with more or less certainty. Those engaged in treating inebriates can anticipate the return of the drink craving by symptoms that are fixed and unchanging. So expert do they become in certain cases, as to be able, days in advance, to predict the drink storm. This study of early symptoms in inebriety must of necessity be only an outline for the reason that the inquiry was begun in the fully developed case and carried back to the early stages, depending on the memory of the patient and friends. When these statements were generally uniform and consistent with the later progress of the case, they were put on record as entitled to confidence. In this way outline forms of a distinct stage of inebriety have appeared, now unknown, except as a period of great wickedness. This incipient stage may be briefly noted as one in which the higher brain centers gradually lose the power of performing their higher and more complex functions. Varied forms and states of neurasthenia, with food and nutrient delusions, produce exhaustion which opium or alcohol quickly relieves. The injury and change is in the brain centers in most cases depending upon some inherited defect in cell growth, or special diathesis, and starting into activity from unknown causes. Beginning long before alcohol is used and accelerated into chronic stages by this drug, or kindled into activity by the first use of these narcotics; it becomes the disease of inebriety characterized by an insane and maniacal impulse for relief from this nameless pain and agony of the degenerate nerve centers. Practically the recognition of this incipient stage of inebriety opens up a field of possibilities for the cure and prevention of the greatest importance. As an illustration, the wild, impulsive, irritable boy, who seems to have no control of himself, and goes about almost lawless, that is sent to sea, or to the army, workhouse or prison, and comes back later

a chronic drunkard, might have been saved if the medical man had been called in, and recognized in these symptoms approaching inebriety. The young man just entering business, or the professional who has eccentricities of food, clothing or conduct, which excite ridicule, and ostracize him from the sympathy and friendship of others, becomes an inebriate. Had these symptoms been recognized, and he placed under treatment, this would have been prevented. Or take a more common illustration: The overworked business and professional man who finds all his previous habits, character and motives changing, who has food delusions, and who is recommended bitters and spirits by the non-expert physician, and soon after finds that he cannot stop the use of stimulants and is an inebriate; or the still more dangerous practice of traveling abroad in the wine countries of Europe by men who have all these symptoms of nerve and brain degeneration, with nutrient disturbance of both mind and body, the result of which, in most cases, is to develop inebriety in the most decided chronic stages.

The advice to travel is often fatal to this rapidly increasing class of sufferers. All these cases should come under careful examination by the physician, the heredity and mental and psychical hints of the present should be weighed as carefully as the state of the heart or the nutrition of the body. Those cases should be understood and the "danger signals" recognized and treatment based on them. The history points out stages where the prevention and cure would have been an easy matter; but later, when they come to the asylum, a degree of degeneration has come on in which little can be done that is permanent. To one who studies these cases carefully, comes the most profound conviction of disease following a regular order of progress from its origin to the termination, over the same roads and bridges, with the same symptoms that can be seen and traced. Stages of beginning and progress when medical skill and art are potent and available for cure and restoration, and later stages where little can be

done except to house the patient and keep him from injuring others. To call attention to this early incipient stage of inebriety, to explore and map out its boundaries, is the pioneer work in the great unexplored "dark continent" for scientific men of to-day. In this first study, of the early stages of inebriety I have sought to make prominent the following facts:

1. The study of inebriety reveals a well-marked disease passing through various stages, traceable by many and complex signs and symptoms.

2. The incipient stage seen before spirits are used is marked by dietetic delusions and other symptoms of nerve and brain irritability, all of which seem to depend on heredity or some obscure injury to the nerve and brain centers.

3. A group of symptoms can be found in most cases that may be termed pathognomonic, and will be seen in the later stages fully developed.

4. These early symptoms appear after the first toxic use of alcohol, and in some cases go on to full development, or are held in abeyance by some unknown force.

5. Practically, the recognition and study of this stage opens up a field of prevention and cure that will attract great attention at an early day.

The Care of the Insane.

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THE opinions held by the majority of the community, in reference to the general course of treatment pursued in Hospitals for the Insane, are so crude and radically erroneous that a concise statement of what is really done may be of service in disabusing the minds of many of impressions which cause them to entertain doubts and suspicions which a reasonable degree of information would remove.

In this, as in many other things in life, opinions which have come down from former years, even when erroneous, are too apt to have a more extended currency than those which are the result of more recent knowledge and better understanding of the subject. Prejudices are very tenacious in their grasp of the human mind, and when once implanted are removed with the greatest difficulty, and many never seem able to overcome them, even when convinced that they are wrong and founded on false impressions. Many are controlled more by prejudice than by reason, and are unwilling to be instructed, or to hear the full truth in any particular case, because they feel that by such information they would be obliged to change their opinions and adopt others more consonant with the facts. They insist that they are convinced that their views are correct, and they do not wish to admit that their self-knowledge is not the true knowledge which might be derived from a more extended investigation and examination of things in which progress has been made and new light thrown in the course of that progress. Thus, in regard to Hospitals for the Insane, the opinions too generally entertained are the opinions formed on a condition of affairs which existed in England, more particularly,

about seventy-five or one hundred years ago; and this same condition may still be found in many poorhouses even at the present time, more from want of proper knowledge and arrangement of the buildings than from any desire or intention to treat those under their care in an improper manner.

The treatment in all hospitals organized and arranged for the special care of the insane may be classed under three heads: Medical, Hygienic and Moral.

At the commencement of every case of mental disorder there will always be found more or less disorder and derangement of one or more of the bodily organs or functions, with a greater or less derangement of the nervous system influencing the mental operations. These disordered conditions will require medical treatment, to the extent which the departure from healthy action will demand to remove the morbid action, and thus relieve the system. As every case is to a certain degree peculiar in itself, it will require a certain course of treatment adapted to the removal of special conditions or diseased actions; but when that removal has been effected, a course of tonic medicine with a good nutritious substantial diet will in time bring the system out of the asthenic state in which in the majority it will be found to its natural or normal action.

Many cases of acute mental disorder are subject to such violent paroxysms with such inclination to destroy everything within reach, and often to do injury to themselves or others, or persistently remove their clothing, that some means must be used to prevent these things, and on this account it often becomes necessary to place on them some form of restraint to confine the hands until such disposition passes off. The only appliance used for that purpose in this hospital is the connected sleeves, made of strong material which cannot be easily torn. In these sleeves the hands and arms can be placed and fastened across the body in front so as to prevent any improper use of the hands.

In many cases of long continuance, the disposition to destructiveness is so great and so constant that the same appliance must be used. The patient has entire freedom of movement, except of the hands and arms, and these appliances are used just as a splint would be used to a broken arm, to correct a morbid disposition, enable the individual to regain more healthy action, and to prevent greater injury.

The Hygienic treatment should commence and be carried on in conjunction with the Medical. This treatment includes diet, exercise, and a careful regulation of all matters which may effect the health of the individual. The diet must be plain and should be as varied in kind and quality and as liberal in quantity as will serve to impart the elements of nutrition in the most readily digestible manner, that thus it may be more easily assimilated and enter into the constitution of the different tissues.

It has been ascertained by an extended experience, where reliance had been placed on stimulants to maintain the strength and on narcotics to procure sleep, that, with a more liberal and much improved diet, embracing a larger amount of meat, vegetables and farinaceous substances, the necessity of stimulants and narcotics gradually disappeared under the improved condition created by the food, and those articles, the stimulants particularly, could almost entirely be dispensed with.

The skin should be kept in a healthy active state by regular bathing once a week, or as often as the necessity may arise. Exercise must be enjoined according to the ability and strength of the individual; no fixed unbending rule can be laid down, but only that degree of exercise used which will not fatigue the individual. Many are physically unable to take much exercise, while many who are physically able are mentally disinclined, and in both cases the amount to be taken must be graduated to the capacity of the individual.

There is an idea very prevalent that, in nervous per-

sons who feel weak and disinclined to exertion, the sovereign specific in such cases is exercise. In the great majority of cases, no idea can be more fallacious. All exertion involves loss of nervous power in the sick as well as the healthy, and to expect a person with a weak nervous system to strengthen that system by that which is constantly removing a certain amount of nervous power and force, the very thing they need, is one of these violations of common sense which would not be believed if it were not so constantly and persistently used and urged on a theory false in every conception and practice. The true method for a person of weak nervous system to regain strength is to take a regulated amount of exercise each day, and that amount to be graduated to the condition of the system, so as not in any case to induce fatigue. Rest as much as possible, in the recumbent position, will enable the individual to regain not only the loss of nervous power involved in the exercise taken, but add to that existing by avoiding the cause of the loss and aiding the weakened digestive powers. Sleep is the main indispensable condition for the repair of exhausted energy. No one thing tends more to disorder the nervous system and impair the health, than the continued loss of sleep, and a careful inquiry into the history of cases of mental disorder will reveal the fact that continued loss of sleep has almost invariably preceded the attack. Every one who has felt the discomfort arising from loss of sleep for one or two nights will easily understand how readily a continued loss of sleep will seriously disorder the whole bodily system. The effort then in all cases of mental disorder should be, as before stated, to apply the remedies requisite to remove disordered conditions and at the same time use such means as will cause sleep in the most prompt and effective manner with least tendency to disorder any part of the system. This list of medicines is a limited one and must be used with caution and discretion, for the reason that what will answer well in one case may be injurious in another, and a tendency of a decidedly

injurious character may be created to the continued use of those articles afterwards, when it has been ascertained that relief can be so readily obtained. None of this class of medicines ought ever to be used except on the prescription of a physician familiar with the individual's history and peculiarities. Their use should never be continued beyond the period when the restless excitable state has passed, and a moderate allowance of sleep can be obtained. The improvement of the general health will soon effect what may be further needed.

But while careful attention must be given to the physical condition so as to restore the whole nervous system to a healthy action, it must not be forgotten that the mind must also be occupied or diverted from its morbid ideas, and the great variety of means and appliances used for this purpose has been classed under the general head of moral treatment for the want of a more appropriate term. Everything which can be made available as a means of diversion, using that word in its strict meaning as implying the turning of the thoughts from one direction to another, may be classed under this form of treatment, and it will at once be inferred that the appliances for this purpose will be limited only by the ability, physical and pecuniary, to obtain and employ them, and the inclination of those to whom is committed the direction to give their time and thoughts to the thorough and systematic application. It is a fact of universal experience that the constant attention to one thing, or the regular occupation of the mind by, or its direction to one subject too often becomes wearisome. In no class will this be found more uniform than in those whose minds are disordered, and in whom the power of fixing the attention is greatly weakened. These require a variety of appliances to be tried so as to ascertain which will best serve the purpose of diversion, and there is also an infinite variation in the disposition, mental capacity and receptivity, not only of individuals, but of the same individual at different times, so that it is impossible to know what

will suit best until a trial has been made. All are most easily impressed with that which makes a direct impression on the eye or the ear, and if the object seen is new and out of the ordinary course of experience, education or sphere of life, it is often more readily the means of awakening attention and arousing the faculties of the mind. As a direct appeal to the mind through the sense of vision, nothing can be more easily provided, or more generally used than representations of every kind and character by the magic lantern.

By means of photography, views can now be obtained of anything which it may be considered advisable or desirable to bring before the mind, and these in such variety and beauty, that every class and condition may be reached, and the varying mental states and degrees of capacity can be touched at one or more points, and for the time diverted. But the constant obstacle to be overcome is the profound listlessness and indifference of so many to every object of interest which can be presented, and this exercises more and more the ingenuity to contrive some way in which such persons may be aroused from the lethargy, and some impression made which will awaken some dormant desire or feeling, and thus an avenue may be opened for the entrance of other and different thoughts. The main object to be singled out and attained is to arouse and elevate the mental powers from that course of deterioration to which they seem tending, and if possible by constant, steady effort to train them to higher, nobler and better impulses and thoughts.

It may be asked what is the use or benefit of such effort to those who are apparently so far sunk as not to realize their position and profit by the effort made for them. If it is a duty to take care of such, it is equally a duty to endeavor to improve them in every way, and certainly in no way can this improvement be more readily effected than by infusing into the mind some idea or impression which may change the whole course of the

mind, from a downward to an upward direction. The same question might with equal force be asked, why endeavor to train dull and stupid children whose minds seem unable to take up and retain, at first, the lessons which may be taught them? If steady persistence will overcome the difficulty in one case, so that the children may in time become ornaments in some line of thought, as the history of so many men in different literary pursuits, and in various trades and professions has clearly shown, is it not worth a strong effort to endeavor to lead minds from darkness and impending decay, to health, happiness and usefulness? In addition to the effort to arouse the mental powers by such means, the presence of the individual at such representations and the necessity of quiet and orderly behavior, for the time is a discipline and a training for those who need some such influence to check the wayward tendencies and inclinations and keep them calm and composed.

During the day, occupation and amusements of various kinds can be provided for a large number by different kinds of manual labor in the ward and out of it, by a variety of games, and in the reading of newspapers and periodicals, with the exercise which they are able to take outdoors; but when evening comes, particularly when the days grow shorter and the evenings and nights much longer, and the long hours begin to hang heavy and dull, something must be provided which will serve to break up the listless monotony of that time, and give employment to the thoughts and emotions. For this purpose every evening should have something, and in this hospital every evening has something to divert and attract.

It is true, that there are some who cannot be reached by these means for the reason they cannot be taken to the amusement room for that purpose; but it is hoped that the means may yet be provided by which the same representations may be given in some of the wards of the pictures by the magic lantern on a smaller scale, but with the same objects. A greater variety of occupation

of a light form, fitted more especially for females, could be employed, such as scroll work, moulding in clay, etc., if the means were at hand to obtain the material and the persons to direct the work.

The same may be said of some form of occupation for men who are not able to go out and engage in outdoor labor. These are things which will come, it is to be hoped, in due time, and we must live in hope that that time will not be far distant, when a much greater variety of occupation may be given to all classes, of a kind in which each can readily engage. Small libraries of well selected books in the greater number of the wards would be of great value and advantage, as many would thus be induced to read, who are not able now to do so from the inability to obtain the books.

A great source of interest and attraction at all times would be bright, cheerful and attractive pictures hung up in different parts of the wards.

A restless, fretful or moody person walking up and down the hall, dwelling on his own ideas and fancies, and gradually becoming more uncomfortable to himself and those about him may be attracted from these gloomy fancies by some cheerful picture, and the whole current of his thoughts changed and he himself consequently be more cheerful and agreeable in all respects.

It is freely admitted that all these things cost a large amount of money, but they can be obtained at intervals, and they are all very great adjuncts in the treatment by furnishing in different forms, varieties of diversion; and it is further to be considered whether the mental health, to be promoted and established by such means, is not of infinitely greater value in every way than the limited amount of money required to procure all these means of diversion and education. Order and regularity characterize all the functions of the human economy, and it is the interference with this order which gives rise to disease or disorder of the different organs of the system, and every effort to restore the system to health, must have

primarily and steadily in view this one great object, to establish regularity in the performance of all the functions of the body, and in this effort attention must be given not only to the physical system, but also to the mind, so that its wayward fancies may be properly changed, and such direction may be given as will tend to lead to health, composure and regular balance and symmetry. Like all education this requires time, care and earnest thought, in order that it may be so arranged as to accomplish the best results by suggesting new trains of thought, giving healthy direction to these thoughts and seeking to impress new, healthy and earnest ideas and opinions.

PARETIC DEMENTIA.*

IS IT A PSYCHOSIS, A NEURO-PSYCHOSIS OR A COMPLICATION
OF THE PSYCHOSES?

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

Medical Superintendent of Cook County Hospital for the Insane.

THE delusions manifested during this period, whether depressive or exalted, present two great characteristics, they are neither fixed nor systematized.

Concerning them, Spitzka† says:

When present the delusions are almost pathognomonic. The patient claims to be the most powerful, the richest, and ablest man in his community. He can raise the asylum on his little finger, he has trunks filled with gold in every city in the Union, he is married to all the handsome women in the world, can speak all living and dead languages, has the best developed sexual organs extant, and is the intimate friend of every other celebrity in one person, and the fortunate owner of numerous patents.

The following is a partial list of the possessions of a paretic dement who had at one time been a stock-broker in Chicago:

Six trunks of gold in Chicago, at \$30,000.....	\$180,000
Patent watch, per year.....	50,000
Patent knife, per year.....	75,000
Four trunks of gold at Governor's Island, at \$16,000.....	64,000
Stock in Chicago.....	1,200,000
Patent billiard cue, per year.....	15,000
Real estate in Chicago.....	184,000
Real estate in Washington.....	90,000
Interest in Chicago.....	8,000
Interest in Washington.....	19,000
Total.....	\$1,885,000

This patient made at the time few or no errors in his arithmetic and spelling, and was perfectly competent to compute interest; his alleging a larger amount of interest in Washington where he had less property and his assigning different values to his items in different papers show how little reflection and system enter into such delusions as elements. These delusions are as manifold as the number of paretic dement is great, but

* In this and a succeeding series of articles it is proposed to pass in review the history, symptomatology, aetiology and pathology of this disease, with a view of determining its nosological position.

† Insanity, Its Diagnosis, etc.

they have the common characters of extravagance and lack of system. In the later periods they are also exceedingly unstable, and vary greatly from day to day, so that a patient who had ten thousand dollars yesterday, claims to have a hundred fold that amount to-day, and to-morrow may find no figures adequate to express his wealth. The general of to-day is the president to-morrow, and the "God above all other gods" the day thereafter. One patient lives in a marble palace in the morning, which becomes transformed into diamonds before he gets through. The patient wishes to be whatever he believes to be great and powerful, and his wish is speedily gratified by the enfeebled brain. It is noteworthy that the delusions of belittlement are as absurd, extravagant, unstable and unsystematized as those of aggrandizement.

A. E. Macdonald,* *American Journal of Insanity*, April, 1877, says of the parietic dement that:

He will spend hours in training himself for a boat race; totter up and down the ward in the firm belief that he is walking a thousand miles in a thousand hours, and give you an earnest invitation to test his skill as a boxer. But his powers and skill are not confined to mere animal superiority; mentally he is the most brilliant of men. There is no language with which he is not familiar; no branch of study in which he is not proficient; no philosophical experiment which he has not successfully undertaken; no discovery which is not his own. And the legitimate rewards of such perfection of body and mind have not failed to follow him; renown, wealth, honors, are his without measure or number; he is not as rich as some one else, but richer than every one put together.

Worcester† says:

Prominent differences between the delusions of the general parietic and those of the sufferer from some other form of insanity are seen in their greater extravagance, their want of permanency, and in the absence of sequence and co-ordination.

Austin‡ in "General Paralysis of the Insane" states that:

This mixture of elation and self-sufficiency, increasing, rapidly brings their subject to the confines of extravagant delusion. The transition from the half-mad schemer to the imaginary capitalist is natural; he now talks of the wealth he fancies his projects have brought him. A German physician who, after many vicissitudes, had embarked his all in a commercial partnership in London, into which he was cheated while in the first stage, and who performed all the drudgery of the desk, and even of the warehouse, began to fancy he was possessed of numerous offices, and of a large staff of clerks and porters; a bachelor, he fancied he was married, described the beauty of his wife, and talked of his nineteen children. A poor widow from a work-house imagined she had married her surgeon, that she had had several children by him, and insisted on remaining in bed a fortnight after her supposed delivery. A coachman from Brighton, informed his

* *American Journal of Insanity*, April, 1877.

† *Insanity and Its Treatment*.

‡ *General Paralysis of the Insane*.

attendant he had been the day before examined by twenty doctors. A lady, who had been twelve months in an asylum, fancied she had been there ninety years, and that she was "getting on for two hundred." An Indian soldier imagined he was two hundred years old. A lady caressed her pillow for an infant, of which she thought she had been lately brought to bed. Our singing paralytic plans a voyage to Australia, whence he proposes sending £100,000 during the first month to his parents. Our galoping assistant-surgeon imagines a duke has sent for him to be his domestic medical attendant, and has in consequence settled a large pension on him. A crippled fan-piercer imagines Prince Albert is his brother, and asserts with glee he has "four millions of money." A bankrupt grocer talks of his large estate and noble descent. A poor fisherman fancies "all the ships at Spithead" belong to him. A gardener's wife announces herself as the Rose of Waltham; and a frightfully attenuated servant asks you to admire her pretty hands and feet. But paralytic elation does not stop here, the whirl of the spirits increases and complacency rises into self-translation and self-supereminence. As the paralytic's fancied estate and condition had been too lowly for him, now his very existence in his real name and station are intolerable. He denies, or rather he disbelieves, his identity. Our German physician becomes the brother of Sir John Franklin; a journeyman printer styles himself the Prophet Daniel; the Indian soldier has become Christ, and the bankrupt grocer calls himself God; a porter's simple wife calls herself a "little queen;" the lady "getting on for two hundred" has become a peer's daughter, and imagines her aunt is a marchioness; the "Rose of Waltham" is now a Queen of England, and boisterously asserts that God is the father of her children. Arrived at this pitch, everything becomes invested with immensity, grandeur, or beauty.

Mickle* states that:

The distinguishing features of these delusions are they are multiple, varying, ridiculous, and self-contradictory; and betoken an abrogation of the power of judgment, while they often culminate as if in a crescendo movement of the expression of magnificence. The patient is not only "possessed," but inflated with greatness. The methods of language fail him borne on this swelling tide of exultation, the very heavens appear to open, and he holds converse with celestial beings, and has ecstatic visions of eternal fields. Last flight of all, he may announce himself enthroned as the Almighty, and invested with His sceptre of universal sway, amid the pæans of angelic hosts. The delusions of persecution betray too great an incoherence and mutability. If so be that these patients attempt suicide or homicide, there is usually no fixity in the reasons they assign; no precaution, no concealment, no persistent aim in the accomplishment of the act itself. There is the same obvious childishness in the suicidal acts or attempts—the same mental, moral, or affective enfeeblement—as in the expansive form.

Skaet† says:

* General Paralysis.

† General Paralysis.

The patient fancies that he is possessed of enormous wealth; he is full of projects for the benefit of mankind; he is about to purchase and endow libraries and churches for the public good; he is a prince ennobled by the Queen, about to marry a Spanish countess; he is possessed of fleets laden with gold and diamonds. The house in which he lives is a palace; all the attendants and females are his lords and ladies; the walls are gilded, the windows are made of diamonds; he, himself, made the sun which illuminates them; he is a mighty conqueror, and destroyed Sebastopol, captured the Emperor of Russia, but graciously pardoned him; he is God himself, and wields universal and omnipotent power; he can talk in any language; he can sing, and he does sing readily, but most discordantly; he can write most beautiful novels and enchanting poetry; he has carriages and horses without number; steamboats waiting to convey him to London to see the Queen; schemes of universal conquest, or universal philanthropy. In the midst of all this imaginary power and grandeur, he is (and this is a very characteristic feature of general paralysis, as compared with other forms of insanity with similar delusions,) docile and facile; he is diverted from the highest enterprise or the most important duty by the simplest request; he forgets the conquest of Europe, or the immediate commands of her Majesty, for a walk round the airing-ground with an imbecile companion, to whom he talks condescendingly, promising him a dukedom or a bishopric. Everything about him is good—everyone is so kind—his food is first-rate; he offers a cheque for £75,000 for the purchase of the asylum and promises to endow it with unbounded munificence, and to convert it into a paradise of brilliancy and bliss.

Griesinger* says, speaking of parietic dements:

In their delirious ideas they often contradict themselves; they do not persist in them, but soon forget and pass on to others; the circle of the ideas is, in spite of their apparently active production, very limited; incoherence soon becomes (particularly in writing) marked; and it is in the highest degree remarkable how all things, even the most absurd, are at once accepted as realities without the least internal opposition; the *ego* becomes quite incapable of resistance, and is entirely taken possession of and subdued by them.

Sheppard† says:

It is very noticeable in this disastrous malady that the patient rushes from one absurd fancy to another, there being an absence of that fixity of delusion so common in ordinary mania or melancholia. He will assent to any absurd proposition which you may make to him, undertake any achievement, however gigantic; embark in any speculation, however ridiculous, with a sanguineness which is characteristic of the disease (with rare exceptions) up to the last glimmer of his mental faculties. This sanguineness is so remarkable as to tinge and color the whole temperament under conditions and circumstances of the most distressing physical nature. I have a patient now, a general paralytic, near the end of his chequered career, with large ulcers on his legs; but his legs are made of gold. He is

* Mental Pathology and Therapeutics.

† Lectures on Madness.

the Emperor of the World, and I am his lieutenant-general in command. He is literally insensible to pain (and this anæsthesia is very remarkable in some cases) and being questioned as to his condition, describes himself as "first-rate." This expression, indeed, is so common in general paralysis, that I have come to regard it as almost pathognomonic—and verbal formula of a hopeless malady. No happiness which you or I shall ever feel—such is the irony of disease!—can approach the supremacy of pleasure and satisfaction which belongs to him who is a subject of this most dire affliction.

Bristow says:*

But ere long the grandiose, notions, and delusions which are so characteristic of this affliction, manifest themselves. These usually have relation to money and wealth. The patient, who perhaps is in receipt of a small precarious income, at first believes that his income is assured to him and double or treble of what it really is. And by rapid strides he assumes that he is worth thousands, millions, millions of millions, that all the gold in the world is his. Or he enters upon imaginary speculations, buys up all the railways in England, all the railways in the world, and gives part of £200,000 a year to any one who strikes his fancy. Or he has a house of gold, surrounded by trees of gold and precious stones; he has extensive possessions, a country, a county, the whole universe. In connection with the idea of wealth, arise ideas of glory, honor and power. Such patients become distinguished soldiers, generals, emperors; they are great statesmen, poets, or philosophers; they are brothers of Christ, Christ himself, or the Almighty; they are hundreds of feet high; their strength is enormous; they can create giants and worlds; they can cure the sick and raise the dead. Their notions, too, are often fantastic, as well as grandiose; they have several rows of natural teeth; they have an unfailing growth of hair, which they can spin out of their heads like silkworms from their tails. The delirious fancies of general paralytic patients are always associated with more or less dementia. Their delusions are not systematized, and their actions are not necessarily in conformity with their delusions; moreover their delusions are variable, and are mingled in the most grotesque way with the circumstances of their daily life. Thus, the man who believes that he is worth millions, and is ready to bestow thousands, will gladly accept a few shillings, will talk reasonably about his daily earnings, will beg piteously for a little tobacco. He who believes himself to be Christ will talk perhaps rationally on his private affairs, and be ready, if such has been his occupation, to polish your boots or sweep your chimney. The patient who is an emperor or king, will tell you that his wife is a washerwoman and her children attend a charity school.

George F. Jelly† states concerning the delusions of paretic dementia that:

The delusions change rapidly; there is great incoherence; when questioned the patient contradicts himself, and when his delusions are proved false, he may admit their falsity in one moment and reassert them the next.

* Practice of Medicine.

† *Boston Medical and Surgical Journal*, Vol. CX.

Drouet* states that the delusions of parietic dements are vague, inconsistent and variable.

G. Mackenzie Bacon† says that the delusions of parietic dements are ludicrously contradictory.

Luys‡ says that the delusions of parietic dements are self-contradictory, and that the patients have lost all sense of the absurd.

Lange|| states the delusions of parietic dementia exhibit intellectual feebleness, whether the same be expansive or depressive, and much the same opinion is expressed by Voisin.§

It is obvious that these delusions show not creative power but mental weakness, and by them the fact that the mental condition is that of dementia, is demonstrable. Parietic delusions, as shown by the experience of representative alienists, are characterized by:

1. Lack of systematization.
2. Absence of logic.
3. Inherent contradictions.
4. Feeble creative power.

These elemental peculiarities afford a basis for comparison with delusions of other psychosis:

* *Annales Médico-Psychologiques*, Tome 1, Série VI.

† *Journal of Mental Science*, 1865-66.

‡ *Maladies Mentales*.

|| *Hospitals Tidende*, 1833.

§ *Paralysis Generale*.

The Posterior Commissure of the Brain.

By E. C. SPITZKA, M. D., New York City.

OF a number of the brain tracts we know neither the commencement nor the termination, and all surmise regarding their function will continue to be fruitless, until these important factors are determined. Nowhere is there more uncertainty than in the thalamic region, and it is the very tract, which from its superficial situation, its accessibility to the operating knife, and its constancy in the vertebrate class, one might have expected to have been satisfactorily traced, regarding which there is the most doubt.

The posterior commissure runs across the median line, immediately in front of the anterior corpora bigemina. On section, transverse to the brain axis, it appears to be composed of entirely parallel fibres, and to be a true commissure. A comparative study of successive sections induced Meynert to commit himself to the view that, it is not a commissure in the sense in which that term is often used, meaning band uniting symmetrical structures,* but a decussation; he held, that said thalamus was connected with the reticular field of the tegmentum, by two great strands, one "direct," that is running from one thalamus to the reticular field of the same side, and one "crossed," connecting it with the reticular field of the opposite side. In other words, each reticular field contained fibres from *both* thalami. Many of Meynert's theories have been corrected by more recent writers, in this instance, however, the application of a method which for the exactitude of its results stands unrivaled, enables me to confirm the great master of modern encephalic anatomy. Still, as the deductions made from such methods

* Such as the corpus callosum.

as Meynert followed have become generally subject to dispute, the establishment of the connection he claimed, by a convincing method, may be regarded as a contribution to knowledge. Besides establishing definitely that the posterior commissure is a decussation, the researches warranting this conclusion, also enable me to affirm the exact location of the crossed and uncrossed thalamic fasciculi in the segmentum.

The readers of *THE ALIENIST AND NEUROLOGIST* are doubtless acquainted with the principle on which what is known as Gudden's method rests. A given organ, say the eye, is extirpated in a new-born animal. It is allowed to recover, and killed after some weeks, months, or even a longer time. It is then found that the development of the brain has been influenced in a remarkable manner. Not alone the optic nerve of the same side, but also the optic tract of the opposite side, the opposite half of the corpora bigemina anteriores, and the opposite geniculate bodies are found to be absent in animals with complete decussation of the chiasm; in others, with a partial decussation, the same atrophy is found to a different extent on both sides. From these appearances it is evident that the atrophied ganglia are the ones which, under normal conditions, are connected with the visual functions. Again, the motor region of the cortex is destroyed in a kitten, then the pyramid tract fails to develop; the motor nerves of the eyeball are destroyed in still another, and the nuclei of origin of these nerves are found wanting if the animal is killed some time after. The great progress in cerebral anatomy now being made is in large part due to the Ariadne thread which Gudden gave us in his perfection of the "Degeneration Method."

About nine months ago I introduced a needle into a kitten's skull, and making a downward movement withdrew it. I had cut the lateral part of the left thalamocrural region. The animal did not attain one-quarter the weight of its brethren of the same litter, and for a long time went around in a circle day and night, was unable

to feed, and but for the tender nursing by female hands would not have survived a few days, as it had to be brought up by hand. Three months later I killed it. Without detailing the appearances described in a preliminary communication elsewhere, I will but say that the left cerebral hemisphere and the left thalamus were absent; that all the nerve tracts, such as the pyramid and cortex-lemniscus of that side were absent as far as the spinal cord, and in it. These and other results were known before this experiment, and have been described by Mayser, Gudden and Von Monakow. I will limit myself here to the novel demonstrations:

1. These was crossed atrophy of the nucleus of the column of Brudach.

2. The posterior commissure was present, and about half (?) the dimensions of the normal.

3. The fibres from the thalamic substance to the commissure were present on the right and absent on the left side.

4. The caudal continuation of the commissure, that is its radiation into the tegmentum, was present on the left side and absent on the right side, that is, it could not be identified.

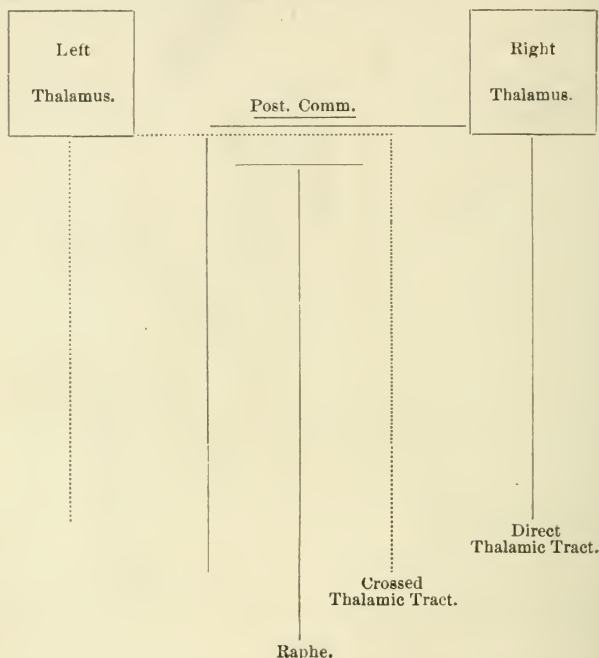
5. There was present, on the left side, a distinct field under the posterior longitudinal fasciculus, and close to the raphe, which was continuous with the posterior commissure fibres. This field was shrunken on the right side.

6. There was present, on the right side, latero-caudal of the angle between the descending trigeminus root, and the posterior longitudinal fasciculus, another larger field. This field was absent on the left side.

7. There was a difference in favor of the left side, throughout the internal division of the reticular field as far as the large fibres, continuous with the field mentioned under 5, are concerned.

From all these facts it is evident that the thalamus is connected with the fundamental strand of the anterior column of the oblongata, if not of the cord, by means of

the internal fibres of the reticular field, and that this connection is a crossed connection.



I am not yet able to determine whether the lateral uncrossed field is from the thalamus itself or the sub-thalamic region, but in comparing my case with those in which hemisphere- and hemispheric-ganglia atrophy were produced, am inclined to the former alternative. It is not improbable that the atrophy of the right nucleus of the column of Brudach was connected with that of this field.

Inasmuch as the arched fibers of the "tegmental decussation" of Meynert and Forel were absent on the left side, it is probable that the field into which the posterior commissure is continued to the medulla contains an admixture of these fibers after *their* decussation.

A Case of Psycho-Sensory (Affective or Moral) Insanity.

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

THE following is one of the case records which the writer had in mind when his papers on "Moral Insanity" appeared in preceding numbers:

In the month of April, 1867, H. H—, a bachelor, aged 55 years, was admitted to the Missouri State Lunatic Asylum, with a form of insanity which, from the history and habits of the person as learned on admission from his friends, was recorded as chronic epileptic dipsomania.

At this time the writer of the record was not a believer in moral insanity, but considered such a state of mind as a psychological impossibility.

It is recorded of this patient that five years preceding his admission to the hospital, while acting as steward in the United States Marine Hospital service, that he first displayed eccentricity of character. He would then frequently leave important business unfinished and go away without explanation either before or after returning, and he was also given to spells of clandestine drinking. His conduct was then erratic and his disposition irritable, but aside from this there was no observable intellectual derangement.

There was no semblance of epileptic automatism in his fits of going away from his work or in his spells of drinking. Having been myself a medical officer in the Government Marine Hospital at the time his insanity began, although I did not then recognize his conduct as insane, because then less familiar with the subject of insanity in its many phases, I recall no act indicative of unconsciousness on his part at that time, although he was sullen and unsatisfactory at times in his speech and

conduct, when spoken to about delayed or neglected clerical work. But this was attributed to ill-temper. He probably at that time had nocturnal epileptic or epileptoid seizures.

His natural habits were those of industry and neatness; he was of ordinary intellectual capacity, and his education was limited to reading, writing and simple arithmetic, suited to the ordinary demands of business.

He greatly improved during his residence at the asylum, and not being restrained of the liberty of the premises, he absented himself without leave about the last of the following September and went back to his home in St. Louis. On the representation of his friends as to his continued improvement he was discharged October 23d.

The predisposing cause of his insanity is recorded as epileptic, and the exciting cause as intemperance, but having made the record myself in the earlier part of my asylum experience, I take this occasion to record my conviction that the epilepsia was developed by intemperance, and the insanity was the result of the insiduously persisting epilepsia, as his friends in a subsequent statement ascribe intemperate habits to him and an irritable and overbearing disposition when he appeared to them to have been rational. His general health was good.

On the 13th of July, 1869, he was admitted to the St. Louis Insane Asylum, where he is recorded to have died May 8th, 1872, of maniacal exhaustion, more properly the exhaustion of dementia, the record stating that he went to his bed about April 1st, and from then to the time of his death scarcely moved at all, and about a week before he died became stupid and scarcely conversed any afterwards. His father is reported as having been insane the last year or two of his life.

His epileptic attacks were infrequent and the paroxysms of short duration. I only recollect of his having two during his stay at Fulton, and it is recorded on the book of the St. Louis Asylum that he had "had no epileptic seizure in this asylum" up to February 18th, 1870, nine-

teen months after admission. It is also recorded that he was "a constant annoyance, declaring he was not insane, and demanding additional privileges," and this is substantially what he claimed at Fulton, although he could not long harmonize with any one who employed him or with any of his friends out of the asylum, or with any of the patients in the asylum. He found fault with his food and his treatment by the attendants, and without betraying delusion of *any kind as the term is ordinarily understood and accepted by alienists* (though we think delusion should have a much wider definition so as to include any wrong mental conduct based upon and caused by morbid subjective conditions), *he was as much out of harmony with his surroundings as maniacs usually are.* He could play a good game of cards or billiards, ball or ten-pins, when in the humor, and when his play company was congenial enough to him to permit of his continuing to the end of the game, and on bright sunshiny days after a night of good rest, he would sometimes succeed in doing so. Sometimes his amiable and complaisant moods would continue through several successive days, but it would not be long till he would express his dislike toward some patient with whom he had been fraternizing, or towards some attendant who had been particularly kind to him, based upon some slight or insignificant provocation. He was selfish in an extreme degree and characteristically egotistical. He had no delusion (such as alienists ordinarily recognize) concerning himself, but his egoism, as it always is in these cases, was delusional, as much so as the exalted self-feeling of paresis or the opposite self-feeling of melancholia. He did not imagine himself a great or important or rich personage, but he expected great attentions and many favors. He could not adjust himself to his environment, and was accordingly very unhappy most of his time, as such patients usually are. Any one familiar with his "much ado about nothing" habit of complaining; his inharmonious adjustment of himself to his surroundings; his irritable temper, rising at

times to towering passion upon the slightest provocation; his suspicious, envious, jealous and malicious disposition, could category such a case only among the insane. Miserable as was his existence to himself in the asylum, he was less happy out of it, and when out, wished himself in, as when in, he wished himself out.

He was probably better satisfied when he was drunk, as such patients often are, and a spell of drinking to obliviousness often takes the place with them of a period of specially insane conduct.

At such times as he was seeking to make an especially favorable impression on the asylum superintendent with a view to securing his discharge, he could be urbane to an obsequious degree, but when the limit of his self-restraint would be reached and he was told he must stay still longer in the asylum, it was a study to note his smothered wrath or to hear him swear (though he was not habitually profane), especially if he thought himself unobserved. His vocabulary of oaths was as voluminous as that of a practiced veteran in profanity, but in the midst of a swearing bout he would suddenly stop with a look of indescribable disgust at the inadequacy of his language to do justice to the demands of the occasion.

This man was pronounced insane and sent to the asylum upon his conduct, and in the direction of insanity, his actions, as they often do in these cases, spoke louder than words. He could make a place of peace a pandemonium; and it would often puzzle one to find out how it was accomplished, for his cunning at planning plausible statements and defences was equal to his excessive ill-temper and exaggerated self-feeling.

The beginning and ending of this case was similar to other forms of insanity about which there is no dispute among psychiatrists, and there will be no dispute about the existence of this form of insanity when insanity shall no longer be restricted to impulsive or delusional forms, based mainly upon disease associated with one of the so-called five senses, as it now generally is, but shall be ex-

tended, as it ought to be, to all forms of *disordered mental conduct caused by abnormal subjective sensory conditions without adequate objective excitation*. In moral insanity, as in lypemania, the reasoning may be sound enough, but the judgment is abeyant to and dominated by the morbid condition of the organism. The delusion is not special but organic, and may originate in states of the sympathetic system, the solar plexus for example, rather than in any one of the five senses.

In this sense there is delusion in all insanity. In this sense moral insanity is a delusional form of insanity, although there may be appreciably no specific intellectual lesion, *i. e.*, no disorder or wrong use of the reason which would persist after the correction of the morbid organic impressions which influence the mental conduct.

Dr. Chas. N. Stevens, Superintendent of the St. Louis Insane Asylum, to whom this article has been referred, writes that he fully endorses all that is said about H. H.

Clinical and Anatomico-Pathological Contribution to the Localization of the Psycho-Visive Centre.*

By PROF. SALEMI PACE.

THIS work of Salemi Pace appears to have been prompted by an interesting case which came under his observation in the Asylum of Palermo. It was that of a man, a dangerous epileptic lunatic, who was admitted into the asylum on the 12th of February, 1867, and who died in the end of May, 1883, at the age of 53 years. It appears that his father was a person of very intemperate habits, and his mother was of a feeble temperament. Both parents, however, lived to advanced ages—the father to 81 and the mother to 91. The son had led a very turbulent and irregular life; much of which had been spent in prisons. It would seem that he was taken out of the asylum prematurely, though he remained at home for eight years afterwards, “laboring assiduously in the fields, but manifesting little interest in anything else.” He was subject to accesses of maniacal rage, which finally obliged his parents to place him a second time in the asylum, in April, 1875, where he continued until his death. The most important fact in his condition, so far as related to the subject of Prof. Pace’s article, was blindness in the right eye, and its association, as revealed by the autopsy, with degenerate atrophy of the left occipital lobe of the cerebrum on the opposite side, and crossed atrophy of half the cerebellum. It is unnecessary to enter farther into details, which, as usual in all the autopsic records of Italian alienists, are long and very minute. Neither do we deem it expedient to reproduce lengthy extracts from the article. The author has dilated pretty

* Translated by JOSEPH WORKMAN, M. D., Toronto, Canada, from *Il Pisani Gazetta Sicula*, Palermo, 1884.

widely on the past and present literature of his subject. We, however, take it for granted, that the readers of the ALIENIST are sufficiently familiar with the authorities quoted and criticized by the author, to warrant the hope that they will willingly dispense with the chapters devoted to the general subject of localizations, and be content with the last one, which bears more immediately on the case under consideration, and closes with a series of conclusions arrived at by the distinguished writer.

Professor S. Pace prefixes to this chapter the following question:

“Is the case of C——, studied by us, of such value as to be regarded as a contribution to the localization of the psycho-visive centre?”

To which he replies in the following terms:

“In order that we may be able to approach an affirmative reply, it is necessary to exclude every influence of cerebral lesions on the right eye, save that alone in the occipital lobe. This is not the first time, as we have before remarked, that pathological anatomy has verified the fact, that partial atrophy of a cerebral hemisphere has been associated with atrophy in other parts of the brain, reaching even into the opposite cerebellar-hemisphere. None, however, of the authors I have mentioned—Türck, Charcot, Laborde, Luys—have said that blindness of the opposite eye, or indeed any disturbance whatever of sight, was connected with it. The distinguished Professor Raggi, of Voghera, has preserved a brain with crossed cerebro-cerebellar atrophy, which belonged to a person affected with epileptic phrenosis, and who saw well with both his eyes. I have myself recently, in the autopsic cabinet of our asylum, dissected the body of a male epileptic, the left hemisphere of whose cerebrum was atrophied throughout, together with the underlying ganglia, which atrophy was propagated to the corresponding cerebellar lobe; yet this individual during life labored under no disturbance of vision. It might, perhaps, be

said that these asymmetric brains belonged preferentially to epileptic lunatics.

Baillarger, in six out of seven autopsies of patients affected with incomplete hemiplegia, observed atrophy of one hemisphere; Baume remarked it in epileptics, and Meynert in epileptic idiots with cerebral asymmetry. According to Boyd, it may reach such a degree that one of the two hemispheres will hardly equal one-half of the other, etc.

Asymmetries and atrophies may therefore furnish the reasons for the mental disharmony of these individuals, and for that of the cerebro-cerebellar functions, but they are not necessarily connected with the annulment of certain sensorial functions, and in particular with the visual, which is the one now under consideration. But it is not the same when the lesion is specially located in one of the cerebral lobes, and lesions of the cerebral regions mentioned are associated with this. Independently of what has been before stated in this relation, a very interesting case in science is known, which at this point deserves to be mentioned. In the anatomo-pathological collection of Wagner is the brain of the celebrated mathematician DeMorgan, of which a cut is given in the work of Bastian, who, after having described several particulars relating to the organization of it, as regarded the high intellect of the great mathematician, suddenly adds that, "in consequence of the loss of the right eye, which took place a few years after birth, the left hemisphere became notably smaller than the right; though the measures taken, after it was flattened by its own weight, and readily contracted from remaining in alcohol, did not show that diminution in the part which was so manifest in the fresh state. Nevertheless, the left hemisphere is, even to-day, distinctly smaller than the right, both in length and breadth."

"The left occipital lobe," says Bastian, "is very distinctly smaller and less rounded exteriorly than the right. The region of the supra marginal lobe and of the angular

convolution is evidently more developed on the right side than on the left, though these are the convolutions which, according to Ferrier, should be considered as the principal seats of the visual centre. Excepting the state of degeneration and the aspect of depression of the right optic nerve, and of the corresponding optic bandilet, nothing is found which can explain the smaller volume and the limited development of the left hemisphere. The left anterior one of the tubercula quadri-gemini is a little less prominent than the right anterior."

At this point Bastian proceeds to make other observations, adding that DeMorgan had never suffered any disturbances of motility; he also says that he was surprised at not finding associate atrophy of the opposite lobe of the cerebellum, as is usual in many cases of atrophy of the cerebral hemisphere; and, finally, he concludes by attributing the atrophy of the left hemisphere to that absence of stimulus which must normally be received from one of the most important of the senses—that of sight.

We may note, in the first place, that the author attributes to the functional inaction of the right eye of DeMorgan, the atrophy of the left cerebral hemisphere. There is nothing improbable in the occurrence of this reciprocal influence, for as the right eye no longer sent in its stimuli to the opposite cerebral hemisphere, and there stored up its visual images, it is evident that a correlated atrophy of this hemisphere might be produced. As to the rest, the studies on lesions of the nervous centres, resulting from peripheral causes, are too numerous to require anything to be here said about them.

But the nexus of functional relation between the two atrophied organs now treated of, may be held in a relative, not an absolute manner, since, as has been said, the atrophy mentioned may exist without ocular lesion. We cannot say so much for the occipital atrophy observed by Bastian, who has not awarded to it the weight which it merited, simply because of his mental preoccupation as

related to the psycho-visive centre, assigned by Ferrier; that is, the angular convolution, which he found in normal state.

I will be permitted to say, that these two cases of right eye blindness, with corresponding atrophy of the opposite occipital lobe (and I here allude to the observation of Bastian and the other related by me) should not be overlooked, in so far as the localization of the psycho-visive centre is concerned. It might, it is true, be rather difficult to determine whether the functional inaction of the eye had been the cause of the atrophy of the cerebral centre, or the contrary, that the alteration in the latter had caused the ocular atrophy and the blindness. I incline, however, to believe that in the brain of DeMorgan, the atrophying action was effected from the periphery to the centre. In fact, the occipital lobe was found atrophied, or diminished in volume; not so in the brain of my subject, whose occipital lobe underwent a hyperæmic, irritative and degenerative process that could not be produced by the functional inaction alone of the peripheral organ with which it was related. It was that special process which was localized in the occipital lobe, that served as the initial stimulus to the epileptic accesses, and temporarily brought on the alteration in the visual organ. In the one way or the other, however, that functional nexus which we have sought to confirm, between the visual organ and the occipital region, becomes not the less certain, but so much the more, when we revert to the experimental and clinical studies, to which we have before given attention.

Nor can any doubt as to functional compensation here presenting itself, since the sensorial peripheral organ being destroyed, compensation from any other centre became impossible. Wherefore, the influence of other lesions being excluded, as I have said, which might subsist without ocular conscience, it appears proper that the two lesions, the peripheral and central (but especially in our case) would stand so prominent and undoubted, as to enable us to

hold that they constitute an important fact in support of the localization of the psycho-visual centre.

I now leave to the reader to decide whether the case I have described brings any useful contribution to the localization in question.

In the meantime I present, in condensed form, what I have been stating:

1. The study of cerebral localizations has been so extensively cultivated experimentally, that the uncertainties still scattered over such a vast and marvellous field, prolific in scientific investigations, cannot, by universal consent, be eliminated, unless by anatomico-clinical facts.

2. It is precisely under this point of view that I have given a case of blindness in the right eye, which arose in the first months of life, in an individual who grew up an epileptic, and who died at the age of 54 years, and at the autopsy presented degenerative atrophy of the entire left occipital lobe.

3. In the study of cerebral localizations, therefore, the exclusive and essential part of the present work has been limited to the *research of the psycho-visive centre*, based upon the before-mentioned anatomico-clinical observance.

4. From the history of my case it appeared that there did not exist in his antecedents any hereditary defect or organic anomaly whatever; but the mother, at the time of conception, was laboring under great domestic troubles, to shake off which her husband indulged much in wine. She suffered during her pregnancy an unexpected violent emotion, after which she felt unwonted movements of the fœtus. The infant, at two months after birth, without any appreciable cause, became at the same time blind of one eye, and affected with convulsions. These in time became epileptic, with perturbative and impulsive consensus in the psychic and the motor spheres.

5. The patient did not present any motor disorder during life, excepting a little muscular rigidity in his last months, and in the sensorial sphere, as far as his intract-

ability permitted us to observe; excepting that of the right eye, all the other senses appeared to function well. At last a vaso-paralytic diarrhœa brought death, and among the lesions discovered at the autopsy those receiving chief attention were the following: Crossed atrophy of the left cerebral hemisphere and the opposite one of the cerebellum; degenerative atrophy of the left occipital lobe, the convolutions of which had almost entirely disappeared; atrophy of the two antero-posterio-quadragesimi, of the optic bandlet, the thalamus opticus, the motor communis muscle of the eye, the cerebral peduncle, and half of the annular protuberance; complete atrophy of the right eye.

6. The microscopic examination showed: Ossification of the crystalline lens; fatty granular transformation of the muscles of the eye, which were attenuated. Relative to the left occipital lobe there were observed a myriad of capillary hemorrhagic foci with sclerotic texture, and disseminate pigment patches. In some of the preparations deformed blood globules were seen. Of the cellular and fibrillar elements of the same region, some were atrophied, others had disappeared, and others had degenerated. These alterations led us to suppose that the region mentioned had undergone an irritative, hyperæmic, and degenerative process, of ancient date.

7. Founding on the studies of Virchow on congenita encephalitis, of Cotard on the pathogenic conditions of atrophic alterations in the cerebrum, and those of Israel, Bronasdel, etc., it may be admitted as probable, that this process, localized in the left lobe, commenced during intrauterine life; and perhaps the numerous perturbative causes presiding over foetal evolution were not foreign to such an occurrence.

8. Whatever dissentient experimenting localizers may say of the *epileptogenous zone*, it is almost generally admitted by anatomo-clinicians, that all the possible lesions of the cerebrum may originate epileptic convulsions, Further, the researches of Ball and Krisaber, instituted

on forty-two epileptics (and our patient was an epileptic), have established that among the diverse encephalic lesions, nine belonged to the occipital lobes. It is, therefore, not strange to suppose that the occipital lesion was the prime initial fact that determined the convulsions; and when we reflect on the cotemporaneous visual alteration, we cannot avoid admitting, in this case, a real nexus between the peripheral organ and the central.

9. Although unilateral cerebral atrophy and that of the corresponding ganglia, with propagation to other proximate or distant regions of the principal nervous centres, are observed chiefly in lunatics and epileptics, this detracts nothing from the preceding assertion, which is based on the appropriate fact of the occipital alteration, of which these atrophies have been only the consequence. They are, in fact, referable, according to the opinion of Potain, to the simple propagation of the primitive pathological action, which at a long time past commenced in the occipital lobe.

10. The direct functional relation between the occipital region and the visual organ has, besides, been experimentally found by Hitzig, Ferrier, Munk, Luciani, Exner, Muschold, Tartuferi, and *first of all*, by our celebrated Bartolomeo Passizza. Anatomico-clinical observations have confirmed these researches, as is shown by the cases reported by Passizza, Fürstner, Nothnagel, Poolez, Hirschberg, Baumgarten, Wernicke, H. Jackson, Wetter, Bastian, etc.

11. Independently of all that has been before stated, the description given by Bastian of the brain of Professor DeMorgan, is of great value for the occipital localization of the psycho-visive centre. Our own case shows a great resemblance to that of DeMorgan, excepting, that in it the lesion commenced in the centre and proceeded to the periphery, thus accounting for the epilepsy, whilst in DeMorgan it had the opposite course, from the periphery to the centre.

In either case, there cannot be excluded, between the

two organs mentioned, that relation by means of which the localization of the psycho visive centre in the occipital region of man, seems to be a fact at length reached by science.

[The author appends two illustrative plates of the brain of his patient, one of which is a view from above, and the other lateral. The extent of the occipital defect is very manifest, especially in the lateral view. It is to be hoped that the artist has not taken any liberties with the limits of the original.—TRANS.]

The Possible Origin of Some Delusions.

By S. B. LYON, M. D.,

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Washington, D. C.

AS the interested observer walks the wards of any great insane hospital, and becomes intimate with the medley of strange and curious fancies which prevail among the patients, he tries to enter into their process of thought—to put himself in their place—and thus perhaps to discover by what mode of reasoning such strange irrational conclusions have been reached.

Many of the minds we meet in our walks, among this little section of humanity, seem to be struggling to see as “through a glass darkly,” and to recognize, through a veil of acquired feebleness and incapacity of thought, old familiar objects; gradually the effort grows less, the veil thickens, the face smooths out, expression is lost and the vegetable is all that remains of the demented mind. All that makes man higher than the animal is gone; indeed, the familiar intelligence of many animals is superior to what often remains of these wrecks of humanity.

Sad as is the final condition of the body from which mind has departed, and much as it calls upon our active sympathy, we find a far more interesting study in the active, but not less abnormal, minds about us, those which live in a realm of curious fantasies, a grand masquerade, where the *propria personæ*, and not the costume, is assumed. How has the original *ego* been lost, and this strange individuality been developed in the person?

A class of delusions I wish to call attention to seem to be developed outside of any misconception of morbid sensations, and to be the waking belief, in dreams. In the persons I have observed, these delusions were of a

fleeting character, and existed in enfeebled minds where other and more fixed delusions also existed.

In our own experience we have at times noticed after vivid or painful dreams, that the impression persisted even after awaking, and a little time and some effort was necessary to shake off the feeling of oppression; and what takes seconds or minutes in the sound intelligence, may take hours or days in minds which have lost something of their original vigor, through any pathological cause, or through the natural decay of old age. The impression of the vision asserts itself more strongly without doubt, and its influence lasts longer; nay, indeed, becomes a lasting delusion.

The dreams preceding insanity, acts of homicide, suicide, etc., are well recognized. Abundant authority, as well as our own experience, shows that painful and strange dreams occur often in the prodromal period of attacks of insanity, being concomitant to the disturbed mental action, which is beginning to manifest itself and these are due to the distress of the patient, who is already overshadowed by the approaching clouds, which will soon completely envelop him.

In more startling form are the visions which form their intensity and the previously prepared nidus where they immediately incubate, cause outbreaks of violent excitement and complete overthrow of the former habits of mind, or provoke the suicides or homicides which startle the community.

Instances of these intercurrent or violently exciting dreams are given by Winslow, Bucknell, Tuke and others, and Dr. Spitzka, in his late book, mentions a striking illustration of the latter in a case occurring in Germany and discussed in the Medico-Psychological Society in Berlin, where a systematized delusion had such an origin in a person who had not before shown any insanity.

A milder and less sensational effect of vivid dreams, than those just mentioned, is the production of fleeting delusions in feeble minds, and I will cite a case under my care to illustrate this point:

E. F—, aged 76 years, has passed three years and

a-half under hospital care and treatment. She was at one time the owner of a comfortable property, which she lost through the fortunes of the late war, but for years, not appreciating that whatever the equity of the case might be, it was no longer *sub judice*, she exhausted her strength and the generous aid of her friends, moving about restlessly from place to place, pursuing her *ignis-fatuus* through lawyers' offices and the courts, until she became at length so debilitated by disease and so weakened in mind that her friends found it impossible longer to make her life at all comfortable, while she had liberty to dissipate all the aid they could give her, in her efforts to regain her lost property, and she was committed to this hospital.

Adding to a naturally imperious disposition the *foibles* of age, she constantly quarreled with those about her, charging them with stealing from her valuable dresses, jewels, watches, etc., which articles she had long since ceased to possess. Her partial blindness caused her constantly to mislay small articles, such as her glasses, in moments of forgetfulness, which she fancied had been stolen from her. And her suspicions led her to keep a number of worthless papers locked in a box, the key of which she as frequently lost as she did her other small articles. Naturally, or by education, she could be exceedingly pleasant, when not the prey to her suspicions, and at such times she would invite numbers of persons to go with her to her former home—not being able to realize that it had been destroyed by fire long since, and was no longer her's had it existed. Nor did she realize that to take away at once from the hospital most of its executive force might be some inconvenience to those remaining to care or be cared for.

Later in her history she developed the delusions on account of which I cite the case. Early in the morning, and lasting for a day or longer, she would suffer the greatest distress, believing and saying she had seen her husband, long since dead, lying before her, stupified with chloroform, administered by her nurses to him for unlawful purposes,

and she knew the nurses had hidden him away in some dark place, and her pleas to whoever would listen to her, to go and find and release him, were heartrending. These ideas which took various shapes would gradually fade away, to be renewed at a later date in much the same sequence.

Later in the case, although she was "old and well-stricken in years," and without the promise or opportunities offered Sarah, she asserted that she had given birth to a beautiful girl, and for sometime fancied this had been spirited away, and begged me and others to find and return it to her, and in this connection she after a time asserted that she saw her nurse hold it up by the feet until it died from congestion of the brain; which made her terribly unhappy, as much so at the moment as though it were true.

These ideas in regard to her husband being alive and being under the power of her enemies, and the birth and death of her child, etc., have the force to her of facts which she has seen or experienced, and of which at first she has not a shadow of doubt. They are things which she remembers as much as she would any other facts or events which had a real existence. There is no disturbance of the special senses at work here apparently, for she hears no voices and sees no unusual sights in her waking moments, indeed, she has in some directions a quick perception and an excellent memory of persons and events connected with her former life. It does not seem to be a fault of perception or memory, but a defect in her ability to judge of the true relation of things; to discriminate between the real and the visionary, in fact, to realize that a dream is but a dream, and to throw it aside.

There is a gradual and steady fading out of the impression produced by the dreams, the effect upon her being less marked from day to day, until perhaps it is rekindled in all its original force, without doubt, by a repetition or variation of the original dream.

I should say that she has never confessed to any such

dreams to my knowledge, and I base my belief on an observation of her habits of mind, and 'the want of judgment shown for a long time in her conduct, her easy belief that she had been robbed of things she did not possess, and her great distress, early in the morning, over the great outrages she had herself seen recently. My deductions may be quite without foundation, and I simply offer them to the friendly consideration of the reader.

FOOLS AND THEIR FOLLY.

By DR. HENRY HOWARD, of Montreal, Canada,

Author of the "Philosophy of Insanity, Crime, Responsibility," etc., etc.

"What folly 'tis to hazard life for ill."—SHAKESPEARE.

"The world contains one thousand, four hundred and twenty-four millions of inhabitants—mostly fools."—CARLYLE.

WHEN Carlyle made the foregoing statement, what did he mean? Whom did he mean to classify as fools, of the world's inhabitants, when he said, "mostly fools?"

He must have had in his mind thousands upon thousands of persons which the laws of no nations recognize as fools. It appears to me that in the term "mostly fools," he must have included the whole criminal class of society. If that were the case, he certainly could not have been very far wrong in his calculation. Who is the criminal? The immoral man; immoral, because he lives in the breach of nature's laws through the imperfections of his *materia cogitans*, whether that imperfection be due to teratological or pathological defect.

Every man's conduct is the outcome of the functions of his *materia cogitans*. If its functions be normal, the man's conduct will be normal, and he will consequently be a moral man, living in obedience to nature's laws, and delighting in his knowledge of them. If its functions are abnormal, his conduct will be abnormal, he will be a fool and consequently an immoral criminal.

The *materia cogitans*, like unto all other organic structures, has its peculiar functions, which functions are, what the structure makes them. If the structure be normal, the functions will be normal, and conduct normal. If the structure be abnormal, the functions will be abnormal and conduct abnormal. We cannot speak of functional changes without implying structural changes.

Now, normal structure, and consequent normal functions of the *materia cogitans*, not only produces normal thought, as one of its forces, functions, or phenomenon, but it produces the phenomenon, normal muscular action which constitutes conduct. Every act a man does is by his muscular motion; therefore, motion constitutes his conduct. A paralyzed muscle is a badly conducted muscle, because it does not, nor cannot, obey the will, another function of the *materia cogitans*; for the simple reason that a part of the *materia cogitans* has, because of pathological defect, lost its motor function in the paralyzed muscle. We know a moral man by observing his conduct, and finding it in accord with his environment, and we know his conduct is the outcome or force or phenomenon of his *materia cogitans*. We know an immoral criminal fool by his conduct, which is not in accord with his environment, and we also know that his bad conduct is the outcome, or force, or phenomenon, of his *materia cogitans*. In the one case there is normal structure and function of the *materia cogitans*; in the other case, there is abnormal structure and function of the *materia cogitans*. Morality and intelligence is the product of one, immorality and folly the product of the other. This is a physical law of all matter. All phenomenon, function, or force of matter, depends upon the structure of the matter, both chemical and mechanical. When, therefore, we find a man of bad conduct, a thief, a liar, a blasphemer, a drunkard, an evil speaker and slanderer, a man who acts unjustly that he may gain the applause of others, we may place such a man amongst the class of criminal fools. Although he escaped prison, and an insane asylum, such a man is a fool because of the abnormal functions of his abnormal *materia cogitans*.

We cannot help recognizing that all criminals are fools, whether it be due to teratological or pathological defect in his *materia cogitans*. When from the former cause, he is termed a fool or imbecile; when from the latter, he is termed a maniac. The fool or imbecile has

never been anything else but a fool or imbecile, because of his teratological defect, and his degree of imbecility will depend upon the deformity or teratological defect of his *materia cogitans*. If the imbecile be young, his *materia cogitans* may improve by growth and development, so that he may cease to be a fool and grow up to be a moral man. But if the age of development be past and he be an immoral criminal fool, an immoral criminal fool he will remain to the end of the chapter, and for the sake of society the best thing to do with such a one is, when he has shown himself a criminal, to lock him up for life. Sending such men to prison for a specified time is worse than useless. They are greater fools, and consequently, greater criminals, when they leave the prison than when they were admitted. These are the class that are a curse to the human race, and they are to be found in all the different grades of society.

It is quite different with the insane or maniacs; they have lost something which they possessed—their intelligence—lost it by pathological defect in their *materia cogitans*. They should be treated scientifically, and with the greatest care, the object being to restore the abnormal organ to a normal state, after which there will be normal function and normal conduct.

Strange, how difficult it is to convince legislatures, judges and lawyers of these physical truths, and how amusing it is to see those gentlemen assuming airs of importance and authority, and looking down with an air of pity and scorn on a medical witness who is trying to cram their brains with some physical truths. I don't mean these remarks for all legislatures, judges and lawyers; but conscience, how applicable they are to the greater number. Let any ordinary man, possessing that very uncommon thing, common sense, attend as a disinterested observer, the sittings of our courts of law for one or two terms, and during his evenings of that period, read the newspaper reports of the proceedings that he has been listening to, and if that man don't find food for laughter,

as spicy as the jokes of Mark Twain, then he don't know the heavenly blessing of laughter—he cannot appreciate a joke.

Next to a penitentiary, the best place to learn from observation what is a fool, is a criminal law court, but observations must not be confined to the accused on trial. If he be a criminal, he is not the only fool present. There are many persons under the impression that because a man is what they term smart, clever, a good speaker, that he is necessarily an intelligent man. Never was there a greater mistake. An immoral criminal fool, may be, and very generally is, smart, clever; and, indeed, it is necessary to be such to be a successful criminal; particularly bank robbers, trust breakers and the like. But all that does not give proof of intelligence, no more than does the memory of words. An intelligent man must necessarily be a moral man, indeed, the terms morality and intelligence are synonymous. Morality and intelligence are functions of the higher nerve centers in the cortical substance of the cerebrum. These centers are cells whose functions are to receive the forces carried to them from without, by means of the afferent nerves, and when received, to adjust these forces, store them up for use, till required; then by their emissive functions discharge these forces to the muscles, by means of efferent or so-called moter nerves, thus causing muscular action or conduct. These higher intellectual nerve centers possess not only the functions of receiving forces, adjusting forces, storing forces, emitting forces, but they have also the functions of sensation and inhibition, and in virtue of all these functions, these centers are the centers of intelligence and conduct, and all these functions will be good or bad as the structure of the *materia cogitans* be normal or abnormal.

It is an established physical fact that the higher the nerve centers the lower are they organized, and the lower the nerve centers the higher are they organized. This explains how rapidly a man changes from sanity to

insanity, from being an intelligent man to be a fool. It is a very slight cause that will injure the structure of the cells constituting the higher nerve centers, and consequently disarrange their functions, because of their low organization. Unfortunately, too, many know the effects of a glass of brandy, of a dose of opium, or a whiff of ether or chloroform upon these higher nerve centers; fortunately the lower centers, because higher organized, are not so sensitive to these drugs, or there would be more deaths from inebriety and consequently fewer cases of fools and maniacs.

Why are the higher centers the lowest organized? For two reasons. First, they are not actually necessary for life. Second, they are chiefly formed and altogether developed after birth; they are not necessary to the child before birth. Those centers most necessary for existence are the first developed and the higher organized. The higher centers being the last evolved and developed, accounts for the fact, that wisdom only comes with age, and being of so low an organization, accounts for the other physical fact that, in the natural order of things they are the first to decay, consequently it so frequently occurs in old age, that intelligence declines, while yet the vegetative organs are healthy and vigorous, when the truth of the old adage is established, "once a man and twice a child." And who would wish to be a troublesome, whining child, the second time; better the end of evolution.

What a very short time has nature given to man to work intelligently and with judgment, say from the time the higher nerve centers are developed about the age of twenty-five, till they begin to decay. A short time for a man's conduct to be governed by the functions of his intellectual moral organs.

Taking the centers from above downwards, we have next in order the instinctive, the automatic, and the reflex.

Now, the lower the intellectual function, such as it is in infancy and childhood, the higher do we find the instinctive, the automatic, and reflex functions, that is all

other things being equal. We see in infancy and childhood how much more active these functions are than in manhood; and we find that as the intellectual functions increase, that the lower functions decrease.

A child is solely guided by the functions, instinctive, automatic, and reflex, while the intellectual man is governed by his intellectual centers; consequently, his other higher centers, for want of use, to a very great degree, lose their functions. But let this man from pathological defect in his *materia cogitans* lose the function of intelligence and become insane, from the loss of equilibrium his mental forces, such for example as is observed in a drunken man, and immediately he is governed by the functions of his instinctive, automatic, and reflex centers.

The drunken man who is, intellectually speaking, a fool will escape such extraordinary dangers, have such hairbreadths escape of his life, protected by his lower centers, particularly the functions of his instinctive centers, that it appears to the ignorant and superstitious to be miraculous; giving origin to the saying, that there is a special providence to watch over, and care for, the drunken man, for that matter, to watch over all fools.

From closely observing the foregoing physical laws which governs our organisms, particularly our higher nerve centers, and the nerve circulation of molecular force, we can understand that an intellectual man must necessarily be a moral man, and that an immoral criminal is a fool; a fool because wanting in intelligence, wanting in inhibitory nerve force, his conduct is the outcome of the functions of his instinctive, automatic reflex, and emotional nerve centers; and having these centers and their functions, there is no reason why such a fool should not be a cunning knave, have the gift of the gab, and be what is understood as a smart business man, that can dupe and get money even out of intelligent men. Thousands of such fools and dishonorable men are to be found in every city, who, because of their cunning, never find their way into prison. They are morally and intellectually

fools, while they are full of instinctive cunning, selfish to an extreme, false to their nearest and best friends.

The lower nerve centers in man and in the whole animal kingdom are the first evolved, and necessarily the highest organized, and all other things being equal, they are the last to decay; disintegration in them generally means death, the end of evolution.

The higher centers are the last evolved and the lowest organism, consequently the first to decay; but disintegration in them does not, by any means, mean death, for we frequently find the maniacal fool live to a very great age. I have now under observation for the last twenty-four years, dements who were said to be dements for years before I saw them. Some of them are now over seventy years old, and judging them by their present appearance, they are likely to live yet for many years. Normal disintegration in the higher nerve centers is followed rapidly by reintegration, if this were not the case, not only would the inhabitants of the world be as Carlyle said, "mostly fools," but all would be fools. The insane or maniacal fools, however, are confined to those where from any somatic cause whatever, there be abnormal disintegration of the higher nerve centers not followed by reintegration. And the scientific treatment of the insane should be with the object of re-establishing the function reintegration, that the pathological organs, or organ, may be recuperated, and its normal functions re-established and sanity consequently be restored.

When we consider the nervous system with regard to mind, as a phenomenon or force of the *materia cogitans*, we find it is as much a circulating system as is the vascular system. The latter mechanism circulates the blood into every part of the animal economy by means of that great pump, the heart. And the nerves circulate vital or molecular force into every part of the animal economy, by means of that great ganglion, the brain, and all the lesser ganglions. We might call the whole ganglionic system the heart of the nervous circulation, and reasoning

from analogy, we are justified in concluding that any pathological defect of the nervous system, particularly in the afferent or efferent nerves, or higher nerve centers, which defect would in any way obstruct molecular circulation, must of necessity affect mind, which is the phenomenon or force of the *materia cogitans*; this is, as in all nature's laws, physical cause for physical effect.

When there is such a large anatomical surface in such numerous nerve tubes and fibres for the circulation of molecular force, and when we consider the number of these nerves that have other functions, such as trophics and vaso-motor, because of their union with the great sympathetic system, we are not surprised that there are so many different physical causes to derange the equilibrium of mental forces, and be the cause of mania. Nor under these circumstances can we be surprised at the different degrees of mania and its various developments, and how necessary is the history of a case, and all its physical symptoms, as well as the symptom conduct, to enable us to diagnose the locality of the nerve lesion in the *materia cogitans*, and to know whether that lesion is the result of chemical or mechanical cause. It is only by attaining to this knowledge can mania be treated scientifically. Indeed, no disease, no more than mania, can be treated scientifically unless we know its somatic etiology, the cause of the effect; treatment under any other circumstances is empirical, no matter how successful the treatment may be, and no one can deny but empirical treatment is sometimes very successful, but yet it is not science.

It is astonishing how the very term science irritates the empiric, the charlatan, it acts on him as a red rag does on a bull. Such men lose their temper and actually become insulting in their remarks, and if they are men "dubbed with a little brief authority," they are sure to make the scientist feel their authority. Such are those judges who are ignorant of physical science.

I have pointed out the physical fact that the lower nerves centers are the first evolved and the highest

organized, and the higher nerve centers the last evolved and the lowest organized. That the lower centers are actually necessary for life, and the higher for intelligence. Morphology teaches us that it is the same laws that governs the evolution of all animal organisms. The lower the animal organism the fewer and more simple the nerve centers; the higher the animal organism the more numerous and more complicated the nerve centers, but the higher are the functions of these centers. An animal without any intellectual nerve centers will have the higher instinctive, automatic, and reflex centers; that is, the functions of these centers will be of a higher order than will be the same functions in an animal with high intellectual functions.

All other things being equal, a woman is not, with all due respect for the sex, as intelligent a being as a man; but a woman's instinctive functions are very much higher than man's; so much so, as to sometimes make it appear that the woman was of the higher order of intellect. A woman instinctively will know there is danger long before a man will discover it by his intelligence; but this does not justify giving a woman the *same* high education as man. There is no reason why she should not have as *high* an education, but not the *same*; the difference in their organisms and their functions both forbid it. Newspaper scribblers may write as they please about equal rights and the higher education of women, but these writers don't know that the organisms of the sex and the functions of these organisms, utterly preclude the possibility of anything of the sort as that which they propose. The stations of the man and woman are two different stations, both equally honorable, but not the same in the natural order of things; both in accord with their physical organization; both intelligent, but not the same intelligence.

A dog, who is the highest in intelligence, next to man, but still much lower than man, will instinctively recognize danger before a man will recognize it by his intelligence, and as we descend from the dog to the lower grades of

animal organisms, we find it to be a physical fact that the lower the functions of the higher organisms, the higher, comparatively speaking, are the functions of the lower centers or lower organisms. Let us take as the best physiological proof, the reproduction of species, the lower the the organism the more prolific, so that, in homely language we have, from observation, the term "ill weeds grow apace."

No very difficult thing then to understand that a man can be an immoral, and consequently, a criminal fool, without much intelligence; and yet, in virtue of the lower centers, instinct, automatism, and reflex, be what is termed a smart man of business and a clever fellow.

I have made a few remarks on the treatment of the maniac or fool from pathological defect in the *materia cogitans*. But I have said little on the treatment of the fool from teratological defect in the *materia cogitans*, because there is but little to say. The best advice I can give is to educate all youth, as far as it is possible, by observation from a good environment, whatever other education may be given, this education never should cease as long as a man lives, for a man is never too old, as a child is never too young, to learn from observation. When youth shows a low order of intellect, let him be the longer before he studies from books; the brain must be allowed to grow and develop; everything depends upon development of brain matter, and to cultivate this should be the chief object of parents, teachers and servants, and more particularly those that take charge of weak-minded children. As in the case of folly from pathological defect, the general health of the patient must be always attended to, without this there is no building up or recuperation of the *materia cogitans*. I know of no particular food that is exclusively brain food.

My object in writing this paper was another of my many efforts for the past twenty years to prove it to be a physical fact that every criminal was an immoral person, and every immoral person a fool; and that every

fool was such because of his abnormal physical organization, either teratological or pathological; consequently, that it is unscientific, immoral and illogical, to punish the criminal as a means to arrest crime, that it never has arrested crime, and never will. That the true mode of treating the criminal is to treat him as a fool; to use all and every means to make him an intelligent moral man, but if failing, then to separate him for life from the intellectual moral portion of society. A man's conduct is the proof as to whether he is intellectual and moral, or an immoral fool. No expert is necessary in the case of the criminal. A man is only to be judged by his conduct; if a man be a criminal, let him be treated as a fool, recognizing that the most dangerous of all criminals is he who bears false witness against his neighbor, more particularly if he be a newspaper slanderer.

Thus circumstances will force us to recognize the truth of Carlyle's statement, "mostly fools."

There is a folly in the present day which, were it not so dangerous, would be very laughable. I speak of the sudden interest society has, of late, been exhibiting towards lunatics and lunatic asylums. The people have got up such a howl on the continents of Europe and America about insane asylums and the management of the insane, that we might suppose that for the last century nothing had been done, by either philanthropy or science, to improve the state of the insane portion of society, when the truth is, that never in the world's history has there been so much done for the insane as there has been within the last quarter of a century, and all that has been done, has been done by the perseverance of the members of the medical profession; and now, at the instigation of the most ignorant portion of the community, the cranks of society, a howl is got up against the members of the medical profession in every part of the world. And every pressure is brought to bear upon governments to have such legislation, with regard to the insane and insane asylums, as will offer an insult to the whole medical

profession. The proposed legislation in England, in some respects, is monstrous, and in the Province of Ontario in the Dominion of Canada, the legislature coolly proposes to inflict most severe punishment upon any medical man who will give a certificate of insanity and afterwards the person turns out not to be insane. As if any man in the world could say to-day, that when the certificate of insanity was given yesterday, the person accused was not insane. This sort of immoral legislation will defeat its own object. Medical men will simply refuse to certify in any case. One would suppose that the members of the medical profession were the most criminal fools in existence, who, for the sake of a fee, would enable any man to place his sane wife in an insane asylum, or a woman to place her sane husband in an insane asylum.

As the law now stands, in the Province of Quebec, it is hardly possible that a government patient could be admitted into one of our asylums, or detained there, certainly not more than a week, without his state being known as to whether he was, or was not, insane.

All the world has heard the howl set up by the cranks and howlers in the Lynam case, the greatest piece of knavery that ever was practised on an ignorant public. Here is what the local medical journals said of this case:

With such conflicting evidence before him the learned judge declined to act without further expert testimony. He, therefore, applied to the government to appoint an alienist for this purpose, and Dr. Vallee, of the Beauport Asylum, was finally named. ——— Dr. Vallee ——— presented his report to the judge. The conclusion he has come to is, that Mrs. Lynam is not quite sound of mind, that she is not sufficiently unsound to warrant her detention in an asylum, but when liberated she must be provided with a guardian other than her husband.

This report of Dr. Vallee's has satisfied general public opinion which, very naturally, sided with a poor woman who was represented as being wrongfully imprisoned, but it does seem to us a very unsatisfactory document. We have no space to analyze it, but let any one read it, and we feel satisfied any fair-minded person will say Dr. Vallee's description is that of an insane person.

When Dr. Vallee's report was presented, the judge ordered an *assemblée de parents*, to recommend a proper person to act as guardian. This advisory body selected Sister Therese! The Court, however, rejected this suggestion, and directed that the custody of Mrs. Lynam be entrusted to

Mr. Alfred Perry, the gentleman who had interested himself in her behalf.—[*Canada Medical and Surgical Journal*, for December, 1884, page 308, Vol. XIII., No. V.

THE LYNAM CASE.—Since our last issue Dr. Vallee has made his official report, affirming Mrs. Lynam's partial insanity, and recommending her conditional release. She has been accordingly removed from the asylum by order of the Court, and consigned to the care of Mr. Alfred Perry, who has given the requisite security for her future good conduct.

Mrs. Lynam might have been discharged from the asylum long ago, trouble and expense spared, and sectional ill-feeling avoided, had the ordinary methods provided by law been adopted in her case. Dr. Perrault, the asylum physician, considered her sane from the time of her admission; had he, of his own accord, or at the suggestion of Mr. Perry or any other friend of Mrs. Lynam, officially reported her fit for discharge, Dr. Howard would have liberated her at once, provided he agreed with Dr. Perrault. If he disagreed, he would have been bound by law to transmit Dr. Perrault's opinion along with his own to the Provincial Secretary, who would then have appointed a third expert to examine the patient and decide between the other two. Dr. Vallee, in all probability, would have been the expert selected; so that a fortnight could have accomplished precisely the same result as the three long months of legal wrangle. But then it is possible that the world in general, and Montreal in particular, might never have discovered the great philanthropic qualities of its *public benefactor*, which, no doubt, would have been a *local*, perhaps, a *national* misfortune. But a still shorter and easier method was available. Had Mr. Lynam been induced to make application to Dr. Howard for his wife's conditional release, she would have been allowed out on probation for one, two or three months; if at the end of that time no good reason existed to the contrary, she would have received her unconditional discharge. We are informed that, as a matter of fact, Dr. Howard proposed this method of procedure to Mr. Perry before legal proceedings were instituted. The direct appeal to the Court was never intended for general use, but was provided for these exceptional cases only in which the simpler methods had proved ineffectual. Mr. Perry's action in ignoring government officers and ordinary methods of procedure, and resorting to cumbrous and expensive processes of the courts, was not only unnecessary, but quite unwarrantable; while it is unquestionably true that an egg may be chipped with a huge steam hammer, yet simpler methods are preferable when performing this common experiment.

Dr. Vallee's report is inaccurate, timid, hesitating, and uncertain in its tone, and upon the whole decidedly unsatisfactory; it is not such a report as we would have expected from a man of his standing, and is hardly calculated to increase his reputation as an alienist.

Dr. Perrault, the asylum physician, figures very badly in this case. In his evidence before the Court he swore that he never considered Mrs. Lynam insane. Nevertheless, upon two separate occasions, he entered her name in the book as suffering from *crotomania*; and he never considered it his duty to report her officially to Dr. Howard for discharge.

Dr. Henry Howard, the government visiting physician, has throughout

this case been subjected to constant abuse and misrepresentation, which being wholly unmerited, must have been very galling. We congratulate him upon the issue of the case; he has not only been personally exonerated, but his views have been in a large measure sustained, Mrs. Lynam being released conditionally, as he had previously suggested.—[*The Canada Medical Record*, Vol. XIII., page 65.

I have, myself, written nothing on this case, the foregoing extracts from our local medical journals are proof that I had no occasion to do so. With such defenders I had only to bide my time. This is the Canadian case upon which the legislators of our provinces are called upon to make more strict laws respecting certification of the insane. Could there be a greater proof given of folly, except that of believing, that by legislation, men and women can be made intelligent, and consequently moral, when physical science is daily giving the most positive proof, founded upon observation that cannot err, that morality and intelligence are dependent upon the structure and cultivation of man's *materia cogitans*? Most surely not. Let, however, the members of the medical profession be but true to themselves, and they will teach the public how foolish are their acts and how they abound with folly. And let us be patient, and remember that a public howl is not by any means public opinion. We have a perfect example of this in England at the present moment, there is a howl from the fools against that great and good man, the Honorable William Gladstone, because he will not consent to the unnecessary shedding of blood to gratify revenge. But there is a strong public opinion with the scientific old man, that will support and maintain him against the howlers. Physical scientists must have courage, they have good reason to be hopeful, time will work out the great problem of social evolution, when social order will be governed by intelligence and morality. Then our judicial courts will be, in the widest sense of the word, courts of equity. Then will the criminal class of society be recognized as immoral fools, and it may be found that Carlyle was more under the mark than above it, when he said "mostly fools."

SELECTIONS.

NEUROTHERAPY.

THERAPEUTIC VALUE OF MECHANICAL NERVOUS IRRITATION.—Cederschjöld has found (*Schmidt's Jahrbücher*, 1880) that compression of the nerve trunks with the finger tips is a therapeutic measure of much value. In Scrivener's cramp, bronchial asthma, certain cases of locomotor ataxia and tic douloureux, this compression has proven of much value. Compression of the brachial plexus may be produced by surrounding the arm with the fingers, in the axillary region. The sacral plexus may be affected in a similar manner by placing the patient in a semi-recumbent position, with his lower extremities drawn upward, and then pressing deeply into the pelvis. The solar plexus can be affected by pressure between the ensiform cartilage and the umbilicus. Cederschjöld found that daily irritation of the sciatic and crural nerves was of marked benefit in the fulgurant pains in locomotor ataxia. Dr. McCraith had previously called attention to this means of treatment, and it is one capable of much extension in the treatment of many nervous affections; but it is an open question whether some of the benefits of massage do not depend on the same principle, as there appears to be little doubt that some of the itinerant quacks who practice "rubbing" have at times markedly benefited certain cases of locomotor ataxia. Cederschjöld has used it in certain cases of club foot, with advantage, by strongly irritating the nerve supplying the weakened muscle.—*Therapeutic Gazette*.

ELECTRICITY IN MENTAL DISEASE.—Dr. A. DeWatteville's conclusions (*Journal of Mental Science*): First—It promotes equilibrium of cerebral innervation by acting directly on the nutrition of those centers which are deficient, functionally or organically, through molecular, vasomotor or other influences, by direct galvanization of the head and neck. Second—It may be used to rouse up the peripheral and spinal innervation, and to indirectly restore their necessary equilibrium by supplying a deficiency in the different influxes upon which it partly

depends, by galvanization of the spine and general faradization. Third—When the cerebral troubles are connected with some disturbance of the abdominal or pelvic viscera (visceral paræsthesiæ, torpidity, and the like) to correct or mitigate the latter by the application of either current; or, better still, by galvano-faradization. The value of electricity in visceral neuroses is very great, though hitherto unrecognized. [The editor of the *THE ALIENIST AND NEUROLOGIST* has often so used it.] Fourth—To relieve certain symptoms as they arise according to the rules laid down in the usual treatises. Faradization is a good tonic and excitant of general nutrition. In some cases, again, appropriate electrization acts as a promoter of sleep.

CHLORIDE OF AMMONIA is regarded by some as the most efficient remedy in sclerosis of the connective tissue, even of the neuralgias, and they claim, if it is used as freely as the iodide and bromide of potash have been in other disorders, its good effects will become manifest. Some enthusiasts say it is not only in cirrhosis of the liver and fibroid phthisis, but in all cirrhotic affections of the connective tissue of all the viscera, including those of the brain and spinal cord, to say nothing about strictures of the urethra and other parts. In chronic bronchitis it has obtained a reputation, not only when the sputa is thick and tough, but also when the connective tissue is swollen, thickened, and hardened. It relieves jaundice from occlusion of the biliary ducts by thickened mucus, and the neuralgias which arise from congestion, inflammation, and thickening of the nerve-sheets. However all this may be, when rubbed on warts three or four times a day it removes them rapidly. Missisquoi water was once recommended for cancer, and lastly for mosquito bites. It is to be hoped that the muriate of ammonia will maintain its almost well-earned reputation against cirrhotic and sclerotic affections.—*N. Y. Med. Rec.*

STRETCHING THE FACIAL NERVE. — M. Bernhardt "Contribution to the Question of Success of Stretching the Facial Nerve for Facial Spasm" (*Arch. f. Psych. etc.*, xv., p. 777): A tailor, age 24, had facial spasm on the right side for four and a half years. After all other remedies had failed, stretching was resorted to. On examination three weeks after the operation, a right-sided facial paralysis of all the branches of the nerve with

degenerative reaction was found. As soon as power of motion returned, the spasms also made their reappearance. Of the seventeen cases known in the literature of stretching the facialis for the same affection, a permanent cure was effected once, the result remained unknown in two cases; amelioration, four; no success, ten times. Consequently stretching the facialis for *tic convulsif* is only of temporary benefit.

ATROPINE IN EPILEPSY.—Dr. David advises the treatment of epilepsy by the simultaneous employment of atropine and the bromides of potassium and ammonium. For a period of six months, twenty grains of the bromide of ammonium, thrice daily. At the same time the patient is instructed to take a granule of one milligramme of sulphate of atropine morning and evening. At the end of six months the following pills are prescribed:—

Valerianate of zinc	-	-	-	4 centigr.
Extract of belladonna	-	-	-	6 milligr.
Arsenious acid	-	-	-	2 milligr.
Extract of gentian	-	-	-	q. s.

Two of these pills are taken daily during twelve months. Should the faintest symptoms of threatened occurrence of epilepsy appear, the treatment must be kept up for yet another twelve months.—*Lyon Medical Journal*.

TREATMENT OF INTERMITTENT FEVER BY THE INTERMITTENT CURRENT.—A. Ch. Grigorjew and A. G. Musikantow (*Russkaja Medicina*, 1884, Nos. 29 and 30), treated obstinate cases of intermittent fever of quotidian and tertian type by faradization of the spleen in a horizontal and vertical direction, seven and a half minutes each. They obtained out of twenty-six cases eight cures without resorting to any other medication. Twenty other cases were treated, the patients taking the electrodes in their hands. Seven of them got well without other treatment. In those cases where the spleen was locally faradized, a permanent diminution of the size of that organ was observable, even in those cases where no cure was effected.

BILATERAL BLEPHAROSPASM AND TIC CONVULSIF.—Benedikt (Vienna) lately cured an obstinate case of this madaly of two years' standing by static electricity, after all other means including faradic and galvanic electricity had failed. The first application proved effective, and

after the third the trouble had entirely disappeared. The case was complicated by a severe clonico-tonic spasm of the masseter muscles necessitating the inserting of pieces of india rubber between the teeth.

EFFECT OF OZONIZED AIR ON THE BRAIN.—E. Binz (*Die Wirkung Ozonisirter Luft auf das Gehirn—Berl. Klin. Wochsch.*, 1884, p. 634), thinks that the inhaling of ozonized air continued for weeks has a favorable effect upon hyperexcitable states of the brain and the spinal marrow. He bases his opinion on experiments performed on animals.

ATROPINE IN MANIA.—Dr. J. R. Gasquet (*London Practitioner*) finds atropine useful in cases which had been previously benefited by hyoscyamine. He recommends the drug on account of its comparative safety and cheapness.

NEUROPATHOLOGY.

THOMSEN'S DISEASE.—From *La Gaceta de Sanidad Militar*, a translation is made by Dr. J. Workman, of Toronto, for *The Canada Lancet*, November, 1884, in which it is stated that this is a muscular affection, which has been brought into notice by several German physicians and one or two French within the last few years. It has taken its name from the gentleman who, having himself been the subject of it, in common with a large number of his family stock, throughout five generations, was the first to treat of it with clearness and precision. No less than thirty-five members of the Thomsen kin were known to have been affected with the disorder. Hereditary transmission would, therefore, seem to underlie this morbid form, and it is by no means improbable that it has not been exclusively confined to Germany and France. The translator believes he has seen at least one distinctly marked case in Canada within the last two years.

Longuet details the disease of Thomsen. Leyden saw a discharged soldier who was unable to open his fist when he had shut it. When reading he was unable to follow out the lines. The movements of his tongue were impeded; he could not dance or run. In the same year 1876, Thomsen and Seeligmuller published the first two memoirs on the subject, which were clear and precise. Thomsen, who furnished the first description of it, has given origin to the name by which it is commonly

designated in Germany. All presented some form or other of neurotic character. Of thirteen of his mother's children, seven were affected with it. His own children also were affected, though in a mitigated form.

The case recorded by Seeligmuller was that of a recruit, who was a desperation to his drill instructors, because of the slowness and sluggishness of his motions, in spite of his own earnest desire, in the execution of the orders given him. At a later date, Peters, a surgeon-major, published his observations of a soldier, twenty years old, who was affected similarly. At the command, "march," he remained immovable, as if rooted to the ground; afterwards, having moved his arms and legs disordinately, he succeeded in starting, but he vacillated for ten or twelve paces before he could attain free movement. He was absolutely unable to run, and if he persisted in the attempt, he fell; his tongue and the maxillary muscles shared in the impotency; he could not raise his arms above the horizontal direction.

Westphal presented to the Medical Society of Berlin two patients, one of whom was a student of medicine and a nephew of Thomsen; he had been affected from his infancy.

The *symptoms* are always the same. The functional anomaly may be presented in any of the muscles of the body. One of Westphal's cases showed that after sneezing, the patient could not again open his eyes without great effort, and when eating he could not always shut his mouth when he desired. The subjects of the affection have an athletic appearance, but their muscular force is only moderate. Westphal thinks there is a special congenital muscular perversion, coupled with an exaggerated muscular development.

Another recruit recently attracted the attention of Schonfield. This soldier was sent to hospital because, in his exercise, he suddenly fell to the ground, without any apparent cause. After a rest of ten minutes it was impossible for him to resume the march, at the word of command. He moved with great difficulty, and tottered and fell, rising again only with much difficulty. He had to proceed ten or twelve paces before he could move freely. When he sat down for any time, he could hardly rise again; the torpor, at such times, invaded the upper limbs, as the result of violent exercise. The speech was slow and drawling.

Mœbius published in *Schmidt's Jahrbücher* a very complete analytic review, having personally observed a young student of theology, who was a military volunteer, sent in by Surgeon-Major Sane, who appeared to regard the case as a mimic form of the affection. This youth, after severe fatigue, suddenly became subject to cramps in the calves of his legs, and a stiffness of his limbs which left him powerless for many days. His father presented the same defects, which were exasperated by the fatigues of military service. After a march all his movements continued difficult for one or two days. Sometimes the loins were invaded, and after musket exercise, his arms, previously free from the trouble, became affected. The contracture is accompanied by a sensation of tumescence in the muscles attacked; but at other times by a sort of trepidation, like that from faradization; if the leg be extended, the whole limb enters into contracture, and remains for a time unable to bend.

A youth of twenty-two, observed by Berger, presented in his exercise a torpor and rigidity which distracted his drill instructors.

The French productions on this subject consist merely of the memoir by Ballet and Maré, published under the inspection of Charcot, and supplemented by a recent article of Maré's, who has given the following details of a case under his own observance: The subject, from early age, found that he had special difficulty in making any movement; when he was in class and was ordered to retire, he could not rise. When called into the army, he exhibited, under examination by the council of revision, the infirmity under which he labored, but the military surgeons did not believe in it; he was however set aside for two years, as of feeble constitution, at the close of which he was admitted. When he went to exercise, it was impossible for him to keep step with his comrades, and he had the like difficulty in managing his arms, as, in attempting the motions, he was seized with his contractures. The surgeon of his regiment declined to admit him as a patient, and he ordered him to the gymnasium to *soften him down*; but in these exercises also he was attacked with the cramps, and when, for example, he went to mount the wooden horse, he was seized in the moment of the effort with muscular contracture, and he fell violently against the horse. There is no painful feeling in the muscular contraction.

Does this rare and curious infirmity consist in a lesion of the medulla, situate perhaps in the lateral cords, or is it a simple functional anomaly of the medullary apparatus? Should the affection be localized in the periphery of the nervous system, or in the muscles? All of these have been hypotheses advanced by different authors, but none of them appears satisfactory. It is well that we should know that a form of nervous disease exists, which consists in *initial transitory muscular spasm, probably hereditary, incurable and independent of any appreciable lesion of the nervous or muscular systems.*

PROGRESSIVE SPINAL AMYOTROPHIES.—O. Kahler (*Zeitsch. f. Heilk. Bd. V. Prague, 1884—Ueber die progressiven Spinalen Amyotrophien*), tries to show that the three forms of progressive spinal amyotrophies, progressive muscular atrophy, progressive bulbar atrophy, and amyotrophic lateral sclerosis are in reality not independent species of disease, but that they depend upon the same degenerative process, varying only in localization, extent, intensity and course. Of the whole number of well-observed and described cases twenty-four show a combined degeneration of the white and the gray substances; twelve show a degeneration confined to the anterior gray columns and the corresponding parts of the floor of the rhomboid fossa. The first category may be sub-divided into four groups according to the greater or less prevalence of spastic symptoms: 1. Cases with predominant spastic symptoms. 2. Cases with well-marked spastic symptoms corresponding to Charcot's amyotrophic lateral sclerosis; in this group paralysis precedes atrophy or, at all events, appears synchronously with it. There is an equal distribution of muscular atrophy over the extremities affected. 3. Cases characterized by well-marked paralysis, but with slight spastic phenomena (increased tendon reflexes), muscular atrophy co-existing. 4. Cases without spastic symptoms. Leyden's cases of progressive amyotrophic bulbar paralysis belong to this group. In the second category there is considerable difference between slowly and rapidly developing cases. In the former the symptoms commence in the extremities, and after a lapse of a long time bulbar symptoms supervene; sometimes they fail entirely to make their appearance. In those cases that take a rapid course there are the same clinical symptoms as are met with in the fourth group of the first category, *i. e.*, paralysis,

bulbar symptoms and rapid fatal termination. Between the categories, as well as between the several groups, there exist transition forms. The same morbid process characterizes them all. The slower the degenerative process takes place, the less we succeed in demonstrating paralysis besides atrophy; in affirmed chronicity of the degeneration the clinical symptoms of pure and simple atrophy result.

CONTRIBUTION TO THE DOCTRINE OF SPINAL ATAXY.—W. Erb (*Neurolog. Centrabl.*, 1885, No. 2), remarks that the theory of locomotor ataxia is still the subject of animated discussion. There are three views current among neurologists. Some hold that ataxy depends on disturbances of the sensibility (sensory ataxy); others attribute it to a disturbance of centrifugal "co-ordinating" tracts (motor ataxy), and a third party believe it to be due to a lesion of supposed tracts between sensory and motor apparatus, serving to transmit the reflexes and to regulate the movements. Erb discards the latter theory. As regards the first, he admits that the degree of ataxy is certainly influenced by disturbances of sensibility (sensory control), but the sensory theory becomes untenable, if it can be shown that cases occur in which: 1, Spinal sensory disturbance of a high degree exists without any ataxy. 2, If clear spinal ataxy exists without any demonstrable sensory disturbance. Erb describes a case of the second class, spinal ataxy without disturbance of sensibility. The case is one of ataxy without tabes. The patient is fifty-two years old. No syphilis or alcoholism. Debility and instability in the lower extremities since three years. No diplopia, weakness of bladder, vertigo, vomiting, occipital pain or thoracic constriction. There is marked ataxy. Sensibility of skin and muscles normal. Cutaneous and tendon reflexes normal. No cerebral symptoms. It is difficult to locate the lesion, but it is evidently a case of spinal ataxy without simultaneous sensory disturbance. The conclusive proof of the independence of ataxy of sensory disturbance would be the demonstration of a case of spinal anæsthesia without ataxy.

THE PATHOLOGY OF CHEYNE-STOKES BREATHING.—Some histological alterations in the bulb and pneumo-gastric nerves, to which changes he attributes the phenomena of Cheyne-Stokes respiration, have been recently discovered by Tizzoni (*Lancet*, January 31, 1885). This mode of respiratory rhythm consists in the presence of a

prolonged pause followed by respiratory movements, at first slow and superficial, but gradually rising in frequency and increasing in depth, again slowly to decrease. So much misunderstanding has arisen on the subject of what is and what is not meant by this-named mode of respiratory rhythm that Tizzoni has done well to state precisely what it is that he meant. In one of his cases there was organic heart disease, and the respiratory phenomena lasted forty days. At the autopsy chronic inflammatory changes were found ascending the vagi, with blood, extravasation into the lymphatic spaces of the perineurium and endoneurium. On the left side only the peripheral portion of the nerve was affected, while the right nerve was altered along the whole of its course, even to its origin. In the bulb the changes existed in the form of small foci, and were also more marked on the right side. The point where the alterations were most prominent was beneath the ependyma over the longitudinal furrow of the calamus scriptorius. In a second case, which was one of uræmia, the phenomena were observed for several days. The vagi were normal, but the superior half of the medulla oblongata presented lesions similar to those just described, though less pronounced and symmetrical.—*N. Y. Med. Rec.*

PROGRESSIVE MUSCULAR ATROPHY.—In a recent discussion before the *K. K. Gesellschaft der Aerzte in Wien*, November 14, 1884, Benedikt, opposing the views of Nothnagel on progressive muscular atrophy, vindicated the anatomical discovery that the affection mentioned was of spinal origin to Lockhart-Clarke and Rokitansky. It was the former who first pointed out the "granular disintegration" of the gray substance of the spinal marrow as a constantly recurring pathological lesion. Hence it is a mistake to give the credit of the discovery of the spinal nature of progressive muscular atrophy to the French school [Aran]. The French established, however, the constant atrophic condition of the large cells of the anterior cornua. And even this assertion has of late become doubtful, because there are certain grave reasons speaking against the doctrine that progressive amyotrophy is exclusively the result of pathological changes in these regions. He claims that the specimens of the "fashionable anatomists" who over-harden and maltreat their material by manipulation during the staining process, are far inferior to those of Lockhart-Clarke. (?)

COCA.—Sigm. Freud (*Centralbl. f. d. Ges. Therap.*, 1884, VII. Heft—*Ueber Coca*), remarks that coca as a stimulant is more powerful and harmless than alcohol. He predicts its employment in future wars. The experiments made on Bavarian soldiers have proved very satisfactory. After the administration of the drug the fatigued men could endure further hardships. In hysteria, hypochondriasis, melancholia, stupor, etc., its therapeutical value has not yet been thoroughly established. In organic lesions and inflammation of the nervous system coca is, according to Mantegazza, not only useless, but sometimes even dangerous. In nervous affections of the stomach it is worthy of a trial. For the suppression of the alcohol and morphine habits the author has found the drug safe and effective.

CHRONIC EPILEPSY AFTER SCARLET FEVER.—Wildermuth (*Wuerttemb. Medic. Corresp. Bl.*, 1884, 35, 36—*Ueber das Auftreten Chronisch Epileptischer Zustände nach Scharlach*): On the appearance of chronic epileptic conditions after scarlet fever), gives the history and course of twelve cases of chronic epilepsy after severe attacks of scarlet fever. The trouble usually commenced as *petit mal* and developed gradually into typical convulsive attacks. In two cases that came on the dissecting table, meningitis of the convexity and a moderate hydrocephalus chronicus were found. About six of the cases were probably dependent on these morbid conditions. In the others, various lesions of the brain produced the epilepsy.

CLINICAL NEUROLOGY.

A CASE OF STATIC REFLEX SPASM.—Dr. A. Erlenmeyer (*Centralbl. f. Nervenheilk.*, 1885, Nos. 1 and 2—*Ein Fall von statischem Reflex Krampf*): By static reflex spasms the author understands such as are produced by locomotor movements of the body, especially the lower extremities. They have nothing in common with vertiginous movements or sensations, with disturbances of consciousness and impulsive actions of the insane, nor must they be confounded with professional cramps which are always due to overexertion of certain muscles and originate in a reflex manner, which is not the case in static reflex spasms. Their origin is more of a cerebral nature; an hereditary disposition to nervous disorders or

general anæmia is necessary for their production. Pure forms of this disorder are comparatively rare.

Erlenmeyer gives as an example the case of a man of 28 who, after a close application of eight months to the study of law, preparatory to an examination, suddenly fainted in the street. Slight motor and sensory disturbances in the left leg were experienced for some time afterward, but finally disappeared. Two months after this occurrence, while taking a walk, the patient suddenly sank in his left knee without experiencing any pain. This happened from that time on with increased frequency and intensity; patient always regained quickly control over his limbs and could raise himself. He never fell. Soon the right leg participated, but never to such a degree as the left one. As a third aggravation a spasmodic hopping was added, spasmodic, because patient could not prevent it; as soon as he had sunk in both knees, the whole body was, simultaneously with both feet, thrown upward. There were one or more complete, regular jumps, the feet leaving the ground and the patient being incapable of preventing or suppressing them. Properly speaking it was a jumping on the spot, but by the fact that the body in the forward movement was surprised by the attack, and by a balancing, bending forward of the trunk, a jumping forward ensued. In the beginning the hopping was done in the half-extended posture, though bent in at the knees. Gradually, however, the sinking in the knees increased to such an extent that the patient assumed the squatting posture resting the thighs on the calves. At this period of the disease the patient, when walking without support, would sink in his knees after every fourth or fifth step, make, in the squatting posture, one, two, or three jumps forward, and would then raise himself with the greatest effort to the erect posture, only to sink again and be propelled by several jumps. These disturbances of motion were never attended with pain. The patellar tendon reflexes are enormously increased. A slight tap with the finger on the left lig. patellæ—the left leg being crossed on the right one—evokes a total and rapid elevation of the leg, followed by a twitching and a concussion of the whole body. The reflexes produced from the right lig. patellæ are not so intense. After six or eight taps on the patellar tendon patient gets very nervous and begins to cry. No foot clonus; no stiffness in the knees or passive movements. The sinking takes always place first in the

left knee; walking on the carpet does not produce it to such a degree as on uneven or rough ground. The hopping takes always place with the feet flat on the ground. Never is there an elevation of the heel. Artificially the sinking can be produced by striking the tendons of the biceps, the semi-membranosus or semi-tendinosus which are also painful on pressure. The spasms never arise spontaneously, but always after an irritation starting from the periphery, *i. e.*, from the tendons of the muscles. The affection is due to irritation of the brain transmitted to the spinal cord.

The case reported is not one of suddenly appearing loss of control over the muscles of the leg, the symptoms of sinking are not due to a relaxation or paralysis of the muscles, but are spastic in nature. It is analogous to Bamberger's "Saltatory Reflex Spasms;" but in the latter the *gastrocnemii* are concerned, which is not the case in the former.

The treatment consisted in complete abstention from mental work, not even the reading of newspapers being permitted. Patient had been wearing tight collars causing venous congestion in the cerebral vessels. Wider ones were substituted. In the beginning he took 2 drachms, afterwards 2 1-2 drachms of the bromides in carbonized water.* Daily he took a sitzbath of $72\frac{1}{2}^{\circ}$ F. afterwards of 68° F. of five minutes' duration, and a descendent galvanic current of medium strength was daily applied to the lumbar portion of the spinal column. From the third week on forcible extension of the left leg by pressing on the knee was practiced. After seven and a half weeks' treatment the patient was greatly improved.

JACKSONIAN EPILEPSY CAUSED BY A CEREBRAL TUMOR OF THE MOTOR AREA OF THE CORTEX.—Dr. Wm. Osler, University of Penn. (*American Journal of the Medical Sciences* for January) the case lasted over fourteen years, the convulsions beginning in the left hand, then extending to the leg, and finally becoming general; at first there was no loss of consciousness. For the first nine years of the illness there were six or seven months

* Erlenmeyer's (*Centralbl. f. Nervenheilk.*, 1884, No. 18), prescription for the bromides is the following: 750.0 (1½ pint) carbonized soda-salt water, 4.0 (1 drachm) bromide of potassium and bromide of sodium, each; 2.0 (¼ drachm) bromide of ammonium. To this is added one drop of liq. ammonia. Erlenmeyer claims that this combination is borne better by the stomach, does not produce acne and has a more lasting effect than the bromides taken singly.

intermissions, once for an entire year. Six years after the onset, the leg got weak and stiff. During the tenth, eleventh, twelfth and thirteenth years of the illness, the seizures were frequent. Once six weeks of unconsciousness, in which spasms were very frequent, from fifty to eighty in a day. Ten months prior to the final attacks there was freedom from convulsions. The intellectual faculties were unimpaired.

The lesion was limited to the ascending frontal convolution and to its fasciculus of white matter, scarcely involving the gray substance, which is commonly affected in cortical epilepsy. The accurate localization and the remarkable absence of tissue-changes in the immediate vicinity give the case the nature of an exact physiological experiment. With this limited lesion of the motor area there was permanent paralysis with contracture of one extremity. Another feature of interest in the case is the light it throws on the situation on the leg-centre. The fibrous mass was situated entirely within the anterior part of the paracentral lobule, limited in extent, confined chiefly to the medullary fibres of the superior frontal fasciculus, and only touched the gray matter in places. A point to be referred to is the absence of the paralysis of the leg for the first six years; for if the convulsions and monoplegia were caused by the same lesion, how explain the late onset of the latter? From the fibroid state of the tumor it might reasonably be inferred that it was originally larger and had shrunk; but the absence of puckering on the surface, and the way in which the margins merged with the contiguous parts, make it probable that the growth was always small, so small in fact that at one period of its development it may have caused sufficient irritation to induce the convulsions, and yet at the same time not involve the special fasciculi of white fibres to the extent of producing weakness of the leg, or monoplegia.

STATISTICS ON GENERAL PARALYSIS.—J. Luys (*L'Encephale*, 1884, No. 6—*Documents Statistiques pour servir a l'Etude des Conditions Pathogéniques de la Paralyse Générale*), basing his conclusions on 140 cases of general paralysis, found that the average age in men is forty-three, in women forty years. In the higher classes of society there is a decided predominance of male cases, in the lower the percentage is about even. The scarcity of progeny

in paralytics is very striking, twenty-seven (thirty-four per cent.) of eighty-one marriages proving sterile; fifty-three fertile marriages produced only eighty children, consequently only 1.5 each. The children of paralytics are generally of irregular development, bodily as well as mentally. Statistics prove that the mental state of the mother exerts the greatest influence on the male progeny. In nineteen out of twenty cases the brothers or sisters of paralytics show peculiarities in their manners, although there are many exceptions. Luys comes to the conclusion that general paralysis is not a disease coming from without, like scarlet fever or variola, but that it is the last link of a long chain of preparatory morbid conditions.

PSYCHICAL DISTURBANCES IN THE PRE-ATAXIC STAGE OF TABES OF SYPHILITIC ORIGIN.—(*L'Encéphale*, 1884 No. 6.)
 Psychical troubles sometimes mark the first stage of tabes long before ataxy sets in. They manifest themselves as a lowering of intelligence down to a complete paralysis of all psychical functions. They may disappear like the transitory motor disturbances of the preataxic stage, but they may also remain permanently. As a rule the psychical symptoms make their appearance after other phenomena have set in, although ataxia may, as yet, be wanting. Such symptoms are: Weakness of memory or complete amnesia, change of character, humor and habits, moral perversity, weakening of the whole intelligence terminating in dementia. Sometimes all the symptoms of brain syphilis are added to those of tabes; giving to the case the aspect of syphilitic pseudo-paralysis as described by Fournier.

AN EPIDEMIC OF TYPHOID FEVER IN THE INSANE ASYLUM OF OSNABRUECK, GERMANY.—Dr. Rath (*Allgm. Zeitsch. f. Psych.*, 1884, *Bd.* 41., *H.* 3), reports the cases of typhoid occurring among the insane during an epidemic as being marked by the absence of specific typhoid cerebral symptoms. None had roseola except the last one attacked, who was literally covered with it. The duration of the fever was of usual length; convalescence short. Complications happened only in two cases. The favorable influence on the mental state of the patient was remarkable. Twenty-one per cent. recovered; in forty-two per cent. there was amelioration for a short or long time; in twenty-nine per cent. there was no change, and eight per cent. died.

The forms of insanity of those who recovered are to be designated as "primary." The change for the better took place as soon as the fever broke out.

LOW TEMPERATURE IN DISEASES INVOLVING THE NERVOUS SYSTEM.—Extremely low temperatures are met with under several conditions: Drunkenness, with exposure, illustrated by the well-authenticated case of Renicke, in which recovery took place after a temperature of 76° F. In mania (particularly of old people), in melancholia, and in progressive paresis, temperatures as low as $74\frac{3}{4}^{\circ}$ F. have been recorded. In injuries and diseases of the cervical part of the cord a decided reduction has been noted, although more frequently there is an elevation of temperature. The lowest rectal temperature on record is $73\frac{2}{3}^{\circ}$ F., in a case of limited hemorrhage into the medulla. The man lived twenty-four hours after, and the temperature did not rise above $82\frac{2}{3}^{\circ}$ F.—*Canada Medical and Surgical Journal*.

THE RELATION OF HEMICRANIA TO TABES DORSALIS.—H. Oppenheim (*Die Beziehungen der Hemicranie zur Tabes Dorsalis*—*Berl. Klin. Wochsch.*, 1884, p. 603), found among eighty-five cases of tabes dorsalis twelve in which well-defined attacks of hemicrania were shown to have existed at some period of the disease. In some cases hemicrania had existed many years before the subjective symptoms of tabes made their appearance. Oppenheim thinks that this occurrence is not accidental.

CLINICAL PSYCHIATRY.

MORAL INSANITY.—Kiernan, (*Journal of Nervous and Mental Disease*, October, 1884,) says: There are included under the term moral insanity pure emotional psychoses like hypomania and hypomelancholia, cases in which insanity is shown in impulsive acts like those of the periodical or exceptional dipsomaniacs, kleptomaniacs and nymphomaniacs; besides these there are cases in which a moral sense is congenitally deficient, or fails to develop, or is destroyed in consequence of disease. Is the term moral insanity justifiable for all these differing cases? As a symptom designation it is, but as a disease designation, it would be preferable to call the first type affective insanity, for in it the emotions are involved and dominate

or pervert the intellectual faculties. It should be, however, remembered that immoral acts may result, especially in hypomania. The impulsive psychoses, also, have an element which entitles them to be considered "moral insanity," as the insanity of the individual find vent in acts whose immoral nature is recognized by him. The cases in which the moral sense is destroyed by disease or absent from birth are alone entitled to be called cases of "moral insanity;" or, more properly, "moral imbecility," as the condition is closely allied to imbecility, and these cases may, as Spitzka has pointed out, manifest one-sided talent as imbeciles.

FORENSIC PSYCHIATRY.

THE LEGAL VALUE OF THE TESTIMONY OF THE INSANE.

—The United States Supreme Court has decided that the testimony of "a lunatic or person affected with insanity is admissible as a witness if he has sufficient understanding to apprehend the obligation of an oath, and to be capable of giving a correct account of the matters which he has seen or heard with reference to the question at issue; and whether he has that understanding is a question to be determined by the court, upon examination of the party himself and any competent witness who can speak to the nature and extent of his insanity.—[*The College and Clinical Record.*

EDITORIAL.

[*The Editor is Responsible for all Unsigned Editorial Matter.*]

Insanity and Divorce is a subject of interest to both State and Church, upon the proper solution of which depends the welfare of individuals, the interests of the commonwealth and society, and the mental and physical advancement or deterioration of the human race.

To grant divorce without great discrimination, when mental aberration in either party follows a marriage, would be to annul the sacred obligations of the marriage contract, to love and cherish and to bear each the other's burden in sickness and physical and pecuniary adversity. On the other hand, to make divorce on the ground of insanity impossible under any circumstances would be, in many instances, to perpetuate a race of defectives, already deteriorating in many communities, through hereditary transmissions and repeated new acquisitions of mental disease. The problem of divorce in connection with insanity is, therefore, a grave one, having many aspects and requiring to be viewed with deliberation and decided with prudence. It is a subject, in the discussion of which, sentiment must of necessity largely enter, and from which sentiment can not, will not and ought not, to be entirely excluded, and yet the cold logic of events about us, past and present, admonishes us that society and the state must decide this question on principles of self-preservation with a view to securing to human society the survival of the fittest, otherwise there is no little danger, in highly civilized communities, of the race becoming extinguished through the gradual degeneracy of constant neuropathic accessions and transmissions. For many communities, even now, contain one recognized insane person to every four hundred reputed rational, and among the latter there still remain the unenumerated less defined shades of mental aberration—the borderland cases, the mental and moral monstrosities, the mental hemiopes, strabismics and imbeciles, who for the good of the race had better never have been born, to transmit their disease-distorted minds to a posterity likely to become, through mentally unsanitary surroundings, still more crooked in mind. The

mind, like the eye, betrays obliquities, squints and casts not the less disagreeable because the aid of the physician is not sought to remedy them.

Something must be done to lessen the growth of this horde of neuropaths, tainting the congenital fountains of normal mental life, and the remedy must come, if ever, speedily, through enlightened public opinion and just law. The church may declare marriage a sacrament and dignify it as a contract of God's, which no man can put asunder, as if God smiles upon the union of weakly neuropaths, the fruit of whose loins and wombs can only be weaklings in organization, whose fate is sure to be inevitably miserable, for in life's stern struggle for existence, to be organically defective is to be defeated.

The solution of the vexed problem is plain (or ought to be so) where, of two contracting parties to a marriage, one at the time of the union was insane. The church may pronounce them joined together by God, but the law, placing equal reliance upon the wisdom of the Almighty, but differently interpreting His will in the premises, will declare (or ought to) a compact null between an insane and a sane person, where matrimony is the consideration.

But suppose a person with only the insane diathesis contracts a marriage? Though his or her father and the most of their families may have been insane, and insanity supervenes in either of them upon some slight mental strain, insufficient to even ruffle the mind of mental organisms inherently better endowed, the law gives no remedy, nor should it, in the majority of instances as marriages are now made. But suppose the time should come, as it will, we hope, when future consequences will be considered along with present interests, and the question should be asked as to insanity in the family or damaging nervous diseases, and false answers are given and marriage takes place in consequence, will the neuropath who makes a matrimonial contract on false representations be as liable as the party who falsely represents a horse or other property in order to dispose of it? The consequences of an insane or epileptic person marrying do not fall upon the parties to the marriage contract alone. Their immediate descendants are wronged. No one has a right to bring into being offspring organically greatly defective in brain. The unborn are thus wronged for life, without power or chance of redress. The State is thus wronged in the increased proportion of the imbecile, criminal,

pauper and other defective classes thus thrown upon its care. Society is wronged in the increased aggregate of misery placed in its midst. Neither the church nor the law should sanction such unions, and if some kind of remedy existed for marked organic mental defects, such as traumatic and clearly congenital epileptic insanity for instance, disastrous marriages of this kind would be consummated with more caution by the inherently defective in brain. If a handsome blooded horse is sold on a statement of a false pedigree, the sale is null. If a man or woman, though remotely of good family but neurotically so defective that certain abnormalities of mental organism must be transmitted to offspring, enters into the marriage relation, such a marriage ought to be a nullity so far, at least, as the procreation of the race is concerned, and instead of laws being framed to punish for the prematurely induced birth of such post-natal mental abortions as are likely to result from such ill-chosen alliances, the prevention of such abnormal conceptions should be lawfully justified and encouraged. It were better that full-time children so defectively endowed should not be born, or, if born, should be born not viable.

We are aware that we tread on dangerous ground here, and that a wise and extremely cautious discrimination should be exercised when the law undertakes to interdict the procreation of offspring, such prohibition should be securely founded in the higher law of pathological defect and descent based on demonstrable and proven facts, not on conjecture or theory, and its steps should be slow and short and sure. Account would have to be taken of both factors—those tending towards race degeneracy on the one side, and those leading to race regeneracy on the other. Mistakes may be easily made, such as have been made respecting the interdiction of the marriage of blood relations, by certain States, to prevent the engendering of idiots.

To be safe and sure, law must be very deliberate and guided only by the unerring revelations, not by the theories of science—and hereditary neuropathic degeneracy is no longer a theory, but a demonstrated fact. As such it is a subject for conservative sanitary legislation, as much so as the most destructive pestilence that walketh in darkness, and a certificate of normal organic nerve and brain endowment should constitute an essential feature of the State's marriage certificate.

The Neuropathic Conditions of Cancerous Degeneration; Electricity and Neurotherapy in its Prophylaxis and Possible Cure.—Notwithstanding the confessed obscurity which attaches to the real nature of cancer, convictions have forced themselves upon the minds of careful clinical observers that it is something more than a local disease, and upon our own mind the neuropathic and psychopathic conditions of depression have much to do with its inception and progress, in addition to the locally excitant cause or causes, and that its neural factors and neurotherapy are worthy of consideration. Notwithstanding the depravity of the blood in some cases of cancer, as in many forms of neuropathic disorder, the blood shows nothing specially characteristic in cancerous degeneration.

Inquiry and observation show its frequent interchangeability with grave diseases of the nervous system in families in which the neuropathic diathesis prevails. The cancerous tendency of the constitution in some families seems vicarious with the recognized neuropathic. It is no uncommon history for one branch or one member of a family to show insanity, epilepsy or organic paralysis, and another to reveal the neuropathic taint in cancer.

It belongs to a period of life at which the tonicity of the nervous system is on the wane in many organisms; when the trophic, nutritive and assimilative functions are more liable to depression than in more vigorous periods. It is often quite rapidly developed after sudden and profound shocks to the nervous system.

Its well-known metastatic peculiarities, especially after excision, are like those in certain well-known nerve diatheses with developed local disease. Lastly, the only real benefit derivable from treatment, aside from palliating, escharotic, and cleansing local measures, comes from plans of treatment addressed to the restoration of general nerve tonicity and consequent nerve tranquility and trophic and resisting power.

Even where excision has been resorted to, the after-care and treatment reveals the fact that successful results have been due to this, rather than to the knife, barring the temporary removal of the local irritation and the consequent removal of the depressing nervous and psychical influence of the persisting and menacing sore. Surgeons call this treatment "building up the system," and this is the secret of the successful resistance and combating of cancer.

"To the knife belongs, so far, the chief triumph in the therapeutics of cancer," and its triumph has been chiefly due to the removal of the local strain and waste, without the prolonged irritation of the painful caustic processes and the neuropsychical rebound following the local relief, the hope revived, and the successful neuro-therapy instituted.

The amelioration of symptoms and somewhat retarded growth even after removal by the harsher methods and the various quack "cures" so called, result from the neural buoyancy of hope inspired. History gives us more confirmation of the neuropathic causation and diathetic relationships of cancer than the present space permits us to record. Napoleon had epilepsy, and when his fortunes fell at Waterloo and his political fate was finally sealed at St. Helena, added, perhaps, to the wearing influence of remorse over the wrong he had done Josephine, he fell a victim to cancer. The cares and worries and wounds of state, and the cancer which followed, killed Lord Bolingbroke. It is not certain whether Plunkett's boluses hastened or retarded his demise more than Pope's satire.

Our own imperious Benton succumbed to cancer while working on his "Thirty Years' View," after an unexpected political defeat, following more than thirty years of dictatorial political life. If his malady had not been cancer, it had probable been a brain trouble. The gifted and studious Dr. E. H. Clarke, of Boston, fell a victim to this disease from over nerve-strain, and had not completed his book on "Visions," when he died.

And now, though neither last nor least, we have the hero of Appomattox suffering from a shock to mind and nervous system greater than any possible political or military reverse of fortune could have made, and ending in this fatal form of tissue degeneracy. At this juncture too, the fate of the ex-president's brother Orville, he having died of paresis, a fatal form of neuropathic degeneracy, cannot be overlooked. Who can doubt, if the ex-president dies, that the blow that Ward has given him will have contributed as much to his death, as Guiteau's fatal bullet did to the death of the lamented Garfield? And who can doubt, if Grant survives, that the essential factor to his recovery, aided of course by the judicious management and skillful treatment of his physicians, has been furnished in the reactionary power of a world's sympathy and a

Nation's attested confidence, notwithstanding the unforeseen blow and cloud under which the honest and high-minded old hero had fallen?

There are potent agencies that

“Minister to mind diseased,
Raze out the written troubles of the brain.”
“And * * *
Cleanse the stuffed bosom
Of that perilous stuff
Which weighs upon the heart.”

And of these potent influences no

“Sweet oblivious antidote”

is more effective to counteract painful psychical depression and its neuropathic effects, than true sympathy and charity. These the ex-president has received “in his hour of need,” and the timely conviction of Fish vindicates the fallen hero's wounded honor.

Tobacco is a contributing cause of cancer, just as it is of amaurosis, which has many other causes, not through nicotine empoisonment specially vitiating the blood, but though the repeated assaults made upon the nervous system, more or less resisted when environments are satisfactory and invigorating, but resistless when they are greatly depressing and the cancerous diathesis is latent in the system. The same form of cancer attacks those who do not, as well as those who do, use tobacco.

The neuropathic conditions, associate and predetermining, of cancer, therefore, ought not to be overlooked and treatment should be addressed especially to them as well as to the local manifestation of disease. That the disease is not all or essentially local its ready metastasis after extirpation shows, and the general blood contamination theory has now no intelligent advocate. In the dim light that shines in the confessed darkness of this subject, electrizations and a judicious neurotherapy offer the best hope of retarding the progress, and of preventing the development of cancerous degeneration, and if we would stay it or cure it (if cure be possible) we cannot ignore them.

Two years ago a case of left mammary nodulated tumor with lancinating pain, which had been pronounced incipient cancer by good surgeons, and excision proposed, came under the writer's treatment for insomnia,

neurotrophia, morbid psychical solicitude. After some months of persistent neurotherapeutic treatment, of a reconstructive character, mainly of arsenic, the hypophosphites and lactophosphites, the patient became thoroughly re-invigorated in her nervous system, and the local pain and tumor disappeared.

In view of what has been done in other diseases by conjoint electrization and vigorous neurotherapy, the hope of mastering the cancerous diathesis and of averting the culmination in local manifestation, if not in sometimes curing it, would seem to lie in this direction, never ignoring, of course, the best method of unirritating local treatment.

The tonic power of exalting function, possessed by opium, in small doses, as well as its anodyne effects should be invoked, the internal use of arsenic, the hypophosphites, lactophosphites and bromides and the anodyne, tranquilizing tonic and reconstructive power over tissue change demonstrable in constant galvanizations employed. Spencer Wells strikes the key note when he pronounces a preference for bromide of potassium and cod liver oil, iron, iodine and arsenic. Who will try large doses of iodide of potassium as in syphilis, or arsenic as in chorea and tetanus?

"Cancer is a diathetic disease," and a specific for it *may* never be found. Let us not say: *Can never* be found, as Dr. Foster says, "for the limit of therapeutic possibility cannot be thus arbitrarily defined."

"The best hopes for the future lie in discovering the causes of the development of the dread disease and in preventing its appearance" These are apparently in the nervous system; and in sustaining, strenghtening and exalting its power.

We are nearer the cure of cancer than we were one hundred years ago, because we have a better constitutional therapy for all diseases. We may not yet eradicate a diathesis, at least in one generation, but we know much better than we used to, how to suppress and retard and prevent its active manifestations.

Cancer is probably as amenable to treatment as any other diathetic condition, if we recognize it as such and go about its treatment in the same confident and vigorous manner, and it will probably be found to be as curable as scrofula or phthisis, syphilis or organic insanity, but the hope of conquering it, lies in recognizing its neuropathic

relations and in an early and persistent, vigorous and confident, effort to improve them. The cancerous cachectic must be more or less made over like the epileptic and the hysteric, and let us not, in our search after new pastes, lose sight of the old diathesis and its neuro-pathic factors.

The law of resistance to cancerous invasion is in the conservation of energy. When Pasteur successfully inoculated birds with the bacillus anthracis, after Koch, the discoverer of the cause of splenic fever had failed, he lowered their vitality by chilling them, and some of them, when the fever was at its height, were brought up again to the point of successful resistance by exalting their temperature. The bacilli anthracis were destroyed and the animals lived. More animals too, which were inoculated with diluted virus, had the power of resistance excited, but not overwhelmed in them, and they secured immunity through a developed power of resistance (in a responsive nervous mechanism probably,) rather than through destruction of some imaginary favorable soil in the organism, as Tyndall, reviving an old doctrine, conjectures.

The New York Medico Legal Society.—At the next regular meeting of this Society, April 15th, Prof. W. H. O. Sankey, M. D., of Bath Church, Engl., will discuss the Insanity of Yseult Dudley and her previous history in England. Her name is certainly out of harmony with its surroundings, or was when she shot Rossa.

Gordon Bumpf, condemned for manslaughter, will be discussed at the same meeting by W. H. Gray, Esq., of the Michigan Bar.

Dr. C. C. Graham, died at his home, in Louisville, on Tuesday, the 3rd inst. He celebrated his one hundredth birthday on the 10th of October, 1884. He was a man of remarkable physical and mental power, he practiced his profession during the most of his lifetime, and spent his old age in scientific and literary pursuits. He possessed his mental powers in vigor to the last.

Cocaine for Meconism and Alcoholism.—Dr. Fleishel, of Vienna, finds cocaine a cure for these habits, and he likewise treats the symptoms of sudden or gradual withdrawal with it. He gives hypodermically one-fourth to half a grain of the muriate, dissolved in water, as occasion may require.

Myomania (Insanity with Associated Fear of Being Contaminated and Poisoned), Toxiphobia, Mysophobia.—The fear of contamination, or of being poisoned without adequate exciting cause, sometimes takes such firm hold of the mind, by reason of a morbid condition of the brain, as to become to the unfortunate individual a mental realization—a delusion—for it is a false judgment, more or less groundless, and changing and proceeding from a change in the mental character of the afflicted individual, with reference, at least, to the dominant and insane dread.

This form of insanity is peculiarly an *auto* or *ego* mania, and in this consists its claim to an alliance to insanity in general. The individual is deluded by his feelings and acts accordingly.

The older writers recognized it as a symptomatic expression of insanity, and called one of its most common phases toxiphobia, or the fear of being injured by poison. Hammond has described a mild symptomatic expression of this malady as mysophobia, considering it only as an exaggerated morbid dread or feeling, and Dr. Ira Russell, of Winchendon, giving preference to a term suggested by the writer, calls it by its true name, viz: *Mania Contaminations*, for the person so affected has a veritable insane fear of being contaminated, which has no foundation in fact.

This form of mental derangement displays itself in several ways somewhat different, yet not altogether dissimilar. Beginning as it most frequently does, in altered feeling, sensation, or impression, unnatural and unaccountable to the victim of the morbid change, the judgment is soon swayed to a remarkable degree, for despite all vain boasting as to the superiority of the intellect over the feelings and impulses, the latter most usually moulds the character of the mental processes and the intellect is soon a captive to the unreal impression. If the latter be groundless, the former will, though not yet touched morbidly by reason of disease invading the area of the ideational processes in the cerebral cortex, nevertheless display wrong reasoning.

Now, this feeling is always subjective, but the insanity may relate to subjective or objective contamination. The unfortunate person may be under the conviction that things without and beyond himself contaminate him, or that he has become foul within and that everything he touches is morally or physically befouled.

A number of cases of the delusion of personal physical contamination from without have come under the writer's observation, but only one case in which the individual thought he contaminated others by his touch. There are fewer of these cases than of the former, and fewer of either than of that larger class of insane who think they have become morally impure and are contaminating others by contact with them.

The idea of moral foulness is more common among the inmates of asylums for the insane than outside of them; that of having been physically contaminated is more frequently seen outside of asylums, because not so generally recognized as a kind of insanity amenable to asylum treatment. In the asylums, however, it is not uncommon to see unfortunates who feel themselves to be so foul that they

"Could accost a pensive angel
Singing to himself upon a hill in heaven,
And leave his mind as black and turbid
As a trampled pool."

So foul that they

"Would be thrust from every human door,
And durst not knock at heaven's."

These are the self-accusing religious insane. The essential nature of the disease, in both and all, is the same; the difference being only in degree.

The Mind Cure, New and Old.—We have before us an address entitled, "Trust in the Infinite," which maintains that not only moral but physical infirmities are removable by trust in the infinite; that they will and must disappear under certain states of mind.

The writer, however, ignores *means* similar to those which Christ himself used and recognized.

This is a powerful means of arousing mental dominion and imparting psychical tone, and thus of exciting the general tone of the organism in certain conditions, and revives an interest in the mind cure of all diseases which was attributed to the gods.

A recent lecture by Prof. August C. Merriam, of Columbia College, New York, delivered March 19th, at the New York Academy of Medicine, on the "Treatment of Patients in the Temples of Æsculapius," a synopsis of which we find in the *New York Medical Record* is, in this connection, interesting reading:

He gave a historical sketch of the methods of healing practiced in

those temples, especially at Athens and Epidoris, and revealed by Grecian excavations begun March 16th, 1881. The speaker pictured the deep and abiding belief which the ancients had in the anger or malice of the gods, as a *cause* of disease, and also in the marvellous and miraculous *cure* of disease by some divinity.

The beginning of the art of medicine, in all times and among all peoples, was empiricism, based on the belief that all severe sicknesses were caused by the anger of some god or demon.

The faith of the people in the power of the gods of Æsculapius to cure disease was unlimited, and was represented by the saying of Plato, who declared that "we must not suppose that Æsculapius failed through ignorance, but that he deliberately withheld his power at times for the benefit of the race."

The writings of Solon, who mentions "the laying-on-of-hands," etc., of Pythagoras, who was a physician as well as philosopher, of Plato, of Aristophanes, and of other ancient Greeks, are all flavored with the belief in the influence and power of divinities.

Galen, it seems, was nearly free from superstition, yet he refers to the partial god Æsculapius. Three hundred and twenty temples of Æsculapius were known to have existed in antiquity; those of Athens and Epidoris having been built about the end of the fifth century before Christ.

The speaker sprinkled his discourse with translations of inscriptions found upon slabs removed in recent excavations, some of which were highly amusing.

The mind-cure idea substitutes monotheism for polytheism, and credits the divinity within us with the power of expulsion of disease, while denying to any god or to the one God any influence in bringing on disease. "He healeth all diseases," think the mind-cure people, but chasteneth none with disease.

The Insecurity of Hospitals for the Insane Against Fire.—A year or so ago a city paper referred as follows to the disastrous burning of one of these institutions in a neighboring State:

The burning of the Yankton Insane Asylum was a crime in which every citizen of the Territory of Dakota was an accessory before the fact. No community should tolerate an institution for lunatics which is not absolutely fire-proof from the roof-tree down to the foundations. This country is full of asylums where even the ordinary precautions taken in a dry-goods store or a factory are shamefully neglected. Some time their day will come, and we will hear of another fiery tragedy in which everything possible was done to save the patients, and yet so many were burned to death and so many more charred bodies were found in the ruins. The time to save these lunatics is now.

Since then the "Flatbush," "Riverside," "St. Peter's," "Kankakee," and the Insane Department of the Phila-

delphia Almshouse, have added lurid force to the plea for safe buildings for the insane.

The Boston *Medical and Surgical Journal*, of February 19th, says:

Why should not Massachusetts, at least, have a law on her statute books, that no new building should be occupied as a dwelling-place for any of those in her care until a report had been made in writing to the Governor by a proper board of fire experts, that it was fire-proof and thoroughly provided with fire apparatus?

Why should not all States have such a statute?

The *Post-Dispatch* spoke timely but unheeded prophecy. How long must it be before public sentiment will tolerate the erection of none but fire-proof buildings for the insane? How long must we witness the oft recurring holocaust and pyre of these helpless ones? Can it be that there are those among the guardians of the insane so heartless as to regard it as no great calamity that these unfortunates should be extinguished by fire? Or is ignorance of the nature of insanity so profound as to still permit the belief that the most perfect possible precautions against fire are not specially required in the homes of these peculiar persons, in the face of the appalling fact?

The best asylums are now built fire-proof, as they should be, in order to give their insane inmates, many of whom are morbidly incendiary (pyromaniacal), that larger liberty demanded by humanity. But fire-proof buildings cost money and so do the many other safeguards required for asylums, that the insane may have that greatest freedom from restraint compatible with their mental welfare now generally conceded as their right. Will the press please remember this when the asylums in their vicinity ask for more money, as they ought to, for the good of their inmates?

Mr. Clark Bell, editor of the *Medico-Legal Journal*, in retiring from the Presidency of the New York Medico-Legal Society, after a second term of three years' service, was able in his address, on the 21st ultimo, to point with justifiable satisfaction to the renewed vigor and prosperity of the Society. The Society now numbers 301 active members, 84 corresponding members and 9 honorary members. Among the two latter classes will be found the names of many well known in this country in the Medico-Legal world. Mr. Clark Bell has been largely instrumental in founding the Library of the Society, in which respect immense success has already been obtained,

and there is little doubt that at no very distant date it will be a complete library as regards the special subject, the study of which is the aim and object of the Society. The *Medico-Legal Journal*, founded during his presidency, and edited under the auspices of the Society by some of its members, has already attained a success that is almost unique, and Mr. Bell may well feel proud of his share of that success.—*London Medical Times and Gazette*.

Vivisection.—The *Globe-Democrat* of this city thus sensibly concludes an editorial on this subject: "Of the merits of vivisection, scientists, as we have said, must judge; but no less is it true that the community has both a right and a duty to demand that animals which may not be ill-used by the truckman shall not be tortured without question even by the scientist. It would be rash, perhaps, to legislate flatly against vivisection; but no harm could come from defining clearly the limits to which it may be carried."

The excision of a hard glioma from the upper part of the fissure of Rolando by Mr. R. J. Godlee, is a grand clinical and physiological triumph, and although the patient has since died, his death has not been in vain. The operation was suggested by Dr. Hughes Bennett, and was followed by relief from the lancinating pains in the head, vomiting and convulsions affecting the limbs—the most annoying of the symptoms—which indicated disturbances of the hand, leg and eyelid centers.

This case proves with what accuracy diagnosis of obscure cerebral lesions, thanks to vivisection, may now be made, comments the *Canada Medical Record*. And this is truth. Had it not been for the vivisection experiments of Ferrier, Fritch, and their followers, in the study of cerebral localization, such a diagnosis would have been impossible.

Premeditation, Knowledge of Right and Wrong, and Absence of Heredity in a Presumptive Lunatic.—The following record of a recent crime bears upon its face the evidence of insanity on the part of the criminal, while at the same time the law's criteria of sanity are not lacking:

THE DEED OF A MANIAC.

GREENWICH, CONN., April 22.—Coroner Holt, of Bridgeport, began an inquest at the Selectmen's office here this morning in regard to the victims of the murders in the Johnson family yesterday. The Rev. J. G.

Johnson, a Congregational minister of Rutland, Vt., an uncle of Barclay Johnson, the young man who shot his mother and sister and killed himself, testified that there was no hereditary insanity in the family. For the last six weeks the young man had appeared somewhat peculiar. The witness could not account for insanity on the part of his nephew, except by his excessive devotion to his office duties, which caused him to write and work at night, and caused a strain on his mind. The witness produced a letter written in pencil upon note paper, which was found in a pocket of Barclay Johnson after his death. Parts of the letter were read as follows:

GREENWICH, CONN., April 21, 1885.—If I succeed in accomplishing what I think must be done, a word or two of explanation will be probably received with interest. I think I am saving my mother and sister from an unhappier fate. If there is a just and generous God these two will go to the happiness which they deserve. If there is no God, then they will simply find their rest.

At the close of the letter young Johnson wrote: "I am conscious of the enormity of what I have done and intend to do, but at the same time I have a suspicion that I have become insane. Why did not some one recognize my weakness, my great need of help, and help me while there was time, but to be fair, I suppose I should say 'why did I not help myself?'"

The intermediate parts of the letter were filled with expression of the writer's tender affections toward his father, mother and sister, mingled with self-accusations of all sorts of faults, which his friends say existed only in his imagination. The letter was written in a firm and very legible hand.

The Judicial Murder of Lunatics Advocated.

—Hammond is the only medical writer of repute whom we know of as having advocated the execution of the insane for murder. This view has often been advocated, however, by lawyers on the ground of public policy, and in a recent address by Clark Bell, late president of the New York Medico-Legal Society, before the Philadelphia Medico-Legal Society, this view was put forth as forcibly, probably, as that side of the question could be presented. The argument of public policy is the *dernier* resort of the law, and when used is a confession of something akin to logical weakness. There may be times and circumstances when policy should overrule right, but the more exceptional a Nation makes such decisions, the better for its perpetuity. The general slaughter of the insane who kill will never be sanctioned so long as charity for irresponsible weakness finds a place in the human heart. Executing the irresponsible to deter others for possible crime, and especially other lunatics, is an unique sort of vicarious vengeance, which, if it had been

suggested in his day, would hardly have commended itself to that most politic of law-makers, Lycurgus, who never permitted considerations of humanity to interfere with the slaughter of crippled innocents whose future promised to be burdensome, and at variance with Spartan public policy, because they would be dead weights in battle.

Jaborandi in Obstinate Hiccough.—Pagenstecher, (*Centrbl. f. d. gep. Therap.*), reports a case which had resisted every known remedy. The diaphragm contracted in the most violent manner twenty or thirty times a minute, and he was unable to take nourishment for three days. After receiving four grains of jaborandi leaves, in the form of a decoction, he had a profuse perspiration and the hiccough ceased.

Simaba Cedron as a Remedy for Hydrophobia.—Valliant (*Therap. Gaz.*) recommends a preparation made from the seeds of this South American tree as a remedy for hydrophobia. The bitter crystalline, active principle, dissolves in hot water to form a neutral solution. The writer says he has cured two cases after convulsion had set in.

Gaillard's Medical Journal will be continued. M. E. & E. W. Gaillard being the publishers, and an able corps of collaborators.

HOSPITAL NOTES.

WISCONSIN.—Dr. J. H. McBride, late superintendent and physician of the State Asylum for the Insane at Milwaukee, has resigned to accept the position of superintendent and physician of the New Milwaukee Sanitarium for Nervous Diseases, at Wauwatosa, Wisconsin. Dr. F. B. Scribner, late first assistant physician of the Milwaukee Asylum, has been promoted to the superintendency made vacant by Dr. McBride's resignation.

REVIEWS, BOOK NOTICES, &C.

THE BRAIN AND THE NERVES, THEIR AILMENTS AND THEIR EXHAUSTION.
By Thomas Streich Dowse M. D., F. R. C. P., Engl., Fellow of the
Medical Society of London, etc., etc.

The foundation for this little book was an article written and read by the author, for the Fellows of the London Medical Society, four years ago. After more extended observation he has expanded his essay into a book of one hundred and thirty pages. The author expresses at considerable length his regret that physicians hitherto have so generally neglected the subject of nervous exhaustion.

We in this country recall with pride that it was an American physician and a superintendent of an insane hospital, who was the first to give an intelligent and comprehensive description of the disease which we now call nervous exhaustion. This physician was Dr. E. H. Van Duesen, for many years the able superintendent of the State Insane Hospital at Kalamazoo, Michigan. In his annual report for the year 1867, he gave an interesting description of cases of nervous exhaustion, and his statements show that he had anticipated many of the ideas concerning this disorder which we are accustomed to credit to other and more recent writers.

In a brief preliminary chapter Dr. Dowse treats of the development of the nervous system and of reflex action as preliminary to the general discussion. In a chapter on "Nervous Energy and Exhaustion," he gives an interesting résumé of the physics of the nervous system, and attempts to set forth in what nervous exhaustion consists.

In a chapter on "Some of the Ordinary Symptoms of the Neurasthenia," he makes a statement which evidently embodies an idea that is a favorite one with him. He says: "That every form of nervous disease, and as I would contend, every form of disease which is not nervous begins and takes its origin in nervous exhaustion."

This is giving to the term neurasthenia a too extended application; indeed, the term loses its significance when thus spread over the wide realms of pathology. It may be conceded that in every morbid condition there is a fundamental perversion of nerve nutrition, and this may be the starting point for pathological conditions generally. Pneumonia, for example, commences with congestion, but congestion can only occur as a result of vaso-motor paralysis. But this is not nervous exhaustion in the proper meaning of the term. The meaning of the term should be restricted to that which is now commonly given it, namely: a general and chronic loss of nervous vigor. The description which Dr. Dowse gives of the symptoms of nervous exhaustion is a good one, though he omits many details. In his remarks on neuralgia, the author makes an important statement and one which cannot be too strongly urged upon the attention of physicians. He says: "Neuralgia is due to debility of the constitution in general and to exhaustion of the brain and nervous system in particular."

It is undoubtedly true that in the large majority of cases neuralgia is a local manifestation of a constitutional condition, and it should be treated as such, and they will have the best success in the treatment of neuralgia who proceed upon this principle. A "feeling of profound exhaustion unaccompanied by pain" and "heart palpitation" are mentioned as among the common symptoms of nervous debility. No one who has seen much of nervous exhaustion can have failed to note the frequency of these symptoms. A feeling of weariness coming on without the patient having made any exertion is a very common symptom, and many of them complain of feeling constantly tired. Heart palpitation is also a frequent and annoying symptom, any slight exertion or excitement being sufficient to produce it. Many who suffer from nervous exhaustion believe they have heart disease, and attribute all their symptoms to heart trouble. The author mentions nervous dyspepsia, biliousness and bladder irritability, as common accompaniments of nervous exhaustion, and though much of what he says on this subject is instructive, yet his treatment of it is so unsystematic that it is difficult to follow him in a review without appearing to have matters quite disconnected. Chapter five, "on the heredity of the nervous constitutions which are especially liable to exhaustion," is not by any means a satisfactory part of the book. The subject of heredity is a tempting one, and in treating of it one is apt to be lured into the realms of philosophy. Dr. Dowse is apparently not of a philosophic turn, and in treating of heredity it appears to us that he loses himself in the fogs of speculation.

The suggestions concerning treatment are for the most part practical, though the author does not consider the subject with sufficient detail, a fault common with authors of works on functional nervous troubles. It may be said in extenuation, however, that there is no class of diseases the treatment of which is so difficult to reduce to rule as the class of diseases under consideration. The combination of symptoms vary with every case and each one must be treated in accordance with its special needs.

Dr. Dowse's idea of the use of remedies for nervous exhaustion are certainly different from those we are accustomed to accept and put in practice in this country. On page 119 he says: "I have signally failed in procuring any good results from the salts of iron, even from the phosphites or hypophosphites." He says that *cannabis indica* has long been discarded from his list of remedies. In speaking of the bromides, he says: "I maintain that without the bromides we would be unable to treat any form of nervous disease." This is slightly dogmatic, yet the bromides are of so great value, that there is little danger of overestimating them. Phosphorus, he designates as a poison, and states that it is of use only in ordinary debility. His practice of using massage and electricity is about as we adopt in this country. He is a believer in hydropathy, but we think that "a cold water compress over the epigastrium every night" in the case of a consumptive, would hardly do for an American woman. This practice may produce good results upon the more robust English constitution, but for the weak-muscle and nervous American it would not probably work well. His remarks about travel, as a remedy for nervous exhaustion, are highly judicious. There is no more common error than the advice given

by physicians to neurasthenic patients to travel. Traveling, with few exceptions, is injurious in these cases, and those who have seen much of this class of disorders will concur in this statement. The excitement of travel and sight-seeing is a serious task even for a healthy person, and for the seriously debilitated person, easily excited and exhausted and always prone to overdo, it is, with rare exceptions, seriously harmful. J. H. M.

OBSERVATIONS ON THE CRANIA FROM THE STONE GRAVES IN TENNESSEE
By Lucien Carr. From the Eleventh Annual Report of the Peabody Museum of Archæology and Ethnology. Cambridge. 1878.

Report on the exploration of a Mound in Lee Co., Va., and the social and political position of women among the Huron-Iroquois Tribes, are three interesting and instructive monographs, from the pen of Lucien Carr, Esq., of Cambridge, for which the author has our thanks. We make room for the following valuable table and remarks, which, however, do not fully show the author's very searching and complete comments as the latter's remarks in this table occupy something like five pages of the brochure in the aboriginal Crania of Tennessee.

TABLE II.—MEAN MEASUREMENTS OF 67 CRANIA
FROM STONE GRAVES IN TENNESSEE.

		No. of Crania.	Capacity.	Length.	Breadth.	Height.	Index of Breadth.	Index of Height.	Width of Frontal.	Index of Breadth.
1	Dolichocephal.	5	² 1325	⁵ 184	⁵ 132	³ 142	.716	.775	5	.730 and under.
2	Orthocephal.	18	⁶ 1346	¹⁸ 172	¹⁶ 134	¹¹ 141	.775	.819	18	.740 @ .800
3	Brachycephal.	29	¹⁵ 1284	²⁴ 165	²⁸ 141	¹⁸ 142	.856	.865	29	.800 @ .900
4	Much Flattened.	15	⁷ 1461	¹⁵ 156	¹⁵ 152	⁸ 145	.973	.907	15	.900 and over.

"An examination of the above table will show that there are in this collection five (5) dolichocephalic, eighteen (18) orthocephalic, twenty-nine (29) brachycephalic and fifteen (15) that we have classed as flattened skulls. They range from a cephalic index of .716 among the dolichocephali to .856 among the brachycephali, or accepting the classification of the English authorities, from the subdolichocephalic to a high grade of brachycephalism. Names, however, are of but little import; the one, central fact is to be found in the presence, in these graves, of skulls which, after excluding those tabulated as distorted or much flattened, are shown by their measurements to belong to the two extremes of classification, and which cannot be brought into the same group without doing violence to all ideas of craniology. If the terms dolichocephalism and brachycephalism mean anything, then those two forms of skulls are found here, and there is no method of measurement sufficiently elastic to include them both under one head. This fact is by no means new or novel, though it has not been many years since Dr. Morton and anthropologists of his school stoutly maintained the uniform

brachycephalic type of crania among all the American aborigines except the Esquimaux. Of late years, however, the contrary opinion, so ably advocated by Dr. D. Wilson, has been steadily gaining ground, and to-day there is but little hazard in saying that it is generally received. But the evidence, furnished by a study of this collection, seems to lead still farther, and we are required not only to admit the existence of different forms of skulls, as there well might be in different tribes, but also to conclude that they are to be found among the same people, or people living under the same tribal organization, much after the fashion in which they are, to-day, known to exist among the composite peoples of our great commercial cities. This is hardly in accord with the opinions generally held as to the purity of race, in prehistoric times, but it seems impossible to avoid the conclusion, if it be admitted that the fact that these skulls were found buried together indiscriminately, in the same style or set of graves, in the same mound, and so far as we can judge, at or near the same time, is any proof that they belonged to people of the same tribe and race. In the case of Museum No. 11,860, the evidence is even stronger, as in this instance a normal dolichocephalic skull and a brachycephalic one, slightly flattened posteriorly, were found buried in the same stone graves, in a mound, and under circumstances that make it impossible that the interments could have been made at different times. This mode of burial could hardly have taken place except among members of the same family or *gens*, or at least members of the same tribal organization, and the argument as to the probable identity of race is certainly of equal weight.

CLINICAL OBSERVATIONS ON THE BLOOD OF THE INSANE. By S. Rutherford Macphail, M. D., Edin., Assistant Medical Superintendent, Garland's Asylum, Carlisle.

A painstaking paper, full of clinical and statistical interest to physicians of hospitals for the insane. The following are the author's conclusions:

1—While there is no evidence to show that anæmia in itself is a case of insanity, yet an anæmic condition of the blood is undoubtedly in many cases intimately associated with mental disease. 2—The blood in the demented class of asylum patients is deficient in hæmoglobin and in hæmacytes, and the deterioration progresses as age advances. 3—The blood in patients known to be addicted to masturbation is deteriorated in a marked degree. 4—The blood is below the normal standard in General Paralysis, and the deficiency is greater in the active and completely paralyzed stages of the disease than in the intervening periods of inactivity and quiescence. 5—While there is a deficiency in the quality of the blood in Epileptics, the decrease is not so pronounced as in ordinary demented at the same age. 6—Prolonged and continuous doses of bromide of potassium do not cause deterioration in the quality of the blood. 7—Prolonged attacks of excitement have a deteriorating influence on the quality of the blood. 8—The blood of the average number of patients on admission is considerably below the normal standard. 9—In patients who recover, the quality of their blood improves during residence in the asylum, and on discharge is not much below the normal standard. 10—There appears to be a close

connection between gain in weight, improvement in the quality of the blood, and mental recovery. 11—While there is a definite improvement in the condition of the blood during mental convalescence in all cases, the improvement is both more pronounced and more rapid in those who have had tonic treatment. 12—The four tonics which either alone or in combination proved most efficacious in restoring the quality of the blood as shown by these observations may be classed in order of value thus (a) iron, quinine and strychnia (b) iron and quinine (c) iron alone (d) malt extract. 13—Arsenic proved of little value as a blood tonic in these cases, and the observations with quassia and cod-liver oil did not give satisfactory results. 14—The close connection which exists between improvement in the quality of the blood, increase in weight, and mental recovery, the converse which exists in cases of persistent and incurable dementia, and the marked improvement which is effected by certain remedial agents show that this line of clinical research, more especially with reference to the curative treatment of the insane, should have more attention paid to it than has hitherto been the case."

IDIOTIC AND FEEBLE-MINDED CHILDREN. Report of the Standing Committee to the Eleventh National Conference of Charities and Reforms, St. Louis, 1884. By Isaac N. Kerlin, M. D., of Pennsylvania, and Hon. H. M. Greene, of Kansas.

This is a forcible presentation of the needs and just demands and desserts of the state's most important eleemosynary institutions. We have only space to extract one of the plain truths uttered in these reports, and to endorse it:

"If the noble institutions of the times—those temples sacred to the restoration of fallen humanity, nearer Christ in his work than half the shrines dedicated in his name—must be fed or starved at the caprice of a thoughtless public or of a mercenary legislative lobby, it were better, perhaps to leave their wards with their burdened families, where at least no flattering promises of amelioration are subject to such possibilities of cruel disappointment. What the officials and patrons of these institutions demand is not the vacillating support of an ethereal sentiment or the doles of an omnibus appropriation bill, subject to expansion or contraction as certain policies prevail or whims dictate, but the strong, constant sustenance of the right hand of the State, as secure in the knowledge that the asylums of the Commonwealth will be built and maintained as that the penitentiaries will be supported or the courts upheld. Our wards are innocent of crime or fault. In the large majority of instances, they are the feeble and deformed expressions of parental sins or sorrows. And these sad traits in very many instances are the reflection of woes which the State has directly or indirectly caused. The unfortunate children, upon whom are impressed all the terrors of the time, are rightful claimants of her fostering care.

"There is another and a broader view which I venture to present. The State which licenses the sale of intoxicating liquors becomes a partner in the transaction. The cost of the license represents only a part of this share in the partnership. For a paltry sum, the Commonwealth allows municipalities to protect the procurer of unnumbered crimes and sorrows.

In some States, a provision of law makes him nominally responsible for injuries inflicted by the business of the firm; but the State bears the costs of the prosecutions and executions, leaving the widows and orphans, and the wrecks denuded and damned by the partnership, to struggle unaided through the remainder of life as best they may. Even these melancholy ruins do not represent the entire devastation wrought by this arrangement. These woes, sad as they are, are perpetuated and intensified in another generation. Innocent children are doomed to an eternal passion for debauch or to an existence of helpless imbecility. The women of America, endure from intemperance, evils more debasing and destructive even than African slavery."

THE PROSPECTUS OF MIND IN NATURE. A Popular Journal of Psychical, Medical and Scientific Information. Published Monthly by the Cosmic Publishing Company, J. E. Woodhead, Manager, No. 191 West Washington Street, Chicago, Ills.

The object of *Mind of Nature* is to furnish, in a popular manner, information regarding psychical questions, the relations of mind to the body and their reciprocal action, with special reference to their medical bearings on disease and health, and to give the most striking and interesting facts and discoveries of science. Its columns will be enriched with special contributions from men in both hemispheres who have attained eminence in the spheres of science, mental philosophy, and theology. It will give a full *resume* of all the investigations and reports of the English and American societies for psychical research, and of the branch Societies to be formed in different portions of our country. It will collate facts and incidents and present the laws which may be deduced from them by unbiased, competent scientific observers. One of its chief aims will be to gather from trustworthy sources, information on the various subjects grouped under "Telepathy, or the influence of mind upon mind apart from ordinary perception." The names of the following special contributors appear with the prospectus:

Rt. Rev. Samuel Fallows, D. D., Chicago, Ills.; H. W. Thomas, D. D., Chicago, Ills.; Prof. David Swing, Chicago Ills.; Prof. James D. Butler, LL. D., Madison, Wis.; Galusha Anderson, LL. D., President University of Chicago, A. Reeves Jackson, A. M., M. D., President of College of Physicians and Surgeons, Chicago, Ills.; A. E. Small, A. M., M. D., President of Hahnemann Medical College, Chicago, Ills.; Henry M. Lyman, A. M., M. D., Prof. of Diseases of the Nervous System, Rush Medical College, Chicago, Ills.; D. R. Brower, M. D., Prof. Nervous Diseases, Woman's Medical College, Chicago, Ills.; N. B. Delamater, A. M., M. D., Prof. Mental and Nervous Diseases, Chicago Homeopathic Medical College, Chicago, Ills.; Edgar Reading, M. D., Prof. Diseases of the Nervous System and Respiratory Organs, Bennett Medical College, Chicago, Ills.; Oscar A. King, M. D., Prof. of Diseases of the Nervous System, and of the Mind, College of Physicians and Surgeons, Chicago, Ills.; R. N. Foster, M. D., Chicago, Ills.; Prof. R. U. Piper, M. D., Chicago, Ills.

It will be published the first of every month, and sent, post-paid, for one year upon the receipt of one dollar, or a single copy for ten cents. It will contain sixteen pages, printed on heavy, fine book paper.

SEARCY ON NERVE FUNCTIONS.—

The sciences of psychology and neurology differ from all others in the amount of previous training necessary to develop proficiency in them. In other sciences it is necessary to serve a laborious and prolonged apprenticeship before attaining to the position of an expert and an instructor; but in neurology this is not necessary. A sudden inspiration occurring in one who has no previous knowledge of the subject is enough to constitute him an authority, and to give a value to his utterances. Such inspirations are fortunately not infrequent; indeed, should they unhappily cease, there would be a very serious diminution in the amount of literature devoted to these two sciences. Still it must be confessed that the production of papers on neurology and psychology by those who have not acquired a knowledge of the rudiments of these sciences is attended by certain inconveniences. It leads to innovations in terminology. The technical terms of these sciences are used by those who are familiar with them in certain definite and restricted senses, meant to convey definite and restricted meanings, and where they are used in different senses to express meanings altogether different from the accepted meanings, a certain amount of confusion ensues. This disadvantage is, however, counterbalanced by the introduction of new terms; terms which are rarely defined, the reader being generally allowed to attach to them any meaning that he pleases; and in the presence of such bounty it is difficult to be critical. Among the incidents of the inspiration method in the pursuit of science is the frequency with which rediscoveries take place. By rediscovery is meant the discovery of something that has been discovered before. When it was proposed that Goldsmith should travel on the Continent in order to search out improvements and introduce them into this country, Dr. Johnson remarked that he would probably bring home a wheelbarrow and call that an improvement. The inspiration gentlemen are always bringing home wheelbarrows. They are continually bringing forward discoveries and hypothesis which have been already discovered and settled; which have been discovered perhaps several times before. On the other hand it must be acknowledged that many of the theories broached by this school are of startling originality—are bold to the point of reckless audacity. The article of Dr. Searcy which has given occasion for these remarks is a characteristic example of this class of writings. In less than two pages this author gives what he modestly terms a "Short Synopsis of Nerve Functions," but what in reality contains a brief, a very brief, chronicle of the structure as well as the functions of the nervous system; a theory of the difference of action of the cerebrum and cerebellum; and an entirely new and original theory of the connection of mind with matter. This is probably the most astounding instance of scientific globe-trotting on record. The connection between the passage of a wave of molecular movement through the brain, and the sensation which accompanies it, is a mystery which the greatest thinkers have not only failed to solve, but have pronounced to be forever insoluble by man. Dr. Searcy finds in it no difficulty whatever. It is the simplest thing in the world. The nature of the connection is so patent, so plainly manifest, so grossly obvious, that he does not even argue the matter. He is content to state his theory, and, with the comforting assurance that he

"believes he is warranted" in the suggestion, he leaves us to receive it with proper humility and gratitude. The theory is probably the simplest and most comprehensive that has been given to the world since the days of Newton. It is as follows: A sensation is the receptive act of the "sensating" portion of the nervous system. When a nerve current reaches a certain spot it is "sensated." Nothing could be clearer. The current is passing through a portion of the brain, when, all of a sudden, it is "sensated" into a sensation. The author does not descend into particulars, but this can scarcely be expected in an article of less than two pages. The strength of a theory appears mainly, however, in the success of its application to particular cases; so that it will be serviceable to apply it in this way and observe the result. Take the case of hearing. A wave of serial vibration infringes upon the tympanum; the concussion is communicated to the endings of the auditory nerve and sets up a vibration; the vibration travels along the nerve-fibres until it reaches a certain region of the brain, where it is soundated, and straightway changes into a sound. Or a wave of ethereal vibration infringes on the retina; sets up a nerve current, which travels inwards till it comes to a place where it is bluated, and straightway changes into a sensation of blueness. In the same way other nerve currents are redated, heatated and touchated, changing into the sensations of redness, heat and touch, respectively. In the presence of such a theory criticism is impracticable. Ordinary mortals can only maintain an attitude of reverent receptivity.

C. M. L.

THE BUNTLING BALL.—

Is a popular and graphic satire on the vanities, follies and foibles of the "sham society" so-called of New York. Its authorship is yet veiled in mystery and the question, who wrote "The Buntling Ball?" is likely to prove as interesting as the question concerning the authorship of the letters of Junius or "Who Struck Billy Patterson." A great many guesses have been made, some guessers having attributed it to Dr. Hammond, and the publishers, Messrs. Funk & Wagnalls, Nos. 10 and 12 Dey street, New York, offer a premium of one thousand dollars to the successful guesser.

There is a fund of burlesque and humorous satire in the book. We guess it is the penwork and headwork of Julian Hawthorne assisted by some anonymous press reporter of New York.

The story is of,—

Anastasia Buntling, faithful spouse
Of stout Alfonso, potentate in pork,

From Europe just returned, who, with money surperfluous, and a stunning ball, seeks an *entre* into New York society.

The untoward incidents of the ball are the clandestine marriage of youthful Jane Buntling to "obscure Leander Briggs," an humble dry goods clerk who measured pink silk, and whom Jane had met but thrice till her "soul had bowed in reverent homage" to him, and the inopportune appearance and speeches of stout and plainly republican Alphonso, who despises not his humble origin, nor cares to conceal how he first met and was smitten by Anastasia when she "helped tend customers" in her

mother's "nice respectable candy store," "just twenty-one years ago," in Chicago, who in his cups gives the early family history when their "food was cooked by Anastasia's hand," before Jane was born and before "in sober conference" they "choose the novel luxury of a cook," or later, "the larger luxury of a chambermaid," to the great chagrin and mortification of Mrs. Bunting.

An unexpected bond of sympathy is opportunely discovered in the mutual love of the old man and Leander for Tupper's proverbial philosophy which has a facetious and felicitous ending.

BIENNIAL MESSAGE OF JOHN M. HAMILTON, GOVERNOR OF ILLINOIS, TO THE THIRTY-FOURTH GENERAL ASSEMBLY. January 30, 1885.

This report contains among many useful recommendations the following complimentary references to the State Board of Health, and satisfactory exhibit of the sanitary condition of the people of the state, in consequence of the Board's work :

"The State Board of Health, which was in its inception very difficult to establish by legislative enactment, has steadily grown in usefulness and popular favor, until now it is one of the most important bureaus of the State government. By reason of the able management of its members, and especially of its secretary, the medical profession of the State has been very much elevated and improved. Incompetent beginners have been prevented from practicing. The grade of medical education required for practice has been raised to a respectable and safe standard, while mountebanks and quacks have been driven from the practice of their wiles and deceptions on the people of this State. The health of the citizens and their protection from inroads of contagious and epidemic diseases have been faithfully and carefully watched. Rules for sanitary care and regulation and instruction as to prevention and cure of prevalent and especially dangerous diseases, have also been so successfully published and promulgated that it is believed thousands of lives have been saved."

DRAFT OF A PROPOSED LAW. Relating to the Care and Treatment of the Insane in the State of Illinois.

The best part of this proposed law is section 6 :

"SECTION 6. Where no jury is demanded, and the circumstances of the case are such that there appears to the judge to be no occasion for the impaneling of a jury, or that a trial by jury would for any reason be inexpedient or improper, the judge shall appoint a commission of two qualified physicians, to be chosen by himself, on account of their known competency and integrity, who shall make a personal examination of the patient and file with the clerk of the court a report, in writing, verified by affidavit, of the result of their inquiries, together with their conclusions and recommendations. The commissioners herein provided for shall have power to administer oaths and take sworn testimony."

It is time the present law onerous and unjust in this State to the insane, which makes lunacy perpetual by needless delay and outrages the sanctity of the family circle, by its unnecessary publicity, should be changed.

DE L'APHASIE ET DE SES DIVERSES FORMES. Par le Dr. Bernard, Ancien Interne en Médecine et en Chirurgie des Hôpitaux de Paris. 1 Vol. Svo., pp. 271. Illustrated.

This is one of the publications *Du Progrès Medical*, and fully up to the uniform high standard of merit of this Journal's publications; in book form and fully worthy the pen of its distinguished author. It comes to hand too late, however, for securing the lengthy and critical review which it merits and would receive, did our space and time now permit.

A critical weekly cotemporary gives us a timely summary of its contents as follows: "It is by no means confined to the ordinary limits of aphasia. After several introductory chapters, in which the author treats of the definition and history of the disease, of the nature of language and its physiological seat, he explains the various forms of the disease, their origins and relations, and includes in his view agraphie, or the inability to use written language. Complex aphasias are then considered, and a chapter is devoted to the consideration of the medico-legal bearings of many of the facts he has set forth.—*Med. and Surg. Reporter*.

A NEW METHOD OF RECORDING THE MOTIONS OF THE SOFT PALATE. By Harrison Allen, M. D.

A straight rod is passed through the nostril, so that the pharyngeal end is in contact with the superior surface of the soft palate and is consequently influenced by every motion of the palate. The outer end terminates in a fine point, and is in contact with carbon-covered paper, which, by means of Ludwig's hymographion, records the movements of the rod.

Dr. Allen has found definite tracings for vowels and consonants, sniffing, hawking, swallowing and all other palate movements. He shows that the figures in various works on throat and mouth representing the palate in its various functional attitudes are based on erroneous conceptions.

Dr. Allen is the first to give physiologists a perfectly accurate method of studying the movements of the palate, but practically speaking his method is no addition to previously existing methods of determining the pathological state of the palate and its muscles. J. C. M.

MANUAL OF NERVOUS DISEASES AND AN INTRODUCTION TO MEDICAL ELECTRICITY. By A. B. Arnold, Prof. of Diseases of the Nervous System and Clinical Medicine, College of Physicians of Baltimore.

This is a plain, practical book of value to the medical student and younger physicians. The book will answer well the purposes of a review and remembrancer, and has the advantage of simplicity and brevity. It is open to some criticism, but the author disarms the critics by the purposes for which he announces the book, namely: "To suit the wants of the beginner, who is not prepared to profit by the study of elaborate treatises." This conviction prompted the author to prepare the present work, and it will answer well his purpose.

THE PHYSICIAN HIMSELF; And What He Should Add to His Scientific Acquirements in Order to Secure Success. By D. W. Cathell, M. D., Late Professor of Pathology, College of Physicians and Surgeons, Baltimore, Md.

It is on our table: A handsomely bound octavo volume, 284 pages,

pica type. Sent by mail to any address on receipt of \$2.00, by the Publishers, Cushings & Bailey, 262 W. Baltimore St., Baltimore Md., and for sale by booksellers generally.

ORGANIC DISEASE OF THE BRAIN.—

Among the interesting articles in the *Medico-Legal Journal* for July, is one on "Organic Disease of the Brain Not a Constant Factor in Insanity" (read before the Medico-Legal Society of New York, Nov. 19, 1884), which is accompanied by a good likeness of Dr. Conolly. At this day when so much is known of the psychical derangements following vascular disturbances of the brain induced by disease or medicines, such a proposition would hardly need to be further proven.

TREATMENT OF THE INSANE. By Orpheus Everts, M. D., Medical Superintendent of the Cincinnati Sanitarium, Vice-President Association of American Superintendents of Insane Hospitals, &c.

Contains many practical suggestions of value from a practical and competent source. The author deals judiciously with the mooted subject of restraint.

REPORT ON TINNITUS AURIUM. By George C. Catlett, M. D., Superintendent of the Lunatic Asylum, St. Joseph, Mo.

This is a valuable contribution to the literature of this interesting subject.

COCAINE AND ITS USE IN OPHTHALMIC AND GENERAL SURGERY has become too well-known, through the periodical medical press, to require much notice now at our hands. The book before us is from the able pen of Dr. H. Knapp, Prof. of Ophthalmology, in the Medical Department of the University of New York, and reprinted from the *Archives of Ophthalmology*, with supplementary contributions, by Bosworth, Hall, Keyes, Knapp and Poeh. It is a valuable record of clinical experience with this new local anæsthetic, which has so rapidly grown in favor with the profession. G. P. Putnam's Sons, Publishers, New York and London.

THE INDEX MEDICUS.—Mr. George S. Davis, of Detroit, has undertaken to continue the publication of *The Index Medicus*, on the same general plan and with the same regard to typographical accuracy and finish, as heretofore. At the end of the year, in addition to the usual annual index of names, subscribers will be furnished with an index of subjects to the volume. This is good news to the literary portion of the profession especially, and we hope to see the enterprise sustained.

LA SALUTE REVISTA DI MEDICINA, redatta dai Professori Roberto Campana, Antonio Ceci, Gniulio Fano, Gaetano, Salvioli, (Anno xix.,) Genova, Serie 3, fascicolo II., Anno 1885, is before us with an interesting table of contents. The chief articles are a clinical note, by Dr. C. G. Ampugnani, on "Polyuria from Iodoform," and "An Experimental and Medico-forensic Study of Geselminum Sempervirens," by Dr. Carlo Raimondi.

THE CURE OF WRITER'S CRAMP. By A. De Watteville, M.A., M. D. B. Sc., Physician in Charge of the Electro-Therapeutical Department, St. Mary's Hospital. [Reprint.]

SOME INTERESTING FACTS CONCERNING THE PROPORTIONS OF NERVOUS TO OTHER DISEASES. — We have received from Landon Carter Gray, Lewis D. Mason, A. H. P. Leuf and others an interesting announcement made to the medical profession of the dispensary for the treatment of nervous and mental disease, at 48 Debevoise place, near the junction of DeKalb avenue with Fulton, in which these gentlemen, after promising that the study of nervous and mental disease is the latest of all the specialties, and that the importance and frequency of those maladies have been overlooked by the public and even by physicians, state:

“The total death-rate of Brooklyn for nineteen years (1848 to 1860, inclusive, and 1861 to 1876, inclusive), from all diseases was 116,910. Of these, 21,370 were cases of death from diseases of the nervous system. Deaths from accidents befalling the nervous centres, and deaths not directly due to nervous diseases, are not included.

“The death-rate in the city of Brooklyn from nervous and mental disease may, therefore, fairly be said to be 19.43 per cent.

“If the deaths be computed that have occurred from diseases both directly and indirectly affecting the nervous system (as convulsions after childbirth, for instance) and from casualties implicating the nervous centres, they will number 22,882 for the same period of time, and it can be affirmed that:

“The death-rate from diseases and casualties directly and indirectly affecting the nervous system is 20.81 per cent. in the city of Brooklyn. Nervous disease is next to the most frequent cause of death, as the following figures will show:

Name of Company.	Total No. of Deaths.	Percentage of Deaths from Nerv. Dis.	
N. Y. Equitable	2,192	18.80	Nerv. Dis. most frequent. Percentage of constitutional dis. being 18.54. Constitutional diseases—Consumption, cancers, dropsy—alone surpass Nerv. Dis., their percentage being 20.10. Zymotic diseases alone exceed, percentage being 19.40. Respiratory disease was more frequent, percentage being 31.81. Respiratory diseases only exceed, percentage being 19.90. Nerv. Dis. most frequent.
N. Y. Mutual.	3,182	17.80	
Scottish Amicable Society	773	16.81	
New England Mutual	247	17.81	
Gresham Life	206	17.47	
Gotha Life Assur. Bank	17	01	

“Mr. James Meikle, analyzing the deaths among the Scotch insurance companies from 1815 to 1883, came to the conclusion that insured lives die in larger proportions than the population from, firstly, zymotic disease; secondly, diseases of the brain and nervous system.—(Insurance Cyclopædia, Vol. II., p. 325.)

“According to an analysis made by Dr. Althaus of the deaths reported by the Registrar-General of England and Wales, during the years from 1838 to 1871, ‘diseases of the nervous system occupy the fourth rank amongst the maladies destructive of human life, being only surpassed in fatality by zymotic, tubercular, and respiratory diseases.’—(Diseases of the Nervous System, 1878, p. 8.)

“According to tables prepared for the private use of the N. Y. Life

Insurance Co., by J. W. Guiteau, Esq., and verified from the official records by Dr. Charles F. Folsom, Secretary of the Massachusetts State Board of Health, 59,512 males died in Massachusetts during the eight years ending December 31, 1878. If the number of deaths during this period from pulmonary consumption—the most fatal of all diseases—be represented by 100, the deaths for the same time from diseases of the nervous system would be represented by 46—nearly one-half. In other words, according to this computation, nervous diseases are nearly one-half as fatal among males as the most fatal of all diseases, consumption. Indeed, according to these same tables the nervous diseases grouped under the heading of inflammation and disease of the brain are only exceeded in frequency by Consumption, Pneumonia, Heart-Disease, Typhoid Fever, and exceed in frequency the deaths from Dropsy, Bright's Disease, Cancer, Drowning, Self-Destruction, Liver Disease, Small-Pox, Kidney Disease, Railroad Accidents, Rheumatism, Inflammation of the Bowels, Erysipelas, Dysentery, Diarrhœa, Cancer of the Stomach, Asthma, Cholera, Inflammation of the Stomach, Pleurisy, Diphtheria, and many minor diseases and casualties.

“Not only do deaths from nervous disease occur most frequently among the industrious and healthy, as the experience of the Life Insurance Companies would seem to demonstrate, but they also occur with increasing frequency during the most active years of life.”

The Committee justly pronounce it a startling fact that, whilst every city in the country has one or more hospitals for the reception of other disease, there is not one in the land for the adequate reception of nervous diseases.

The following are the conclusions: “1, The death-rate from nervous and mental disease in the city of Brooklyn is about nineteen per cent. 2, Nervous and mental diseases probably rank next in prevalence to zymotic, tubercular and respiratory diseases. 3, Diseases of the nervous system are either the most frequent cause of death, or the second most frequent cause, among the most robust and industrious classes of the community. 4, Nervous disease is probably, therefore, most prevalent in this class of individuals.”

THIRD Annual Report of the Associated Charities of the District of Columbia for the year ending October, 1884.

COTTAGES Homes for the Treatment of Mental Diseases. By L. W. Baker, M. D., Baldwinsville, Mass. [Reprint.]

THE Care of Epileptics. By L. W. Baker, M. D., of Baldwinsville, Mass. [Reprint.]

THE
ALIENIST & NEUROLOGIST.

VOL. VI. | ST. LOUIS, JULY, 1885. | No. 3.

ORIGINAL CONTRIBUTIONS.

Continuation of the Study of the Minute
Anatomy of the Central Organs of the
Nervous System.

By PROF. GOLGI, of Pavia, Italy.

CHAPTER V.

On the Minute Anatomy of the great foot of the Hippocampus.

THE great foot of the Hippocampus is one of the regions of the cerebrum which presents a most complicate structure, the study of which is all the more interesting, as its function remains yet very obscure, and an exact determination of the cellular forms which enter into its formation, and the study of the course and the behavior of its nervous fascies, may perchance furnish some light in this relation.

Independently of the morphological study, the results which I am able to present respecting this part of the cerebrum, have, in my opinion, a special interest, whether because they exhibit all that can be at present asserted of a more minute and exact nature, regarding the general question of the relations of the nervous fibres with cellular groups, or, because a part of these results consists of a description of some fascies of nervous fibres, sufficient in details to appear to me to warrant the hope, that by continuing the researches in the same direction, we may

perhaps be enabled to arrive at, and to complete their description, and thus to obtain some indication of their function, and of that of the corresponding groups of cells. (I have been able to follow the course of the nervous fibres from their origin in well determined strata of cells, to a great distance.)

With respect to the particularized exposition of the results related to the elementary morphology and the histology, with the view of rendering it easier and clearer, it seems to me useful to preface a brief rehearsal of the microscopic anatomy of the great foot of the Hippocampus, and the more so as it affords me the opportunity of making some remarks on the description of this part, generally given.

1. *Anatomical Rehearsal.*—The cornu ammonis, or great foot of the Hippocampus, resulting essentially from the introflexion of the convolutions of the Hippocampus towards the descending cornu of the lateral ventricle, presents itself, when observed from above, following the aperture of the ventricle, under the form of a white ovoidal, semicircular eminence, convex outwards and concave towards the median line, having a direction corresponding to that of the descending cornu of the ventricle. Its superior (posterior) extremity commences at the entrance of the descending cornu, and it emanates from the hood (cercine) of the corpus callosum (splenium corporis callosi): its inferior (posterior) extremity (toe of the foot of the great Hippocampus,) does not extend to the extremity of the descending cornu, but terminates a little from it, becoming gradually confounded with the tissue of the surrounding ventricular wall. The concave margin (towards the median line) of the cornu ammonis is continued in a falciform medullary band, whose border towards the median line is free, but its posterior extremity is in direct contermination with the peduncles of the crus fornix, and the inferior, descending along the cornu ammonis, passes into the uncus. As this part of the cerebrum, results, as I have said, from the introflexion

of the convolution of the Hippocampus, it may be readily understood that, in a vertical section, bringing together the segment belonging to the convolution, which is the point of departure of the introflexion, and the segment of the introflexed part, the form of the letter S results.

The different parts that enter into the formation of the foot of the Hippocampus, and their different zones, have received special names, which should be recorded. Commencing at the base and gradually proceeding upwards, we meet with :

The subiculum cornu ammonis. Burdach, who first used this name, designated by it the convolution of the Hippocampus itself, and it is yet used in this sense by some writers; others, on the contrary, use it to indicate more limitedly that tract of the convolution of the Hippocampus, which is directly continuous with the foot of the Hippocampus. Huguenin says, the convolution itself of the Hippocampus, as seen from the internal part, is to be called, subiculum cornu ammonis, stratum convolutum. (The gray convolute stratum.) This is the continuation of the cortical stratum of the subiculum; that is to say of that stratum, which by reason of the turning, becomes superior instead of inferior, and hence is directed downwards. Both surfaces of this stratum (the ventricular and the external,) are limited by a lamina of white substance. I shall farther down allude to this lamina under the names of Alveus (the covering of the ventricular surface), and lamina medullaris convoluta (the part applied to the external surface).

Substantia ricularis alba. The gyrus fornicatus (gyrus cinguli; convolution of the outlet of Foville,) from the point at which, in turning round the hood (cercine) of the corpus callosum, it is directed downwards to receive the name of gyrus Hippocampi, as far as the uncus is covered in its whole length by a thin stratum of white substance, which, because of its particular aspect (small white circles separated by slender

reticular gray striæ,) has been called the *substantia reticularis alba*.

Lamina medullaris convoluta (nucleus lamina). The stratum of white substance that invests the external surface of the convolution of the Hippocampus and the subiculum, assuming the name of nucleus lamina, and that of convolute medullary lamina, is continued in the interior of the cornu ammonis, but it remains always applied to the continuation of the free surface of the convolute gray stratum. On the surface of the section of the cornu ammonis, this stratum is seen in the form of a white streak between the gray stratum, which is continuous with the cortex of the subiculum and the gray stratum which forms the fascia dentata.

Fascia dentata. This is a lamina of gray substance, whose free surface is distinguished by a gelatinous splendor, and by a series of depressions (whence the dentate aspect which gives it its name); this series occupies the concavity of the convolute lamina. Proceeding from the inferior surface of the corpus callosum, in a way which I shall mention farther on, it enters deeply into the channel resulting from the duplicature of the gyrus Hippocampi, in order to terminate in a direction from above downward, in correspondence with the uncus.

Alveus. This is the stratum of white substance which invests the whole ventricular surface of the cornu ammonis. This membranous stratum of nervous fibres forms the medullary band (*fimbria*), which limits the whole internal margin of the great foot of the Hippocampus, and this band then constitutes the principal origin of the fornix.

Fimbria (*Taenia*, *corpus frangiatum*). By this name has been called the lamina of white substance limiting the median margin of the Hippocampus; it results essentially from the union of the fibres, which, with a prevailing longitudinal direction, run on the ventricular surface of this eminence.

From the point of the Hippocampus backwards, the

fimbria increases in thickness. In its whole length it sits upon the upper surface of the Hippocampus, and separates from it only toward its posterior extremities, in order to pass into the under surface of the corpus callosum, and is continued without interruption into the peduncles of the fornix. Finally, it furnishes the chief part of the fibres of the triangle.

II.

Remarks on the macroscopic description of the great foot of the Hippocampus.

First. The majority of anatomists have, in relation to the fascia dentata, restricted themselves to the description of its aspect, and its situation in the sulcus resulting from the introflexion of the subiculum, without saying anything about its derivation and its relations; others on the contrary, among whom are Henle, Krause, Luys, etc., have given attention to these, stating that the origin of the gray lamina joining the fascia dentata, should be sought for in the posterior extremity of the upper surface of the corpus callosum.

According to the description of Henle, who is among the anatomists the one who has treated the subject with greater detail, the fascia dentata commences under the form of a thin stratum of longitudinal fibres of the thickness of twenty-five millemeters, in the upper surface of the hood (cercine) of the corpus callosum; it is covered by the outstretching margin of the gyrus fornicatus.

This fascicle, commencing on the inferior surface of the hood (cercine), should present a gradual enlargement of volume, which is produced by the gray substance insinuating itself among the longitudinal and tranverse fibres of the corpus callosum, and thus raising and separating them.

Krause, on the contrary, derives the fascia dentata from a thin stratum of gray substance, which should extend from the cortex of the gyrus fornicatus for some

extent on the upper surface of the corpus callosum (fasciola cinerea cinguli).

My observations on the derivation and relations of the fascia dentata permit me to declare what has been said by the above two anatomists is exact.

The band of gray substance forming the fascia dentata has indeed its origin from the upper surface of the corpus callosum, but its commencement is not a fascet of nervous fibres, as Henle asserts, nor an expansion of the gray substance of the gyrus fornicatus, as Krause would have it. On the upper surface of the corpus callosum the fascia dentata is continuous with the two striæ of gray substance which we find differently developed, according to the individuals and according to the various species of animals; these striæ run down at the side of the small sulcus along the median line of the corpus callosum, under the name of striæ longitudinales mediales, or Nerve of Lancisi; they have been described by all anatomists as consisting of longitudinal nervous fibres, whilst, on the contrary, they consist of gray substance disseminated with numerous gangliar cells.

I shall return to this subject with another special remark at the end of this work. I must, however, here pertinently add, that Luys also speaks of the relations existing between the fascia dentata, and the striæ longitudinales mediales; but he holds these striæ as exclusively formed of longitudinal nervous fibres.

Second. My second remark pointedly relates to the progression of the so-called lamina medullaris circonvoluta, or lamina nuclearis.

Relative to this fold of white substance, which, as has been said, represents the continuation of the substantia reticularis alba on the deep surface of the gray convolute lamina, both Henle and Krause assert that it goes to join the white substance forming the fimbria. This assertion also is erroneous.

If in transverse sections of the great foot of the Hippocampus, we follow the course of the nuclear

lamina, it is not difficult to show, even to the naked eye, that whilst it runs on the external, non-ventricular course of the convolute gray lamina, it proceeds gradually thinning, yet still presenting a trace until it comes into correspondence with the second curve of this gray stratum (which takes place at the level of the fimbria). At this point the residue of the nuclear lamina, always maintaining itself neatly separate from the white substance forming the alveus and the fimbria, makes a curve, in order to enter the aperture of the arch, resulting from the visual section of the fascia dentata, without, especially to the naked eye, the possibility of deciding in what manner this takes place.

On the part of the convolute gray lamina, on the other hand (the ventricular surface of the Hippocampus), there is a cone of nervous fibres, which emanates from the corpus frangiatum, but this never traverses the gray stratum in question, and its internising is evidently in relation only with the curvature which the stratum undergoes in order to occupy the vacancy limited by the fascia dentata. All these particulars, which are, I repeat, clearly demonstrable even to the naked eye, are notably interesting with regard to the knowledge of the probable physiological significance of the convolute medullary lamina; and in this relation I remark, for the present, that, these macroscopic findings are in exact correspondence with the microscopic, which I shall detail further on.

Third. Relative to the conception generally entertained of the great foot of the Hippocampus as a whole, that is, that it results simply from the introflexion of a single convolution, I think I should here also remark that there is an inexactitude.

In its formation there concur, on the contrary, two convolutions so distinct from each other, that perhaps no example of the same is to be met with in other convolutions. The distinction results, first of all, at least as regards one of their two surfaces, from the space which

always exists between the two, a space that is usually occupied, either by a prolongation of the pia or by a blood-vessel; secondly, from a different origin of the two gray strata, and the different course of the nervous fascies destined to each of them.

I would here pertinently add that the distinction has been afterwards confirmed by the microscopic study, which shows that there are in the two strata quite different types of cells. In fact there are in the convolute gray lamina gangliar cells which present no essential difference from those of the cortex (pyramidal cells). In the fascia dentata, on the contrary, there are small globose elements of a typical aspect, having no comparison with those of the cortex of the cerebrum in general.

To complete the difference, we add the altogether different disposition of the cells in the two strata. In the fascia dentata the disposition of the cellular elements is absolutely inverse to that found in the convolutions in general, not excluding that of the Hippocampus; in fact, if in a section of the foot of the Hippocampus we compare the two relative gray strata (the fascia dentata and the convolute gray lamina), we observe in them a disposition of the gangliar cells, exactly such as may be observed in two opposite convolutions whose free surfaces touch each other.

Fourth. From the description of the great foot of the Hippocampus, given by Henle, Krause, Meynert, Huguenin, etc., it appears that these observers admit, not only that the fascia dentata is a direct continuation, but indeed an expansion of the convolute gray lamina, an expansion which would seem to need to be verified with the view of occupying the space resulting from the introflexion of the subiculum, but these writers also, indeed, regard the stratum of the small cells of the fascia dentata as correspondent to the more superficial stratum of small pyramidal cells of the subiculum, and of the cortex of the cerebrum in general. After what has

been said in the preceding remark (3), it seems to me superfluous to take up time in again demonstrating that this assertion is quite opposite to the truth. The fascia dentata must, on the contrary, be regarded as a second convolution, which, although very delicate, is at least equally distinct as the convolute gray stratum.

III.

Historical notes relative to the microscopic study of the great foot of the Hippocampus.

In determining to enter on the microscopic study of this part of the brain, it is an almost absolute necessity first to give an account of the results presented in the only two special works which have been published on the subject; these are the work of Kupffer, and that of Meynert, the first in 1859, and the second in 1872.

The circumstance that the work of Kupffer bears the impress of the imperfection of the methods of examination, and of the defective knowledge then existing, as to the minute structure of the nervous centres, and that the description by Meynert presents too many proofs of the habit of this observer, to adapt anatomical data to his theoretic notions, is no sufficient reason for dissuading me from engaging in this discussion, since their descriptions, although in great part erroneous, have had an extensive credit of being vigorous and exact.

This *résumé* will afford me a suitable opportunity of exhibiting the numerous inexactitudes into which both Kupffer and Meynert have fallen.

The researches of Kupffer were made on the cornu ammonis of the rabbit, the cat, dog, mouse and rat; he, however, found the rabbit, among all the animals used by him, by far the most suitable for the study, and his description relates specially to it, remarking, however, that as to structure, the correspondencé being perfect, whatever he said of the rabbit should hold good as to the other animals.

In the microscopic description of the cornu ammonis,

Kupffer distinguishes seven strata, which, arranging them from above downwards, have been designated by him as follows:

First.—*Stratum fibrarum nervearum.* This he says is formed by slender medullary fibres only, interlaced in different ways.

Second.—*Stratum moleculare.* This would consist of fine molecules only, without any trace of nervous fibres.

Third.—*Stratum cellularum.* Kupffer describes, as forming this stratum, cells partly triangular and partly fusate, and therefore very far from having the aspect of twigs; cells disposed either in a simple order, or in several orders, one after another. The latter should reciprocally combine to form a single element, restricted to the median part.

Fourth.—*Stratum a peripheria ad centrum striatum.* Formed by the processes of nervous cells passing radially from the periphery to the centre.

Fifth.—*Stratum reticulare.* This should belong to the preceding stratum, and Kupffer says he is uncertain of its nature; but he is inclined to admit that it is formed by an interlacing of nervous fibres, a conjecture which, he observes, would be confirmed by the circumstance that at the side of this stratum there is observed an ingress of nervous fibres belonging to the external investment of the gyrus Hippocampi.

Sixth.—*Stratum moleculare secundum.* This constitutes the inferior lamina of the cornu ammonis towards the fissure, and should have a stricture analogous to that of the stratum moleculare primum.

Seventh.—*Stratum granulosum.* He says this is formed of small bodies having a diameter of 8 to 12 micro-m. m., from which one or two very delicate processes should go out; and he observes that these granules, just as the cells of the stratum callosum, form a pretty regular stratum.

As regards the mutual relations existing between the constituent elements of the cornu ammonis, Kupffer

holds that the fibres of the superior stratum run only on the surface of the cornu ammonis, without forming any connection with the strata beneath.

With regard to the prolongations of the ganglionic cells which, in converging towards the centre form the radiate stratum, he thinks that they are in part decomposed into molecular substance; in part, expanding in a pencil of fibrils, they pass into the network of the stratum reticulare; and in part, but the least, that they issue from the fissure of the cornu ammonis, in order to form the stratum of nervous fibres with which the gyrus Hippocampi is invested.

As to the stratum of granules, the fibres, which he says proceed from these, are in part lost among the cells that exist in that part, without the possibility of determining whether they become conjoined with these cells, or with their processes, and in part they tend towards the surface (?) to unite with the stratum of fibres there existing.

The description of the great foot of the Hippocampus given by Meynert is notably different from that of Kupffer.

Commencing from the exterior (the surface looking towards the concavity of the curve resulting from the introflexion of the subiculum), he distinguishes the following strata:

First.—The lamina medullaris, or lamina nucleare (Kernblatt). This consists of slender fibres, running parallelly, between which, as he says, there is found a very great quantity of fusiform nervous cells, with longitudinal axes, parallel to the prevailing course of the fibres.

The nervous fibres of the reticular substance of Arnold, terminate, he says, in these fusate cells, and necessarily several of them in one, as their prolongations subdivide. On the other part these cells become conjoined with an interlacement of very fine fibres existing in the two succeeding strata, which interlacement results

from the decomposition of the prolongation of the apex of the pyramidal cells. See his figure 237, on page 712, of the article by Meynert, "*Das Gehirn*," in the *Handbuch der Gewebelehre*, published by Stricker.

Second.—Stratum moleculare. This he places between the preceding stratum and his third.

Third.—Stratum laminosum (corresponding to the stratum reticulare of Kupffer). This, he says, has an areolar aspect, which is in special relation with the mode of behavior of the vessels, and with the existence of perivascular spaces. Further, in this stratum is the network alluded to, formed by the prolongations of the apex of the pyramidal cells.

Fourth.—Stratum radiatum. The zone traversed by the prolongations of the apex of the pyramidal cells.

Fifth.—Stratum corporum nervorum pyramidalium. Respecting the relations of these cells, adapting the anatomical data to his doctrine of the systems of association and projection, he says their prolongations of apex go to place themselves in relation with the fusate nervous cells, which, according to him, exist in the lamina medullaris, which is continued into the reticular white substance (system of association), whilst a basal prolongation passes into the system of projection, represented by the fibres of the Alveus.

With regard to the prolongations emanating from the angles of the base of the pyramidals, he says that they are brought into relation with the analogous prolongations of neighboring cells.

Sixth.—Alveus. The stratum of fibres covering the ventricular surface of the cornu ammonis; this stratum, towards the ventricular cavity is provided with the related epithelial covering.

To these six strata he adds three others, as belonging to the superior lamina of the great foot of the Hippocampus, the lamina resulting from the curve presented by the subiculum:

First.—Stratum marginale. A delicate medullary fold

belonging also to the lamina nuclearis, but distinct from it, from being applied to the free surface of the fascia dentata (?).

Second.—*Stratum moleculare secundum seu radiatum.* This would be analogous to, or rather in continuation of the stratum moleculare primum, and he says it is traversed by the prolongations of the apices of the pyramidal cells of the fascia dentata (?).

Third.—*Stratum corporum nervorum artorum.* He asserts that this is a continuation of the second stratum of the subiculum (?), and that it is constituted identically as the second stratum of small pyramidal cells, with the difference that here these cells are found more crowded. (*Stratum granulosum* of Kupffer.)

Among the microscopic descriptions of the great foot of the Hippocampus given by modern anatomists, I shall relate yet that of Krause (1), who, without counting the stratum of fibres that invests the ventricular surface, attributes to this eminence six strata (*Lamina medullaris circumvoluta. S.—Lacunosum. S.—Moleculare. S.—Granulosum. S.—Radiatum. S.—Cellularum pyramidalium*), whilst he distinguishes three or four others in the fascia dentata.

IV.

Microscopic description of the great foot of the Hippocampus.

By the authors above recorded, the microscopic description of the great foot of the Hippocampus has been rendered complicate, and difficult of comprehension, because of the subdivision into numerous strata which, in great part, have no right to be admitted, since they relate to differences altogether secondary, for example that drawn from the cellular bodies being scarce in certain zones, in which, on the other hand, there was a prevalence of prolongations proceeding from the cells of underlying strata.

If, as the criterion for subdivision into strata, we take

histological structure alone, with consideration also of the relations and derivation of such strata, it will clearly appear, that the structure of the great foot of the Hippocampus is not at all so complicate as the subdivisions above detailed would lead us to believe.

I have already stated that in the formation of the organ in question, two convolutions, quite distinct from each other, not less as to their derivation and relations, than as to their structure, take part.

To the great foot of the Hippocampus we may ascribe, first, the two strata of gray substance proper to these two convolutions; next the strata of nervous fibres which here, as in all the convolutions, are derived from the gangliar cells disseminated in the gray substance; thus, in all, four strata.

With this distinction, which may be made even with the naked eye, that obtained by microscopic observation corresponds. It is further to be observed that the gray stratum of each convolution taking part in the formation of the cornu ammonis, has an exceptionally simple structure, perhaps, indeed, the most simple of all the convolutions, therefore, there is no proper reason for the admission of a new subdivision.

With respect to the number and disposition of the two convolutions which unite to form the foot of the Hippocampus, they will at all events present the following modifications:

First. To the gray stratum of the more conspicuous of the two convolutions (convolute gray stratum) belong the two strata of nervous fibres, situate, one on the surface that should be called superficial, and the other on that which should be called deep. It is, however, known that among the common convolutions also, there are several which present a thin stratum of medullate nervous fibres in their superficial zone.

Second. Vice versa, to the second gray stratum of the great foot of the Hippocampus (fascia dentata), there should not be ascribed a special medullary stratum, for

the nervous fibres derived from its cells, traversing the other gray stratum with a disposition and progression which have no equivalent in other convolutions, unite with its fibres. At any rate the exceptions here presented relates only to the particular progression of the fibres, for, as regards the essential fact that the fibres of the one stratum are confounded with those of the other, there is nothing at all exceptional in this, as it is known that fascies of fibres derived from different convolutions are much confounded.

It is superfluous to say that in making the above numeration of strata, no account was permissible of their repetition, caused by the curve which they undergo, for otherwise all the strata would be twice counted, and this would only complicate the description without any advantage.

The four strata of which the great foot of the Hippocampus is formed, are the following:

First.—*The medullary investment of the great foot of the Hippocampus, towards the lateral ventricle (Alveus).* This stratum is in continuation, as has been above said, with the fornix and the white substance of the convolution of the Hippocampus; it may, therefore, be considered as corresponding to the medullary stratum of the convolutions in general.

Second.—*The gray convolute stratum.* This is the continuation of the cortical stratum of the Hippocampus and of the subiculum cornu ammonis.

Third.—*The stratum of fibres limiting the external surface of the preceding stratum.* This is the continuation of the medullary investment (Substantia reticularis alba) of the convolution of the Hippocampus. This continuation, penetrating, the great foot of the Hippocampus, assumes the name of lamina medullaris circumvoluta.

Fourth.—*The gray stratum forming the fascia dentata.* This lamina of gray substance enters into the sulcus produced by the bending of the gray convolute stratum; it is in continuation of the striæ of gray substance

which runs along the whole superior surface of the corpus callosum, beside the median sulcus.

Indicating then, the strata in a strictly histological sense, and according to their succession of internal and external, we shall have: *First*, The internal or first stratum of nervous fibres (Alveus). *Second*, The stratum of great gangliar cells (gray convolute stratum). *Third*, The second or external stratum of nervous fibres (lamina med. circumvoluta). *Fourth*, The stratum of small gangliar cells (Fascia dentata).

It is clear that if, in the numeration of the strata, we might properly take into the account the repetitions resulting from the turning made by them, two others would be added, that is, one stratum of small gangliar cells (the repetition of the gray lamina forming the fascia dentata), and an ashy-gray stratum, formed by the continuation or termination of the convolute gray stratum, which as a fascicle of nervous fibres, derived from the fimbria, goes forward to be expanded.

It is next to be observed that the several strata now indicated, present, in their different zones, some modifications of aspect, produced by circumstances of secondary importance. As regards the convolute gray lamina, the modification may, for example, be produced by the greater or less quantity of the connective elements, or also by the fact that in certain zones, for example towards the interior, the cellular prolongations acquire prevalence over the bodies of the cells; but as we have not here any essential changes of structure, but merely of direction, there is no reason for complicating the description by making as many subdivisions of strata as there are trivial changes of aspect; it will rather be proper to notice these modifications when describing the several strata.

With respect to the foot of the Hippocampus in man, it is to be observed that in adults and the aged it happens with singular frequency, that, in comparison with the young, remarkable differences are met with; in the

latter the distinctness of the strata is usually well-marked; this is seen in those animals in which this part is well-developed; on the contrary in adults, and the old, the transitions not infrequently appear indistinct, and adhesions between the strata, or other modifications of aspect resulting from the great development of the connective tissue and the less regular course of the nervous fascies, are represented, &c., &c.

In consideration of these facts, it will be advisable to avail, in the histological study, of the brains of young subjects, or of those of animals, in which the structural relations as to the cornu ammonis, are essentially identical with those in man.

Whenever we desire to obtain delicate reactions, which demand perfect freshness of texture, it is an absolute necessity that animals shall be used. The brains of the horse, the ox, dog, calf, sheep, rabbit and goat are all suited to the purpose, and in all these, with a few differences relating to the greater or less development of one or another part, there is a correspondence of structure, not only among these animals, but also with man. It is besides always useful to make comparative examinations, for the more evident presence of a particularity in some animals may serve as a guide to the demonstration of the same in other animals, and in man also, in whom they may be less conspicuous, and it may furnish criteria for explaining its significance.

Entertaining this conception, in regard to the cornu ammonis, I have always associated my researches on man with those on animals, so that in the exposition of these studies, proceeding in this way, I think I ought to give a statement of my researches on both.

Among the numerous animals that have been the subject of my studies, I have been convinced that the rabbit is the best adapted, for whilst its cornua ammonis, relatively largely developed, present a perfect correspondence with those of man (both as regards distinctness and the relations of strata, and as regards the histological

structure), at the same time, the greater simplicity of all the several strata, render it by far the best adapted for the clear demonstration of the histological particulars, and above all, of the relations of the various strata, or fascies of fibres, with cellular groups.

We add that, even leaving out the circumstance that in the foot of the Hippocampus in man, we cannot, from the impossibility of getting very fresh sections, obtain those fine reactions which are necessary to display clearly the more minute histological particulars, it would be impossible, because of the larger volume, to represent in illustrative plates all the finer details; whilst, on the contrary, the foot of the Hippocampus in the rabbit, although relatively largely developed, is in such proportions as to permit an intelligible representation, even in plates of moderate size.

I shall, therefore, first exhibit the results relating to the rabbit, and next those relating to man, when I shall be able to reduce the exposition to a comment on the differences presented by the great foot of the Hippocampus in his brain, in comparison with that of the rabbit.

(To be Continued.)

The Trial of Dr. L. U. Beach, of Pennsylvania; with his Psychological and Pathological History.

By EDWARD C. MANN, M. D., New York,

Member of the Medical Society of the County of New York; New York Medico-Legal Society; National Association for the Protection of the Insane, &c.

THIS case of a poor and comparatively friendless man, without the usual means of securing the favorable regards of men, calls loudly for the establishment in every State of a board of experts, who, in every trial of rich or poor, where insanity is alleged as the defence, shall make a suitable investigation into the prisoner's mental condition. In such a case as this, such an investigation would have showed the prisoner to be a man really irresponsible, from the long-continued effect of disease, and the executive would have felt obliged to save him, in spite of the combined ignorance and prejudice of the trial judge and jury, which characterized the whole course of this affair.

In 1864 Dr. L. U. Beach, who was a recent graduate of the University of Pennsylvania, married Frances Sweeney, daughter of Dr. H. H. Sweeney, a leading physician of Bradford County, against the wishes of and unknown to her parents. Beach was the son of a well-known and highly respectable citizen of the county, but had once been under treatment of Dr. Sweeney, for insanity. When the marriage of his daughter to the young doctor became known to him, Dr. Sweeney accepted the situation and took his son-in-law into partnership with him. Some years ago trouble arose between Dr. Beach and his wife, and finally she left him. He went to Hunterdon County and opened an office in Altoona. He subsequently met and married a young woman in that city, a Miss Knott by name. It does

not appear that she was aware that he had a wife living; but to all appearances the couple lived very happily together. One day in April, 1884, Dr. Beach walked into the house of the young woman's brother, W. L. Knott, and coolly told him that he had murdered his wife. The brother and others hurried to the doctor's house, where they found the dead body of the young woman lying on the kitchen floor. The head was nearly severed from the shoulders. There were deep cuts on arms, and the hands were badly cut, as though the wounds had been received while she was struggling with her assassin. A small butcher's cleaver and two sharp surgical instruments, each of the three covered with blood, lay by the dead woman's side. She had evidently first been attacked in bed, for her sleeping apartment was covered with blood and showed signs of a desperate struggle. Bloody footprints led from her room to the room where her body was found. Dr. Beach reiterated the statement that he was the murderer, but would give no reason for committing the crime and none has ever been discovered. The murderer was arrested and lodged in the Hollidaysburg Jail. A special term of court for his trial was called in September last, 1884. Beach's defense was conducted by the Hon. Augustus Landis, on the ground of insanity.

The antecedents of the prisoner, as shown by the evidence below, showed an extraordinary strong case of mental irresponsibility and disease. In spite of the evidence, popular prejudice so swayed the minds of the jury that they were out but a short time and returned an unjust verdict of murder in the first degree. A motion was then made for a new trial, but the application was denied.

The writer then took up the case, and, after carefully studying the evidence adduced, made up his mind that a great wrong had been committed. We sent an urgent personal appeal to Governor Patterson for a commission to be appointed to examine Beach as to his mental

condition and responsibility for his acts. We set forth in our appeal to the Governor of Pennsylvania that there was in the Beach case a questionable verdict. That it was a case fairly entitled to re-examination by the chief executive of the State, as being one where popular prejudice, against the sometimes abused plea of insanity, so influenced a jury that they rendered an unjust verdict, and one that ought to be set aside. That the more we had looked into the case, the more evident it was that our statement was warranted by the facts, and that Dr. Beach was not mentally responsible for his acts at the time he committed, the crime of murder. That because the plea of insanity had, in the State of Pennsylvania, been sometimes abused, was no reason for its being disregarded, and that it was better for many mistakes to be committed than that one innocent man be wrongfully executed. That being entirely a disinterested party, acting entirely only in the interest of humanity and science, our appeal ought not to be disregarded. That to hang an insane man would be a stain on the fair fame of the Commonwealth of Pennsylvania. Upon the evidence adduced we declared Beach, not only to be unequivocally insane, but to have descended from a family who were saturated with insanity. We submitted, finally, that in view of all the facts, and as we sent sworn certificates to the Governor from physicians who had treated Beach for insanity, that this was a case where the hand of the law could be at least stayed until the question of sanity or insanity could be settled, one way or the other, by a commission of experts. We forwarded this appeal and our proofs of Beach's insanity to Dr. Joseph Parrish, of Burlington, N. J., the editor of the *American Psychological Journal*, the organ of the American Association for the Protection of the Insane, asking his coöperation and assistance in an effort to save Beach's life, but as we never received any answer, do not know what, if anything, was done to coöperate with us. The Board of Pardons, a body of laymen, were convened by

the Governor to hold a special meeting, at Harrisburg, Pa., February 13, 1885, in behalf of Dr. Beach. After reviewing the case, this body of gentlemen, who, of course, were not competent to decide as to the question of the existence of disease, however high their attainments in other directions, decided not to interfere with the decision of the trial judge, and accordingly did not recommend Beach to executive clemency. The Governor, in spite of our earnest protestations and representations that only a medical commission were capable of determining the prisoner's mental condition, would not further exercise his prerogative to perform a service of the highest importance to society, and in signing Beach's death warrant was responsible for his decision to the conscience and understanding of the community; to every man in society, who has some regard for the triumph of right and the progress of humanity. Beach was hanged on the 12th of February, 1885; a case of chronic delusional insanity from the age of seventeen years. The evidence, as we append it, shows his paternal grandfather to have been insane; one uncle who was insane; two uncles idiotic; a cousin who died insane at Harrisburg, Pa., Asylum; and a maternal uncle who died insane. Dr. Sweeney, of Clearfield, Pa., and Dr. Terry, of Terrytown, Pa., both sent sworn certificates of Beach's insanity.

Dr. Terry wrote us, under date of January 8th, 1885: "Get the Governor to go to Beach himself if you can. I think if he will talk to the doctor a few minutes he can very readily see that he is not all right. If I had time I could get you more than a hundred persons that would tell you that they often thought, by the doctor's actions, that he was not just right by spells. I listened to the evidence, and I know if his trial had been in this county, he would not have had the death sentence passed upon him. Anyone can see, by talking with the doctor a few minutes, that he is not all right, unless he is prejudiced."

Mrs. Frank Beach, his first wife, wrote us, "that while she had always regarded her husband as unquivo-

cally insane, at times, ever since their marriage, that many years of intercourse proved conclusively to her that Beach was incapable of cruelty even under great provocation."

Dr. Sweeney wrote us, December 10th, 1884, as follows: "Will you please inform me what is wanting in Dr. Beach's case; one thing I positively know and assert, that he is and has been insane, and of that point I have not a doubt and can adduce positive testimony."

Dr. Beach's father wrote us as follows: "He (Beach) had three uncles that were imbecile or insane, and his grandfather was insane on religious matters, and an uncle on his mother's side was insane in religion, and three others of his relatives further back that were not right. It seems that he had been attending a series of revival meetings and that he joined the church the day before, and in the evening partook of the sacrament, and the next morning committed the act."

The act was the outcome of an hallucination of sight. Beach's wife seemed to him an immense snake that was about to attack him, and he had an imperative conception to cut off its head, which he thought he was doing when he killed her. The following is the evidence given on the defense in the case:

The Court on the Beach case was called September 3rd, 1884, all the judges on the bench. The defendant sat with the same stoical indifference that characterized him during the trial. Geo. T. Beach, a cousin of the doctor, testified of the doctor's sickness and insanity at the age of seventeen and eighteen, as indicated by his peculiarities of mind and action, also as to insanity in the family. L. L. Beach, the doctor's father, was called and testified that, in 1858, the doctor was insane; that he had delusions; testified his father (the doctor's grandfather) was an insane man; testified that he had three brothers (the doctor's uncles): the eldest was Stephen, he was insane; the second was Josiah, "he was regarded as without mind, he was an idiot and was so regarded by the family; the third brother, Charles, is idiotic and so

regarded; testified that he had a sister, Ann (the doctor's aunt), who had an insane son, who died in the Asylum at Harrisburg. Testified that he married Jane Grace, she had a brother, Ambrose, who became insane; there was another boy in that family who was idiotic or insane.

Mrs. L. U. Beach, the prisoner's wife, sworn and testified that, in 1865, she observed an attack of insanity, she said: "I might almost as well attempt to describe the showers of summer as to describe his frequent freaks of insanity." Dr. D. H. Sweeney, of Clearfield County, testified that he treated Dr. Beach for insanity. Miss Mary Sweeney, Dr. Sweeney's daughter, testified that she had seen the doctor incoherent and insane at times. That these attacks always commenced with religious depression. Numerous other witnesses testified as to Dr. Beach's insanity and the hereditary insanity in the Beach family.

Finally, we regret exceedingly that in this case the chief magistrate of this commonwealth lost the opportunity of earning laurels in the science of humanity. My late kinsman, Horace Mann, declared that the insane poor are the wards of the State. The State of Pennsylvania, in this case, did not seem to regard that such a relation entitled her insane poor to a consideration to be measured only by an active, intelligent, liberal humanity; and it is this that we plead for and in behalf of the insane who are at any time on trial for their lives. The insane poor are no more subjects for penal discipline than are the insane rich. In the name of humanity let the National Association for the Protection of the Insane, if it proposes to do any practical work, rise up and put an end to practices that would shock even a barbarous people. Let them make an appeal which shall be followed in every State by an Act establishing State Lunacy Commissions, like those in Great Britain, which places rich and poor, on a similar footing, when insanity is needing protection.

SUNNYSIDE HOME FOR NERVOUS INVALIDS,
204 Lefferts Place, Brooklyn.

Cerebral Lesions in the Chronic Insane.

By H. E. ALLISON, M. D., Willard, New York.

THE pathological changes produced by disease are always attractive and of interest, inasmuch as it is by study of them during their various stages of progress, that we are enabled to gain our knowledge of their causes and characters, to adopt measures of a preventive or remedial nature, and to predict with some certainty their course and final result. The activity of the disease may be very great, and its outward manifestations very evident, yet the recuperative powers of nature are so strong that, unless the process continues for some length of time, the patient may recover and all traces of disease be effaced.

Many disturbances are functional in their nature and often unattended with any demonstrable deterioration of structure. The great majority of diseases, however, are marked by organic changes, regular in sequence, and leading, by slight gradations and alterations, to the gravest lesions. Their courses may be arrested at any point of their progress, and, consequently, the changes produced thereby have the widest range of variance. Obviously, however, these conditions will be more pronounced, and the departures from the normal types greatest in those organs subjected to chronic disease. The initiative steps of a disorder are often obscure and are only revealed to us in the light of the ultimate changes produced. Nature's processes must be unraveled, and it is by proper inductions, from a great array of carefully observed facts, that we shall be able to enlarge the field of our knowledge and to narrow the boundaries of the uncertain.

The history of researches, in all forms of disease, and in all branches of the natural sciences, show that we

have proceeded from the study of grossly evident appearances to those more minute, until the microscope and other delicate instruments of precision are called to our aid. Much can be learned, however, from the more tangible forms of disorder arising from disease, and every contribution of fact to the subject, though the matter may be crude, is of value and importance. And especially is this true of the brain, the most highly organized organ of all, the seat of intelligence, and thought, and of mind, and presiding over and governing all the actions of the body; yet, physical in its composition, nourished by the same blood, carried by like blood-vessels, and having in its composition many of the same elements that are found elsewhere in the body, and subject to the same changes of disease.

From examination of the brains of those who have died in a state of chronic insanity, I have become impressed with the frequency and the extent of the morbid changes found. This is especially evident in the greater number of those, who have remained insane for any prolonged period of time, in whom the gradual and extended progress of disease has produced changes that at last become visible and well marked at the autopsy. It is from the study and classification of these altered conditions, in the brains of the chronic insane, that we shall probably derive a large share of our knowledge of the physical causes of insanity. A knowledge which, by its unfoldings, may partially disclose to us other more subtle and hidden sources of mental disease.

These final structural alterations are the more pronounced for the reason that in the brains of those who have long been insane the disease has reached its maximum intensity, or is still progressing, at the time death takes place, or else the activity of the process having ceased, the scars of its action, to a greater or less extent, remain. We recognize the fact that mental disease of long duration offers little hope of cure, as these changes have become fixed and, in a certain large

number of cases, organic in their nature. From the observation of the various nervous phenomena produced during life, the localization of their sources, as far as possible in the brain, or cord, and their anatomical and pathological features after death, we shall eventually be able to differentiate more exactly the special nature of many psychical and nervous disorders.

There are probably no fixed and constant pathological conditions, in unvarying connection with every type of insanity, as the forms of mental alienation are now named and recognized; but to some degree a classification, depending upon brain lesions, has already been made, and, although this may not become the sole basis of distinction, its bounds will be enlarged in the future. While it is not true that we can determine before death, or after, the nature of these changes in all cases, neither is it true that insanity is a disease, so evanescent and ethereal in character, as to always leave no trace, or traces, so slight, as to be entirely microscopical, of its destructive action upon brains long affected by mental disorder. Aside from diseases, naturally incident to its coverings and envelopes, from traumatism and constitutional disease, undoubtedly, the excessive functional use of the brain leads to alterations of structure, which eventually become more, or less, evident to view, and which are often capable of being demonstrated.

The following brief analysis, of thirty-three cases, illustrates the various conditions found in them. In nine cases the brain is recorded as exhibiting no noticeable change from a healthy structure. The remaining twenty-four are herewith presented:

I. Female, aged 45. Epilepsy of chronic duration. A hard fibrous tumor, of the size of a hen's egg, found occupying the sella Turcica. Immediate cause of death, epilepsy.

II. Male, aged 63. Melancholia of more than three years' duration. Calvarium roughened on inner surface and these erosions communicated with several dark-colored,

soft and spongy tumors on the external surface of the skull. Visceral layer of dura mater and also the pia granular and covered with starch-like exudation. Brain substance softened and hyperæmic, with extremely lax and contorted vessels. Cause of death, phthisis pulmonalis.

Male, aged 61. Terminal dementia of unknown duration. Subarachnoidean space distended, with serous effusion and vessels much injected. Clot of the size of a large marble found in the anterior perforated space, with extensive softening around for two inches, involving the optic thalamus, a portion of the corpus striatum, and extending into the right cerebral substance. Cause of death, cerebral apoplexy and organic disease of brain.

IV. Female, aged 42. Epilepsy of six years' duration. Dura mater extremely adherent. All the convexity covered with a layer of yellow, creamy pus, especially over frontal lobes. The inner surface of the dura mater, in the middle fossa of the right side, and also the tentorium were lined with pus. Cause of death, cerebral meningitis.

V. Female, aged 45. Terminal dementia; duration unknown. Upon removing the calvarium the whole surface of the convexity was seen covered with a thin, glistening, velvet-black clot, compressing especially the anterior lobes. Left frontal lobe softened and broken down and intermingled with blood. Cause of death, cerebral apoplexy.

VI. Male, aged 39. Terminal dementia; duration unknown. Surface of brain covered with thick, white, flocculent exudation. Serous effusion mingled with flocculi distended all the cavities and escaped in large quantities when the skull was opened. Cause of death, serous effusion.

VII. Female, aged 45. Paresis; duration more than three years. Arachnoid thickened and opaque over pia and covered with exudate. At the summit of the right parietal ascending convolution there was an atrophied area in which the convolutions were nearly entirely wasted. The gray matter was hyperæmic and formed

two vividly distinct bands. Cause of death, paresis; died in convulsion.

VIII. Male, aged 46. Terminal dementia of more than four years' duration. Much serous effusion. Tissues sodden and infiltrated. Large tumor at base of brain attached to the posterior cerebral artery and lying at the bifurcation of the basilar, to the left of the median line. Extensive diffuent softening surrounded the growth, and the walls of the artery were much thickened and gaped open when cut. Optic thalamus and corpus striatum were softened and nearly indistinguishable. Cause of death, organic brain disease.

IX. Male, aged 46. Paresis of more than four years' duration. Membranes much thickened, arachnoid leathery, especially at base, and optic nerves and chiasm reduced to thin yellowish threads. Cause of death, paresis.

X. Male, aged 67. Chronic mania of more than six years' duration. Marked atrophy of convolutions over wide area at vertex and some effusion. Cause of death, phthisis pulmonalis.

XI. Female, aged 41. Paresis of three years' duration. Convexity covered with dirty layer of clotted blood of uniform hue and thin consistence, and easily washed away. Large clot in left middle fossa. Brain very soft and diffuent. Pia adherent and stripped off with it portions of the cortex. Cause of death, paresis.

XII. Male, aged 54. Mania, of more than one years' duration. Extensive spot of localized softening at the middle of the right calloso-marginal fissure, involving the substance of the hemisphere. Cause of death, exhaustion from mania and organic disease of brain.

XIII. Male, aged 38. Terminal dementia; insanity of more than five years' duration. Right corpus striatum, red vascular, and hardened, and the seat of a new growth that occupied nearly its whole substance. Cause of death, phthisis pulmonalis.

XIV. Male, aged 47. Terminal dementia; insanity of more than eight years' duration. Gunshot wound of head

during the civil war. Frontal bone depressed and a portion of bone missing and its place filled with fibrous tissue. The apex of frontal lobe at the seat of wound was entirely deficient, and the brain substance was replaced by a yellow and soft gelatinous mass of the size of a pigeon's egg. Spot of localized softening found also in the right temporo-sphenoidal region. Cause of death, exhaustion from organic disease of brain.

XV. Male, aged 16. Epilepsy; duration probably from infancy. Multiple, tubercular tumors of the brain, the largest the size of a pigeon's egg with several concentric layers of calcification, and softening of brain about tumors. Cause of death, general tuberculosis.

XVI. Female, aged 51. Terminal dementia. Insanity of unknown duration. Whole visceral layer of dura mater covered with thin film of dark-colored blood and stained. The walls of lateral ventricles attached by strong adhesions: Falx cerebri filled with extensive bony deposits. Cause of death, impaction of gall stone.

XVII. Female, aged 58. Mania of about ten years' duration. Calvarium, five-eighths inch thick and very dense, and dura firmly adherent to bone and to pia; cerebral arteries much hypertrophied and walls thick. Brain weight, thirty-four ounces. Cause of death, paralysis following organic brain disease.

XVIII. Male, aged 16. Congenital epilepsy. The arachnoid was thickened and opaque and the membrane at base of brain covered with extensive miliary deposit. Cerebro spinal fluid in great excess. Convolutions of right frontal lobe showed marked atrophy. Cause of death, exhaustion from epilepsy and general tuberculosis.

XIX. Female, aged 52. Epilepsy of chronic duration. Arteries extensively atheromatous and walls greatly thickened and fleshy and patulous. Hard nodule in right corpus striatum. Several spots of softening of the size of a buckshot scattered through the hemispheres, the remains of former apoplexies. Brain weighed thirty-nine ounces. Cause of death, paralysis, following numerous apoplexies.

XX. Male, aged 36. Paresis of two years' duration. Brain congested and the white matter of a pinkish hue; arachnoid thick; left middle fossa lined with a lamina of clotted blood very soft and friable. Died in a convulsion. Cause of death, paresis. Immediate cause, cerebral apoplexy.

XXI. Male, aged 81. Dementia of more than seven years' duration. Cortex very soft and spot of softening in fourth ventricle. Arteries atheromatous. Middle and posterior fossæ on left side discolored and deeply stained. Cause of death, exhaustion from mental disease.

XXII. Male, aged 63. Dementia of chronic duration. Much cerebro spinal fluid. Dura thickened and adherent and on convexity several spots of atrophy of the size of a filbert appeared, giving the surface of the brain a cystic appearance. Arteries atheromatous and a large aneurism of cerebral artery. Fusiform lobule at the base of occipital lobe entirely destroyed and replaced with tough fibrous tissue, making a large cicatrix. Cause of death, pericarditis.

XXIII. Male, aged 53. Dementia. Insanity of more than two years' duration. Affected with incoördination and almost totally blind. Spots of localized softening in each cerebellar hemisphere and in region of corpora quadrigemina. In these situations the brain was pasty and easily washed away, leaving excavations of the size of a filbert nut. Cause of death, organic disease of the brain.

XXIV. Female, aged 39. Terminal dementia. Insanity of more than twelve years' duration. Dark bluish spot on frontal bone, half an inch in diameter, somewhat softened, and skull greatly thickened around it for a diameter of two inches. Right and left parietal bones softened and a probe could be passed through bone over the area of a spot three inches in diameter. Dura, strongly adherent to these areas and skull roughened. Brain weight, fifty-three ounces. Cause of death, cancer of breast and phthisis pulmonalis.

The various conditions above enumerated are not in every case absolutely pathognomonic of insanity, but occurring in patients who were manifestly incurably insane. It is fair to attribute these cerebral changes to the same causes which produced their diseased mental states. The constant recurrence of lesions of so grave a character in the great majority of chronic cases, indicates how slight a hope of recovery exists when once the process has become definitely settled.

Improvement in mental condition may occur in a certain percentage of cases through the education of the maimed faculties, and an occasional recovery may ensue, but complete restoration is extremely infrequent, and progressive deterioration of mind is common. Upon whatever factors these conclusions are dependent, they are in accord with the observations of those who have had an extended experience with the chronic insane.

On the Functions of the Cerebellum.*

ORAL COMMUNICATIONS TO THE ITALIAN PHRENIATRIC
SOCIETY, SEPTEMBER, 1883.

By PROFESSOR LUCIANI, Italy.

IT IS now about a year and a half since I engaged, *con amore*, on this investigation. I have in the press my first memoir, which will be a sort of introduction to others that I shall publish in succession, and for which I have now in hand a large amount of material. I intend to give, at present, only a general idea of the fundamental results, by tracing out, so to say, the line of direction of these studies. I set about my experimentation of this subject after becoming persuaded, from my acquaintance with the literature devoted to it, that the objective data hitherto furnished in relation to it were quite insufficient for the founding of a truly scientific doctrine of this great nervous centre. And why is it that the physiology of this nervous centre, the cerebellum, has hitherto remained so much farther in the rear than the physiology of the cerebrum? The reason stands in this, that hitherto physiologists have almost always restricted themselves to selection, as the subjects of their experiments on the cerebellum, of animals too far distant from ourselves, such as birds (especially pigeons) and frogs; furthermore, but very few have been the experiments made, even on pigeons, in which the organ has been completely extirpated, and afterwards perfect recovery of the animals has been obtained, so that all the irritative effects, and the inflammation following the severe operative injury having passed off, they could advantageously study the real phenomena of

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the loss of the cerebellum, and those of the cessation of cerebellar innervation.

With the desire of advancing a pace further onward, I have sought to fill in these lacunæ, first of all, by selecting, as the subject of experiment, the dog, which up to this time has been rarely operated on, and then with imperfect results. I have accordingly endeavored to study the effects following the operation on the cerebellum a little more minutely, and by methods possibly less imperfect and more objective than has heretofore been the case.

As I wish to give an idea of the most important of the fundamental results I have yet reached, I desire to relate briefly what I have happened to observe in a small bitch, which, in the past year, I had the good fortune to retain in life for eight months, after almost complete extirpation of the cerebellum. I shall not stop here to describe minutely the process adopted to accomplish this complete extirpation of the cerebellum and to preserve the animal in life, a result not before secured, I will simply say that the whole secret consisted, 1st, in the selection of the animal, which should be robust, in full vigor of nourishment, that is, neither too young nor too old, of a small breed, in order that the operation may be easier and the hemorrhage less; 2nd, in some, special precautions are necessary during the operation; 3rd, in the diligent and assiduous care to overcome the grave inflammatory effects of the injury.

In order to obtain a perfect fixation of the animal during the operation, I had an apparatus of restraint constructed, which is a useful perfecting of those hitherto employed. In the plate, which I present, the animal is seen in the position in which it must be held, after complete narcotization, in order to accomplish the extirpation of the cerebellum. When the animal has been fixed and is immovable, the muscles of the neck are drawn aside and are cut through at their points of attachment in the semicircular line of the

occiput, and, at the distance of some millimeters below the external occipital protuberance, a small trepanning is made, then the opening is enlarged, so that it may be possible to command the middle lobe of the cerebellum; after this, with an appropriate scoop, we proceed to the extirpation of the cerebellum in wide sweeps, so as to avoid, as far as possible, hemorrhage, and also to spare the neighboring organs, especially the bulb.

I am now constrained to give a succinct idea of the phenomena observed in the bitch, from which the entire cerebellum was extirpated, in a single sitting, and which, after a severe illness of at least a month and a half, was perfectly restored, and surmounted all the effects of so very grave a traumatism. In this first period she had three metastatic accesses in different points of the body, but, finally, by very diligent care, together with cleanliness and regular diet—in short, with all those attentions which would be bestowed on an individual of our own race, whom we should feel it our duty to save, I was able to bring about her recovery, and to render her the object of interesting studies.

Besides the local and general inflammatory effects consequent on the operatorial wounds, what had I occasion to observe that might have more especial relation to the absence of the cerebellum, in the first period, which comprehended the diseased state succeeding the extirpation? I had to observe immediately a state of general agitation and inquietude of the animal, to moderate which, and escape intercranial hemorrhage, I was obliged to inject a dose of morphia under the skin and to use ether sprays on the neck. In addition to this agitation the most marked phenomenon was the state of chronic contraction of the fore legs, and that of the muscles of the back and the back of the neck, by which the head and neck were strongly drawn upwards and backwards, and the trunk assumed the form of opisthotonus. The hind limbs did not participate in this contracture, but were, instead, agitated in a clonic form. The contractures of the

fore limbs, and especially of the neck and back, lasted for some days, about ten or twelve. They did not afterwards occur, unless when the animal attempted to rise up, and then they hindered the accomplishment of regular voluntary acts.

These contractures were at first perfectly tonic, but afterwards they began to recede and to assume the character of clonic contractions, which took place every time the animal tried to rise and stand on her feet. Subsequently the character of clonicity was assumed by all the muscles of the body, so that she could make only interrupted movements, and whenever she raised the forepart of her body she fell, and lay now on one side and again on the other, according as she moved with one or the other leg. Finally when the traumatic effects had passed over, when the cicatrizing of the wound was completed, and her nutrient state was restored, she began to make effective attempts to rise and to maintain herself on her feet, in which she at first succeeded but for a little time, because the continual oscillations from before backwards caused her to tumble over, now on one part and now on another. Afterwards she was able to keep up for a longer time, and she commenced to make some paces, but in a little time she would fall; at length this state proceeded constantly to improve, so that she passed over considerable distances before falling.

We thus reach the second period of the phenomena consequent on the extirpation of the cerebellum,—the most important period, because it represents the results of the absolute want of cerebellar innervation, deperated of the effects of the operative traumatism.

In order to give an exact idea of the case, I cannot do better than to relate briefly what we were enabled to observe in this animal on the 2d of July, 1882, when she was presented by me to the Medico-Physical Society of Florence, as follows:—

“The animal does not exhibit any symptoms that reveal any lesion whatever of the sphere of intelligence;

she provides for all her wants, expresses all her feelings, shows an affectionateness that might rather be called exalted than depressed; in fine, her ideation, or the representation of those movements she must accomplish in order to effect certain results, is perfect.

“She shows perfect normality of the different senses in general, including the so-called muscular sense; she sees, hears, tastes, feels the pain of contact, has consciousness of the position of her own members, and reacts against any unsuitable disposition of them that may be imposed on them. The disorders presented by her pertain exclusively to the sphere of the voluntary movements. When she sleeps or remains alone in her house, she lies stretched out on the straw, perfectly quiet and motionless, just as a normal dog; but the moment any person comes and invites her to approach, rapid clonic contractions of different muscles begin, and she rises on her extremities and walks in a *bizarre* characteristic mode, which is most difficult to describe. What specially attracts one’s attention in her walking are the abnormal abduction of all her legs, the accomplishment of each step effected by discontinuous movements, rapid and sometimes very vibratory shakes; the unfixeness of the vertebral column, which is now curved to one and then by the other side, with the upward convexity resembling that of a threatening cat. Finally, her frequent fallings to one or the other side are due rather to *unforeseen muscular relaxations*, than to abnormal postures. These anomalies in her manner of walking, in their *ensemble*, give us an indescribable strange impression. But despite these anomalies in her locomotion, it is a most noteworthy fact that when she is thrown into a pond she is able to swim perfectly, with well coordinated movements of the limbs, so as not to be distinguished from a sound dog, unless perhaps by the greater slowness in her approach toward the edge, having arrived at which she makes well directed efforts to land, but they prove inadequate because of the insufficiency of her prehensile strength.”

These phenomena afterwards gradually became less marked, so that she walked a few paces before falling, and then rose up, having perhaps found from experience that by keeping her legs spread outwards the falls became less frequent, or perhaps this improvement resulted from the better nourished state which had now set in. At length, by keeping the limbs wide apart, she avoided falling, but continued always to present discontinuous movements, unsteady and void of normal fusion and physiological measure. This state was protracted through some months, at the least, five, until the last two months of her life, when we began to perceive a falling off in her condition of nutrition, without known cause. This marks the commencement of the third period, characterized by a disease, or an assemblage of morbid disorders, that ended in death; and in these, perhaps, it may be conceded to us to recognize the remote or indirect effects of the want of cerebellar innervation.

The culminating phenomenon of the third period was, as I have said, a progressive falling off of general nutrition, a *dystrophia*, which, in the days immediately preceding death, reached the extreme of *marasmus*. We further observed in the third period a bilateral, suppurating, external otitis, caused—as appeared from the necroscopy—by bits of the straw of her bed, which had abundantly penetrated the auditory canal and had become fixed in the membrane of the tympanum. There were, besides catarrhal conjunctivitis, inflammation of some of the articulations, and eruptions in some regions of the skin; morbid phenomena depending probably on traumatic causes, to which an animal so very ataxic was naturally exposed, and therefore was subject to frequent fallings.

We may now see how to form for ourselves an exact conception of the entire course of this case, and we may endeavor to define and characterise the various phenomena which marked the *three several periods* distinguished by us, in the effects consequent on the cerebellar extirpation.

The first period in which the animal was rendered

unable to accomplish normally any voluntary movement whatever, and could not even stand on her feet, much less walk, may be designated the period of incoördination, provided we understand by this word something more determinate than it was regarded by Flourens; that is to say, as we hold it, "an active impediment (or something independent of paralysis) of the normal succession and association of the muscular movements necessary to accomplish the diverse voluntary acts. And what, gentlemen, was the condition that determined the incoördination of the first period? Not having observed in the animal any appreciable alteration in the sphere of the senses, we may for the present, abstain from seeking at what point the incoördination of the first stage, might depend on vertigo, or sensorial disorders. Without losing ourselves in hypotheses, but keeping to the field of our observances, it seems to us evident that the incoördination may be explained by the fact of the contractures, and, in general, by the abnormal irradiation and the inequable distribution of the innervating force on the diverse groups of muscles, which took place every time the animal wished to accomplish voluntary acts. The marked weakness of the posterior trunk, contrasted with the abnormal activity and energy of the anterior, takes its place in the very order of facts which fittingly explain the incoördination of the first period.

Passing on to the second period, how may we, gentlemen, define that strange and characteristic mode of walking and of acting which we have described? Not desiring to make useless innovations, we may call it—as at other times has been done—"the period of cerebellar ataxia," provided that the word be understood in its genuine sense of a pure and simple disorder in the diverse voluntary movements, but not so grave as to be a complete obstacle to them.

We are now interested in determining the condition which, in our bitch, underlay the characteristic form of ataxia; this, gentlemen, is equivalent to the determining

of the direct consequence of the absence of cerebellar innervation, free of the irritative and phlogistic effects of the operative injury. Here we may promptly exclude not a few hypotheses that have, until now, been enunciated in explanation of cerebellar ataxy.

Did this cerebellar ataxy depend on incapacity to coördinate well the movements? I promptly answer, no; because our bitch, whilst she appeared ataxic in accomplishing the voluntary movements of locomotion, was, on the other hand, able to swim perfectly, with movements very well coördinated. It is, therefore, necessary to find some other condition to explain the ataxy of locomotion. It would not at all depend on the want of the sense of equilibrium (understanding by sense of equilibrium that sum of the special sensations, which is required for the perception of the position of our body and the state of the muscles). If the animal had any sensorial disorder that might have brought about the loss of the sense of equilibrium, or a perturbation of this sense, as vertigo, this would have been perceived more readily in swimming than in walking. For the same reason, and, in addition, because the animal was not unable to accomplish any voluntary movement, the ataxy could not depend on the want of voluntary impulses to motion, a sort of psychical paralysis, as our Rolando probably thought, when regarding the cerebellum as the source of all the voluntary movements.

On what then did the ataxy of our bitch depend? In my opinion, gentlemen, it remains only to think that it depended on the want of tone and of nervous energy necessary for the accomplishment of the common functions of locomotion and the other isolate muscular acts.

In a certain way I think that our bitch oscillated in walking and fell, not because she had not the perfect faculty of coördination and orientation, but from debility, through not having strength to direct normally her own body; whilst in swimming, by losing as much weight as that of the water displaced by her, she was able, with

the little energy at her command, when relieved of so much weight, to accomplish movements so regular as almost not to be distinguished from those of a sound animal.

The clonicity, the want of fusion in the movements, point to a basis of general debility, which we may call asthenia. So that, briefly summarizing our idea, we may say that the cerebellar ataxia depended on asthenia, and, consequently, that the immediate and direct effect of the lost cerebellar innervation was exactly this asthenia, characterized by that particular form of ataxia, which consists in loss of tone, of physiological fusion, and of normal measure and energy, in the common muscular acts of animal life.

Desiring, finally, to allude to the phenomena of the third period, which are certainly the most obscure and the most deserving of further illustration and research, I shall limit myself to the expression of the opinion, that the progressive denutrition which characterized it, and from which it might be defined as the period of "cerebellar dystrophia," may represent the remote, or indirect condition of the lost innervation of the cerebellum, and, consequently, this great nervous centre has probably also a high indirect dominion in the trophic functions of vegetative life.

Having now briefly indicated the fundamental ideas at which we have arrived, I must not omit to say that the autopsy of our bitch assured us that almost the entire cerebellum had been extirpated, and I have here the anatomical piece which you can observe minutely. I have also had an engraving of it made, in which it is seen that there remains only two stumps of the peduncular fascies, and two more lateral portions, but very circumscribed, of cerebellar texture, corresponding to the so-called *flocculum*, which are, from their situation, inaccessible to extirpation. I have therefore obtained all that could be desired, with the view of completely abolishing the cerebellar functions.

After this excellent result, I was greatly encouraged to continue these studies, and I repeated and varied on a second dog the experiment; then on a third, on a fourth, and so on; so that I have been already enabled to accumulate a good fund of scientific material that is valuable in confirming the fundamental ideas I have here exposed, and in bringing into light many other new facts and important conceptions. Among the animals on whose cerebella I operated, I have selected a bitch that seemed to me, from several points of view, very interesting; and I have brought her with me to this congress that she may be diligently examined by you, and then (if it is deemed expedient) subjected to post-mortem examination.

This bitch has undergone, in three periods of time, distant from each other, three successive operations: On June 1st of the past year she underwent extirpation of the right half of the cerebellum; on the 9th of October of the same year electric and mechanical excitation, and afterwards profound extirpation of the two sigmoid gyri of the cerebrum; lastly on the 2d of May of the present year extirpation of the remaining left half of the cerebellum.

I shall speak briefly of the effects of each of these three operations, in order that I may then dwell more minutely on the description of the present state of the animal.

The phenomena following the extirpation of the first half of the cerebellum are sometimes so trivial and fleeting that after a few weeks, it may be said, not a trace of them remains. Nevertheless, just because the phenomena are fleeting and but little pronounced, I decided to examine them very deliberately, and in order to fix better the lesions of movement observed in the first days, I conceived the idea of making graphic traces of the foot marks of the animal by a very simple method. It sufficed to put into four different vessels four different tints or colors, dissolved; to dip the four limbs of the animal in these respectively, and then cause it to walk, in order to have

on the floor the imprints of the footsteps, according to the course taken by the animal. I now present some specimens of the tracing of the footmarks, reproduced in reduced proportions, so that without descending to a minute examination of them, you may, from a simple glance at them, form an idea of the goodness of the method while observing the essentially different appearance assumed by them, and comparing the traces taken before the extirpation of the cerebellum with those taken after it. Analysis of the traces shows many particularities that completely escape in direct observation of the animal. I shall simply say that after the extirpation of one-half of the cerebellum, there is, in the first days, a twisting of the vertebral column, and of the head and neck, toward the side operated on; sometimes there is also contracture of the fore leg of the same side, but hardly perceptible; the animal walks obliquely, and raises the fore leg of the side operated on higher from the ground. These phenomena, which were rather slight, gradually disappeared, and after some days not a trace of them remained. On the 9th of October, on the same animal, from which, as I have before stated, I had removed the right half of the cerebellum, I laid bare the two sigmoid gyri, and afterwards used electric and mechanical excitation, comparatively right and left, on the known motor centres of the limbs. Well, what were the results? Both the electric and the mechanical excitation, comparatively on the right and left, gave sensibly equal results; that is, the reaction of the right or of the left limbs, according as the excitation was on the right or the left showed no appreciable difference. This result (be it said incidentally) completes what had been observed before me, by the distinguished Dr. Bianchi, of Naples, who was, however, placed in conditions somewhat different, inasmuch, as after the incomplete extirpation and destruction, but sufficiently extensive, not of one-half but of the whole of the cerebellum, he tested the action of the cortical centres. I add another important particular: I was pre-occupied in

determining whether the effects of the excitations were equal, or different, under comparative excitation of the centres for the limbs of the side opposite to that of the cerebellar hemiextirpation, and of those on the same side, rather than with observing the efficacy of the excitation of the cortical centres, after the cerebellar mutilation (which might already be inferred *a priori*, on the support of other known facts). The result obtained demonstrates, not only that the cerebellum is not an organ interposed among the paths of cerebro-spinal conduction, but it also shows that if the cerebellum (as it is not to be doubted) exercises a tonic afferent influence over the other great nervous centres, this influence is diffused in ambilateral direction from each half of the cerebellum. The same conclusion may be drawn from the fact before stated, viz., that the effects of cerebellar hemiextirpation pass away in a short time, so that the animal is not distinguished any longer from a sound one.

After the electric and mechanical excitation of the centres for the limbs, I extirpated deeply the sigmoid gyri on the bitch which I have brought here; and what did I observe different from the ordinary effects seen in animals that have the cerebellum entire? It appeared to me that there was realized a paresis more marked than in animals having the cerebellum entire, because, differently from these, my bitch crossed and bent down the fore legs, and she fell on one side or the other. After these phenomena disappeared there remained a permanent, well marked weakness of both the fore and the hind legs. But I do not desire to insist too strongly on this fact, because it should be verified and controlled by other experiments.

After several months (from October, 1882, till May 2d of this year), I reopened the breach of the cerebellum in order to complete the extirpation; that is, to remove the left half. The operation, to tell the truth, was, despite all the precautions taken, rather a bloody one; the animal was not at all in a state of good nourishment, so that I

was afraid of the result of the experiment: that is to say, I feared she would not survive. But, to my surprise, her state next day was not very serious. I found her moderately depressed, and the phenomena of contracture, which were so violent, after the operation on the first bitch of which I have spoken, were altogether absent in this one. She appeared in a state of agitation; she could not stand firm, and a very marked tendency to bend the vertebral column to the left was perceived. When she was suspended by the back (*sic.*:—? the girth), not only was the torsion of the vertebral column to the left exaggerated, to such a degree as to bring the point of her nose to the end of the tail, but the left fore leg was thrown into strong tonic contracture. This fact is very important, as it repeats the phenomenon of contracture observed in the first case, which was only unilateral. I repeat it is very important, because it shows that in reality the contractures in the *first period* occurred because of the irritation of the peduncular fascies. When extirpation was synchronously made on both sides, as in the first bitch, the peduncular irritation was bilateral and the contractures were also bilateral. In this second bitch, on which the extirpation of the two halves of the cerebellum was made at very distant times, the peduncular irritation, and, therefore, the contracture, occurred only on the left, that is to say, on the side on which the last cerebellar extirpation fell.

The cerebellar mutilation made in the two distinct times, had consequences incomparably less grave than that made at one time. Here, in fact, there were no metastatic accesses, the course of disease was short, and the cicatrization of the wound took place in a few days. When the animal recovered, the contractures and the other acute symptoms had ceased; but as the sigmoid gyri in addition to the cerebellum were wanting, the animal never became able to stand erect or to walk, but the other bitch, in which only the cerebellum was wanting, was able, in the second period, to keep erect and to

walk in the ataxic form described by us. In the present case the animal is forced, in order to proceed from one place to another, to advance with great fatigue, and then she falls down, butting forward, and thus proceeds by the force of her falls. In eating she makes oscillating movements, from before backwards, with the head, as if unable to govern it. But apart from the clonicity and want of tone in all her movements, and the inability to keep erect and walk, our bitch shows no lesion of the intelligence or the senses, with exception of a certain enfeebling of the tactile senses in the extremities, which is a well-known consequence of extirpation of the sigmoid gyri. Most important is the fact that this bitch also, just as the preceding one, is able to swim perfectly, though she is unable to stand up. In swimming, however, it is seen that rather than following a straight line she tends to make turns to the left, because, perhaps, the peduncular fascies has been cut nearer its base. This is the more probable, in as much as the extirpation of the second half of the cerebellum was more easy than that of the first half, for the second half was displaced towards the vacuum left by the previously removed first half.

In these late days I have had occasion to observe in our bitch two new phenomena of much importance. I have found that not only can she swim as a normal animal with open eyes, but even when they are closely covered, so that in this case we cannot appeal to the hypothesis, that the presumed want of the muscular sense and of that of touch is supplied by that of sight.

Another fact, not less important, has been presented lately: On the 5th of September I learned that this bitch was in heat. She presented tumescence of the vulva and a discharge of sanious humor from the vagina, with other signs of marked eroticism. I then procured a male, and with much satisfaction coitus was perfectly accomplished. It was, however, necessary to engage a paranymp, who was not myself, but my servant, who

held up the hinder trunk in order to keep her upright, otherwise the act could not have been accomplished. This process was repeated frequently for several days, so that I believe she is now pregnant. This gives the finishing blow to the doctrine of Gall, which yet has its supporters.

But what is presented by this animal of greater importance, from a physiological point of view of the cerebellum is that, differing from the first bitch, she cannot keep erect or walk. This fact appears to me to present a two-fold interest. In the first place it renders it fully evident that the fundamental function of the cerebellum is not the coördination of movements, and it shows us that the cerebellum is a tonic centre, or one of continuous tonic action, which gives force and energy to the other centres. The animal cannot stand erect unless when supported, and then only for a little, because the limbs bend under the weight of the body; she succeeds in moving through the water because she has not to support her full weight, the ataxic state of the animal is therefore evident; it is clear that the fundamental condition of the cerebellum is precisely this asthenia, this general debility, or insufficiency of energy. Hence arises the conception that, "the cerebellum may be a central organ of continuous action, on which depend the tone and a great part of the nervous energy disposable by the other centres in general, and especially by the motor elements of the muscles of animal life."

In the second place our case is interesting from the point of view of the doctrine of the cortical centres; for, gentlemen, what is there in this second bitch different from the first? There is no difference unless the absence of the two sigmoid gyri, in which the cerebral centres for the limbs are contained. If, therefore, differently from the first bitch, she has not strength enough to stand up, or to walk, this can depend only on the want of the cortical centres for the limbs. This, of itself, would have produced a persistent paresis of motion and

of the cutaneous sense (however trivially perceptible on superficial observance), and conjoined with the presumably almost complete absence of the cerebellum, it has given, as has resulted in this animal, the impossibility of sustaining herself in an erect position, or of walking. Our case is then important, not alone because it clears up the fundamental function of the cerebellum, but, also, because it gives another proof of the sensorio-motor nature of the cortical centres for the limbs.

Other useful inductions might be drawn from the facts narrated, but as I fear being tiresome, and in truth feel rather tired myself, I halt; not, however, without expressing the wish that of this animal also, the same committee that was nominated yesterday to examine and to report the autopsy of the other dog, presented by me on the occasion of my communication on the mechanical excitement of the cortical centres, will make a minute objective examination and a report of the necroscopic findings. If, however, the committee should believe it very important to leave the animal in life till after parturition, or by studying the phenomena of this third period, to see its natural termination, and to find whether we ought really to recognize in the cerebellum, in addition to the proclaimed coadjuvant action of the other centres, also a distant or indirect tonic action on the trophic functions in general, I have confidence in the judgment of the committee, and in the importance which they will attach to the subject.

Permit me finally to anticipate an objection that even while I have been speaking may have arisen in the minds of some of my audience. You have, it may be objected to me, drawn very important conclusions from the phenomena presented by the bitch operated on, before having in hand the data of the anatomical findings; or would it not have been more prudent to have made the autopsy precede the communication? The question, as you see, is not devoid of speciosity nor of point; but I promptly reply in a few words. Let us suppose that this bitch is

not, as the first was, deprived of the whole of the cerebellum. (I have myself reasons for suspecting that on the right side, in addition to the flocculum, a smaller portion remains). Very well, this discovery will but strengthen all my arguments, for if the incomplete absence of the cerebellum gives such grave phenomena, had the absence been complete, they would have been more grave.

Luciani here closed his remarks, and of course some discussion followed, but only Bianchi, of Naples, ventured to speak, and he merely asked a few questions, to which Luciani gave prompt reply. It was then decided to allow the bitch to continue in life till after whelping, and she was committed to the care of Professor Golgi. The further history of the case will be found in the report of the committee, given in the appendix of the proceedings of the Congress, of which the following is a translation:

FROM THE
LABORATORY OF HISTOLOGY AND GENERAL PATHOLOGY. }
PAVIA, April 6th, 1884.

Meeting of the committee nominated at the Phreniatric Congress of Voghera, for the autopsy of the bitch operated on for extirpation of the cerebellum, by Professor Luciani.

Present, the following members of the Committee: Verga, Golgi, De Giovanni and Zoja, together with Professors Oehl, Majgi and Pellacani, and Doctors Ciniselli, Marchi, Vincenzi, Saccozzi and Tanzi.

In the first place Professor Golgi communicated the results of the experiments made in company with Dr. Ciniselli, in his laboratory of physiology, on Prof. Luciani's bitch.

[NOTE. — This communication contains little or no new facts; it may be designated as a mere formal corroboration of the important facts stated by Luciani. To save space we therefore omit it, and proceed with the final report. — TRANSLATOR.]

Professor Golgi stated that from the day on which the

bitch was placed in his care, she always continued in good condition and increased in weight. He had brought her safely to the end of utero-gestation, and she gave birth to four living puppies, two of which died within two days after birth, probably because they were crushed by the mother, as she was unable to regulate her movements. The brains of these two presented no observable changes; the other two are yet living, and do not present any morbid appearance. During all this time the mother has not ceased to bestow the most diligent care on the puppies, showing affection equal to that usually observed in bitches in normal condition. Her exhibitions of affection extend also to the persons who have the care of her. No new phenomena have been observed, but those mentioned in the Congress have been repeatedly verified.

The commission again examined the bitch, and they observed that the animal, as was observed in the past, does not stand on her feet, she lies always on her right side; in rising she sometimes falls on the left side, but soon turns over to the right. In her movements she presents oscillations, not laterally, but up and down, and sometimes she butts her nose on the ground even when in a state of repose. When she attempts to walk she rises tottering, with the limbs outspread, and soon falls with violence on the right side; if she takes a step she shows the limbs of the right side in adduction and those of the left side in abduction. If she makes any movement, it is effected with incessant and irregular oscillations and sometimes subsultus of the body, in consequence of which she rarely succeeds, because some oscillations, stronger than the others, interrupt the movement, and cause her to fall on the right side. When raised up she cannot maintain equilibrium of the body, because the fore legs hold back rigidly and never flex. When food is presented to her she does not at once mouth it, but appears to be making attempts; she approaches the head to it, and then suddenly withdraws it, in a going and coming way, until she can better lay

hold of it; this movement is sometimes accomplished with singular expedition. De Giovanni thought he saw in the strange deportment of the animal some resemblance to that of persons affected with paralysis agitans. When thrown into a large tank of water she swam marvellously if in a straight line the head inclined to the right; when she was swimming, in changing direction and turning to the left, the body inclined to this side, and if turning to the right it inclined to the right. Sometimes she appears to swim with more liveliness of movement of the anterior trunk; when in doing so she raises the fore part of the body, which emerges from the water, and she falls over on her back; but she very soon regains the normal position and renews her swimming. In all the experiments made on her swimming, she always held the head above the water like a sound dog.

After this the animal was killed with chloroform, and we proceeded with the autopsy, which was made by Professors Golgi and Pellacani.

The weight was 4.900 grams; the body was well nourished, and the adipose tissue was abundant; the muscles of the limbs especially were rather pale. Passing directly to the examination of the cranium, there was found, above the occipital foramen, a dense cicatrix of connective tissue, and on the left a small fistulous sinus, which, however, did not penetrate into the cavity. On the surface of the cranium, in the frontal region, were found two depressions which, according to the notes relating to the history of the bitch, stand over the seat of the sigmoid gyri operated on by Prof. Luciani. On removing the vault of the skull, there were found some adhesions of the dura mater to the cerebral substance in proximity to the depressions; posteriorly on the occipital region, under the skull, there was a mass of yellowish color, which occupied a cavity which we judged to be that left by the removed part; dura mater was cut around and the cerebral hemispheres were liberated. The medulla oblongata was then isolated, and by raising the

brain from its seat and separating it from its natural attachments from behind forwards, we succeeded in isolating and removing the entire encephalic mass, after which, in considering more attentively the seat of the cerebellum, we were confirmed in the pre-announced opinion that the cerebellum was entirely wanting where the above yellowish substance existed. This was not large, but it was abundant, and it was easy to detach and isolate it from the adjacent parts without in the least injuring them. The fourth ventricle was thus completely uncovered, it remained partly encumbered, and we could see the whole seat of the cerebellum, noting on the left a very small tract, or straticle, of the cerebellum of yellowish color, which might be suspected to be cerebellar tissue, but it had not evidently the characters of this structure. On the right there existed instead a small fragment of cerebellar substance of a rectangular form, about a centimeter long, five millimeters broad, and some millimeters thick in the peripheral extremity. At the interior and inferior angle of this rectangle there was seen a small yellowish white prominence of greater consistence than the adjacent parts, and which was found to be the surface of the section of the middle cerebellar peduncle. It was argued that this cerebellar residue belonged to the anterior, internal, medium part of the right lobe.

By microscopic examination in the straticle of yellowish tissue, situate on the left of the floor of the fourth ventricle, no trace of nervous substance was found, the tissue, it might be said, consisted exclusively of connective elements; on the other hand in the bit of tissue situate to the right of the floor of the fourth ventricle, well preserved nervous elements presented having disposition and relations identical with those which are observed in normal cerebellar convolutions.

The autopsy being completed, and the brain sketched by Dr. Saccozzi, it was preserved, together with the spinal cord, for an ulterior examination. The committee and the others present, before separating, gave unani-

mous applause to the brilliant vivisection so fortunately executed by Prof. Luciani, and they confirmed the fact that he had, a year before, really removed the cerebellum, as was stated to have been his intention, and as he declared to have done, stating at the same time that a small portion of it had been left on the right side, as was in reality found to be the case.

Charged with the report,

DR. VITTORIO MARCHI,
Assistant of Histology, at Pavia.

The Recognition of Classes of the Insane in Asylum Construction.*

By W. W. GODDING, M. D., Washington, D. C.

THOSE to whom the State confides the construction of its homes for the dependent classes, notably the insane, have constant need for the prayer:

“Lead us not into temptation.”

Temptation in two opposite directions. On the one hand, of State pride, to build something that shall eclipse all its neighbors; of architecture, to sacrifice comfort to some mediæval *renaissance*; and of ostentation, to lose sight in grand parlors, vaulted ceilings and vast spaces of all that betokens home,—halls which so oppress, by their stateliness, that one ceases to wonder that Marcus Aurelius said:

“*Even in a palace life may be led well.*”

On the other hand is the temptation born of the reaction from palace provision, to see at how low a per capita cost accommodations can be constructed, until there is danger that laudable economy will degenerate into a narrow parsimony, the State setting the example in scant liberality of accommodation, only to be early outstripped in the race of penury by the counties, building gloomy, barn-like receptacles, mere human coops, illustrating the almshouse economy of cheap provision for the chronic insane.

To-day we excuse the inhumanity of such rookeries by saying of their unfortunate inmates, “Anyhow, they are better dead than alive;” yet to-morrow when the change comes to those pitiable lives, even as it came to Elijah in a chariot of fire, somehow a startled community forgets that they are better so, and exclaims,

*Read before the National Conference of Charities and Corrections, at their Twelfth Annual Meeting, at Washington, D. C., June, 1885.

“Another holocaust of horror!” Not in the days of, immuring alone have crimes against humanity been committed in brick and mortar that are not easily atoned.

In view of these frequent conflagrations in asylums, it becomes the first duty of those in authority to call a halt to any economy in construction which fails to afford a practically fire-proof provision for the helpless insane.

With one thousand insane to be provided for at one place, what shall you build? For the purposes of this paper, I shall assume that a stereotyped form of asylum architecture is no longer deemed essential, that an asylum is subject to the same laws of construction as any other building, and shall briefly consider what modifications are desirable to adapt it to different types and conditions of the disease. In assuming the unit of one thousand insane, I have taken for granted that the members of this Conference believe that a State should make provision for all of its insane. I waive the discussion of hospitals for acute cases, and asylums for chronic forms of the disease, the question of homes for boarding them round in the community, of provision by almshouse assignment under State control, or of any of the other ingenious substitutes for great aggregations of lunacy at central foci. I here neither approve or condemn these projects, but assuming that they will be fully discussed by this Conference at some other hour, shall confine myself to the single question of the construction of accommodations suited to the thousand insane persons who would naturally need to be provided for at one center, should a great State enter in earnest upon the work of providing for all of its insane.

Beauty and salubrity of site, abundant water supply, convenient proximity to markets, and ready accessibility for the community who are to be accommodated by it, these are the axioms of asylum construction. I will only suggest that in this land of boundless domain, of homesteads for all, where even the myth of “forty acres and a mule” was based on but a reasonable expectation,

there should be secured for the asylum site not less than one acre for every prospective inmate. Let this be obtained while the land is cheap, if necessary, go where it is so, for there is nothing else so reasonable in price, that will in the end prove so invaluable. Keep it in woodland, keep it in pasture, keep it in anything until you are ready to use it, only keep it—sell your birth-right rather than part with it.

Given a thousand inmates, what shall we build for their accommodation? Whatever we may decide to construct, it must be fire-proof and recognize the distinction of sex. We may pass without comment the executive buildings, the boiler house, the stables, the laundry, the bakery, the kitchen, only advising that they be made distinct buildings rather than basements of any asylum structures; and we may venture to remark of the laundry, in passing, that the conqueror of Mexico did well in burning his ships, and that whoever Cortez-like burns his power-washing machines, will probably find that by so doing he has opened up one of the best avenues of employment for a class of violent female patients of robust health and abounding animal life.

Of one thousand insane gathered at one place in round numbers, five hundred will be males. Of these seven per cent. will require infirmary care; three per cent. will be halt, blind and helpless; five per cent., epileptic; five per cent., convalescent; five per cent., especially dangerous; five per cent., very noisy; five per cent., considerably disturbed; five per cent., depressed and suicidal and ten per cent., careless and untidy in habit. The remaining fifty per cent. will be comparatively quiet, orderly cases, varying in capacity, but all capable of some degree of useful labor. Seven-eighths of the whole number will be chronic cases, but as in our clinical observation we find no constant distinction as to violence, noise, untidiness or other well-marked characteristic to divide the acute from the chronic cases, we have no need to take this into account in considering the construction of their

accommodations. The question of their treatment in distinct establishments is entirely another matter, but not discussed in my twenty minutes, if you please.

Here, then, with our five hundred male insane, are at least eight classes distinct enough to require special provision in building, sufferers demanding bedsteads other than procrustean. I say eight, allowing that the blind and maimed may be properly cared for with the sick and infirm, and that the disturbed class and the very noisy can be provided for in distinct wards of the same building.

Certain fundamental ideas connected with the different classes should be recognized in the construction of accommodations for those classes. With our twenty-five especially dangerous cases, everything else should be subordinate to their security, and for these a distinct building is required. Whenever in this paper the phrase distinct building is used, the advocate of the congregate system will understand one distinct section, the believer in segregation—a separate structure more or less distinct. I believe in the segregate plan, but am taking no part of my time here to argue its merits.

The leading idea then in the construction of this building for dangerous, homicidal lunatics will be that of making them entirely secure; the community is to be protected from irresponsible, homicidal cranks at all hazards. The philanthropist has no call to loosen the necessary restraint on this class; make the glove of silk, but the hand of steel. The most, if not all, of this class should be provided for in single rooms; build them narrow, say seven feet, so that they can never become a provision for two. It is not extravagance to expend at the rate of one thousand dollars per capita in building accommodations for these, for to the dangerous class of the insane belongs whatever of liberal provision is compatible with security. They have not forfeited their right to the sunlight nor the air of heaven, to the vistas of trees nor the rest of green fields. They may be

employed to advantage at work in enclosed grounds. The English do this some times with the happy arrangement of a sunken boundary, which does not cut off the view of the surrounding country like a high wall, while it is equally secure. About the buildings for this class there should be an atmosphere of perfect security, that should be to the inmates like the atmosphere, invisible. The wards should be small, admitting of being thrown together; the fixtures simple and substantial, giving no opportunity for concealment. Guard the windows, but do not narrow them, for to those who are shut from the world, the heavens should be always open.

The twenty-five epileptics require the provision of a separate building with at least two distinct wards, one for the quiet and peaceable, the other for those at times noisy and violent. It is probable that one or two will require to be provided for in the building for the especially dangerous class. The idea to be kept in mind in constructing homes for the epileptic insane is to protect them from injury and separate them from the others. The expense of this provision need not exceed four hundred dollars per patient. The wood-work should be finished smooth, avoiding sharp corners and projections; make the bedsteads low, and if the furniture is leather-covered and padded all the better. Not exceeding one-sixth will require single rooms, of which a part must be strong, perhaps, padded. For the rest an associate dormitory, with a night nurse in charge of the whole to prevent suffocation by turning on the face or other injury in nocturnal attacks. The idea in construction is to avoid, as far as possible, all danger from falling in fits, but if by introducing an open stairway in the dormitory one could so enhance the danger from this as to make the services of a night nurse indispensable, I would recommend that the stairway be built, for there is no direction in which a penurious economy is likely to do more mischief than by taking away this same night nurse of epileptics. The buildings and grounds of the epileptic class while made

pleasant in themselves, should for obvious reasons be somewhat secluded from the sight of other inmates.

The fifty careless and untidy cases will require the service of night nurses almost as much as the epileptics, to cultivate in them habits of neatness. They should also have a distinct building and somewhat secluded grounds. In construction of homes for this class, the end to be kept in view is convenience for their care, with thorough, active ventilation. With the era of fire-proof buildings, why not open fire places as well as open windows? The day room should be on another floor from the dormitory, or at least divided from it by doors that can be closed. This arrangement of distinct day rooms ought not to be confined to this class by any means. Walls, woodwork, furniture and floors should be finished smooth and dressed with shellac or some hard coating that will not absorb. As a disinfectant use soap and water. Hot and cold water should be abundant and of convenient access. Sinks, bath tubs and a soap-stone wash tub with drying facilities should be at hand. The number of single rooms and per capita cost will not differ much from that of the epileptic class.

The twenty-five very noisy and twenty-five disturbed cases will require a large per cent. of single-shuttered rooms, and should also have a separate and secluded building to themselves. The idea prominent in its construction will be the disposal of the surplus product, the noise of this class. Here the folly of third-stories is apparent. Some "thick embowered valley" capable of absorbing its echoes would be a most suitable site for such a building. Next to that, some distant point where it could be so located as to throw most of its noise into stellar space. Such structure would require to be solidly, strongly built, with small wards, and as there are always three or four who "Out-herod Herod" with their racket, so manage the construction that they shall disturb no one but themselves. The expense per capita will be at least five hundred dollars, but the added comfort

to the rest will amply repay the outlay, and when in the progress of a knowledge of the laws of the conservation of energy, science has found out how to convert noise into caloric, something may be saved on the heating apparatus of such a building.

The growing pages and waning minutes warn me how much must be left unsaid. The twenty-five depressed and suicidal ones must have a home constructed with a single eye to their protection. An associate dormitory, a sunny-day room, and over all, day and night, the nurse's eye. Fill the grounds with traps for sunbeams, green-shaded banks with their birds and flowers—

“To comfort man, to whisper hope,
Whene'er his faith is dim;
For who so careth for the flowers
Will much more care for him.”

Build for the twenty-five convalescents, at a distance from all sick sights and crazy sounds, cottage homes, with such arrangements for rest and comfort as shall reproduce of the outside home whatever is most pleasant and home-like. For construction, say five hundred dollars per inmate, and give them a good send off.

The fifteen halt and blind, and the thirty-five sick, feeble and fading lives may occupy distinct departments of the same infirmary building. The leading idea in its construction should be that of Mrs. Lydia Pinkham, “Yours for health.” I would build with ample space and carefully studied heat and ventilation. It should have open fires for winter and awnings from the summer heat; fresh, cheery spaces, with pleasant bay-windows, and single apartments or curtained alcoves for those entering the gates of rest. There should be a culinary department for the preparation of special dishes, provision for medicated, Turkish and other baths, no lack of appliances to soothe or to heal. Securing a dry basement, make the principal hospital ward the first floor above, with unbolted doors tempting to soft lawns and summer roses. The second story should be approached by broad,

easy stairs and an elevator, and there should be inviting seats in a "sky parlor," with its sun baths and winter garden of flowers and birds. There too should be the reading room with books and papers, stereoscopes and games, with pictures on the walls and pleasant landscapes opening away from the windows—a room to rest in. Such provision for healing at a cost of one thousand dollars per capita would befit the almsgiving of a commonwealth.

What remains? The two hundred and fifty comparatively comfortable, reasonably quiet cases, capable of labor, and a varying degree of usefulness. There is no objection to large buildings for this class, nor to third-stories, now we are to build fire-proof structures. Third-stories afford a pleasanter outlook, a fresher breeze in summer, besides lessening the per capita cost of construction. Providing for one-sixth in single rooms, the expense of accommodations for this class should not exceed three hundred dollars an inmate. Classify them according to their tastes and condition, not forgetting to provide at least two wards for one patient each, of the morally insane type—every hospital needs such wards. Have your buildings for indoor industries, with rooms fitted for groups, also for individual workmen, your farm cottages and barrack homes. Don't forget to provide a smoking-room for their solace when the toil of the day is over. Make the plans flexible in their application and beautiful with their simplicity. You are not confined to one style, nor limited as to the numbers under one roof. If architecture in its dotage has gone back to Queen Anne, and there is anything to be said in favor of living in one's front entry, then give them a Queen Anne cottage. If an Italian villa suits your situation and climate and their needs, let them have it. Reproduce in your construction whatever has been shown to be adapted to their wants:

"Whether 'tis found
On Christian or on heathen ground."

Be liberal in the matter of open doors, and when you are

figuring on the number and size of your windows, don't be thinking how you can reduce next winter's coal bills. I am impatient of the men who are no sooner born into God's sunshine than they proceed to wall it out. Let in the sunlight, and with it shall enter health and "angels unawares."

Remember too, when you have clipped the lawn to a uniform velvet and have had the gravel path swept clean of rubbish, that this is their home, and it's no matter if there is a little litter off in that corner where they keep a kind of curiosity shop of their own. If they have grown some smoking tobacco where you thought they were cultivating roses, it is all right. If that dry goods box contains a small pet terrier, let the patient raise him and help keep down the rats. That non-descript structure where he has his rabbits looks as if it might be a joss house—perhaps it is, for ah,

"He prayeth well who loveth well
Both man and bird and beast."

I don't like to see a home with the children too clean and nothing homely. God help your hearts, gentlemen, growing old, if these little disorderly things touch no responsive chord in your sympathies, vibrating back to the time when you were boys.

But my minutes are gone, and, what an oversight! I have left those five hundred female patients out in the cold and have built here not even a tabernacle for their shelter. No matter, for their dwellings and grounds should be entirely distinct, and in the bright new era just now dawning upon hospitals, the female physician comes to the front and she will tell us what to do with them.

What Shall Be Done with the Inebriate?*

By J. L. HALLAM, M. D., Centralia, Ills.

GENTLEMEN:—In accordance with a custom established and practiced from the organization of this society, it becomes my duty to deliver my retiring address; and I assure you, my brethren, that although I feel a pleasure in the performance of this duty, it is not without a fear that I may fail in my effort either to instruct or interest.

The subject I have selected for a few brief remarks is old, yet full of interest to every physician, to our people individually and collectively.

It is the old, old question oft repeated, but never satisfactorily answered. What shall be done with the inebriate?

Although the alienists have pretty clearly defined the mental status of the chronic inebriate, yet their views have not been generally adopted by our profession, and the legal profession, with a few honorable exceptions, still hold to the belief that drunkenness is not a symptom of diseased brain, but a wilful violation of statutory and moral law; and the laity also, especially the religious element, look upon the drunkard as one in whom the Evil One reigns supreme.

The answer to the above question must come clear and emphatic from the medical profession. They alone are able to solve the problem. No fine-spun theories of legal or moral ethics have yet explained that overpowering thirst for alcohol, which is always manifested by the chronic inebriate.

But the most important question to be determined by our profession is this, do the cell changes which occur in

*Retiring Address of the President of the Southern Illinois Medical Association, June 19th, 1885.

the brain of the drunkard become fixed to such a degree as to be transmitted in his offspring? This is the most important field for investigation. The present drunkards will soon pass away; but few live to old age. But the number is increasing from year to year. What, if anything, can be done to arrest this increase?

Notwithstanding prominent alienists, neurologists and physicians, by patient, earnest investigation, have arrived at apparently sound conclusions relative to the hereditary transmission of the drunkard's diathesis, yet more light is required to produce a unanimous belief in its truth, and to convince the legal profession and the people that the chronic inebriate is of unsound mind, and that his offspring does inherit an abnormal nervous diathesis, which may manifest itself in drunkenness, insanity, or some other form of brain disturbance.

Whenever the medical profession are a unit on this grave question, the victory over prejudice, born of ignorance, is assured, and the drunkard will be placed under proper treatment, or the causes which produce the disease will be removed.

There are only two methods of arriving at correct conclusions on any scientific truth; the first is by our own individual investigation; the second, by the investigation of others.

As a general proposition, when the opportunities are favorable, our own individual investigation gives the most satisfactory results. Therefore, I would suggest that each member of this society investigate for himself the subject of inebriety in all its bearing upon the inebriate and his offspring.

The field is wide, the material abundant, the opportunities, unfortunately for humanity, are to be found in every community, and the labor will be comparatively light.

This form of cumulative information will have an important bearing on the future, and may serve as a basis for a more united action.

To illustrate my meaning more fully, permit me to give a few cases which I have studied with little labor and tax upon my time.

A—, an habitual drunkard, died in the prime of life. Two children were born during his inebriety; one died at the age of thirty of apoplexy, and the other is now in an insane asylum.

B— was a periodic inebriate, naturally of good constitution and business qualifications. He had three sons, all temperate and steady in habits while young. One died early of consumption, although there was no family history of the disease on either side. A second died of some obscure disease in which the neurotic element was strongly marked, and the third, at about the age of 45, became a confirmed sot, with strong homicidal tendencies.

C— was for many years a confirmed sot. He had six children, three girls and three boys. Two of the girls, one at twenty-five, the other at fifty, died from disease of the liver. The youngest son had the neurotic temperament strongly marked, was restless, vacillating, easily excited, passionate, and an impulsive drinker. The second, at the age of forty-five, became a periodic drinker, and is now hopelessly bound by an insatiable thirst for intoxicating drink.

D—, a man of good brain, had accumulated a fair competency, and, by slow degrees, had become an inebriate; he had three sons, all nervous and irritable, and subject to uncontrollable fits of anger on the slightest cause. One died early from nervous affection; the second, at the age of thirty, filled a drunkard's grave, and the third is now a hard and constant drinker.

E— had a large family; was one of the finest mechanics I ever knew; of intellectual development far above the average. He early fell a victim to intemperance. Out of a family of nine children, all but the eldest were of low moral and intellectual development; some died early of convulsions; others, still living, are wanderers on

the face of the earth, continually begging for whiskey or the money with which to purchase it.

These are but a few cases taken at random from many of like nature, which have come under my own personal observation during a professional life extending over a period of well nigh forty years.

In taking these five families and comparing them with five families under like circumstances, where there was no drunkenness in their history, direct or remote, the contrast is startling, and worthy of careful study.

If the experience of you, my brethren, harmonizes with that of myself, the question, "What shall be done with the inebriate," is easily solved: either remove the drunkard from the liquor, or place the liquor beyond the reach of the drunkard by the most stringent enactments. The former cannot be done; the latter must be done, if we would escape the opprobrium that we are fast becoming a nation of drunkards.

There is much worthless literature on the subject of intemperance. Many honest but ignorant efforts have been made to reclaim the drunkard. So far, all have signally failed to arrest the onward march of that terrible disease which fills the land with mourning, and our cemeteries with dishonored graves. If relief comes, it must come through our profession. If drunkenness is a disease, let us boldly proclaim it. If the disease of the father is visited upon his children and his children's children, let us write it so plainly that judge and jury, prosecutor and defender, the learned and ignorant, may read and understand.

Gentlemen, in conclusion, I will only add that it is purely in the interest of science and humanity that I have made these suggestions.

The Psychological Aspect of the Case of Lucille Yseult Dudley.

By EDWARD C. MANN, M. D., Brooklyn, New York.

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THE following is the history of the case of Mrs. Lucille Yseult Dudley, who recently shot O'Donovan Rossa with the intention of killing him, imagining that he was the instigator of the dynamite outrages, which startled London recently. We examined the prisoner at the request of counsel for defense, and gave testimony respecting epilepsy, as producing irresponsibility.

Examined Lucille Yseult Dudley in the Tombs, New York, April 24th, 1885. She is a woman suffering from the disease of epilepsy, and also from congenital moral insanity, or, emotional insanity proper. She has a tendency to delusive or insane opinion, and to the creation of morbid or fantastical projects. She is a woman who has been in a more or less of a morbid mental state throughout her life, and was probably insane at the time she shot O'Donovan Rossa. Physical condition good. Memory good. Eyes have an insane expression.

The defense of insanity in this case is made out by most clear and convincing proof, as follows, viz:

We have a case exhibiting an exceptionally quick intelligence and decided power of discrimination, together with a chronic condition of insanity before the crime.

Her condition is the result of heredity, being transmitted from her maternal grandmother, who was a case of suicidal mania. When married she suffered from the strong moral shock of discovering that her supposed husband was really the husband of another woman, *a fact well calculated to induce* insanity in any susceptible woman

of naturally poor or weak mental balance. She immediately separated herself from this man. Her child, whom she loves, dies at the age of three years. Alone, forsaken, deserted, with a family predisposition to madness, suicidal mania now manifests itself and she attempts self-destruction. Is now admitted to Dr. Williams' asylum, in England, where she remains seven months, and is then discharged.

She suffers meanwhile from epilepsy, which is sufficient alone to produce complete irresponsibility. [See evidence given in Nelly Vanderhoof case by Dr. Mann, before Judge Van Brunt, with the latter's charge to the jury.]

Her mental powers had become impaired as the result of epilepsy, and she has the irritable condition of the nervous system produced by epilepsy, and epilepsy has the phase of mental disturbance that prompted the criminal act of shooting Rossa.

During her past life she has been many times under the dominion of that blind fury so frequently exhibited by epileptics, both before, after and between the fits. Her mind was generally so impaired that she was seemingly incapable of controlling the feeblest impulses of passion. She was laboring under a disease which almost inevitably impairs the mind.

She had congenitally feeble moral powers, a moral insensibility and necessarily a proportionate irresponsibility. This congenital deficiency is the result, probably, of imperfect nutrition of the textures of the brain, occurring, perhaps, even during foetal life. Perfect sanity has never, in our opinion, existed, as we do not consider that her brain and nervous system have ever been in a condition that the mental functions of *feeling and knowing, emotion and willing*, have ever been performed in their regular and usual manner.

"Insanity means a state in which one or more of the above named functions is performed in an abnormal manner, or not performed at all, by reason of some disease of the brain or nervous system." [See Stevens' Criminal Law, 1883, Vol. II., pp. 130.]

She is a case of moral insanity or emotional or reasoning madness and epilepsy combined. Such a case is reported at p. 244, Bucknill & Tuke's *Psychological Medicine*, 1879. She as much requires guidance, restraint and treatment as the furious maniac. She is thoroughly unconscious of ever having done anything wrong. Like all other subjects of emotional insanity proper, she cannot control her feelings. There is no delusion. Without epilepsy she would have a condition of the affective power of the mind which is so deficient as to lessen responsibility. Without emotional insanity, she would still remain irresponsible from epilepsy. She has, in her life, exhibited emotional irregularities rather than delusion or hallucination, but has none the less labored under cerebral disease. While she talks quite rationally, she shows by her acts and conduct that she is mentally deranged. She has the condition of emotional insanity, in which the mental disorder is of a sudden and transitory character. The duration of the morbid state is short and its cessation sudden. Her outbursts of maniacal fury and destructive and homicidal impulses are of this nature. She carries within her the active organic influence of a morbid nature, which, although not externally noticeable when disturbed and disordered at the moment of action, turn the scale towards crime.

We come finally to the most important part of this case, viz: the exculpatory effects of the disease of epilepsy and its medico-legal relations. While there is existent among the non-professional medical men a disposition to dispute the existence of emotional insanity proper or moral insanity, there is no well-educated physician in any country who does not know that the disease of epilepsy produces a modified responsibility in all the subjects of said disease.

"The subtle influence of epilepsy is remarkably manifested in the change which takes place in the moral character, either permanently, or during brief periods. In a large number of cases, the actual or comparative sanity

of the patient for considerable intervals of time, the freedom from irascibility, passion or violence, when removed from circumstances calculated to irritate, render it difficult to place such persons under restraint until an act has been committed which necessitates sequestration." [See Bucknill & Tuke's Manual of Psychological Medicine, p. 336.]

Very often the character of the mental disturbance, the paroxysmal gust of passion, the blind fury without an adequate cause, indicate the presence of epileptic insanity, and take the place of epileptic fits. Marked epilepsy is indicated by eccentric acts or a sudden paroxysm of violence, without a distinct epileptic seizure. Unmistakable epileptic fits occur at one period of a patient's life, while at another, maniacal symptoms take their place. When mental symptoms appear to take the place of a fit, there is a transitory epileptic paroxysm. All acts after epileptic fits from vagaries to homicidal actions are automatic, and the patient is irresponsible.

Elaborate and complex actions may be performed while a patient is unconscious. In different cases there are different degrees of recollection, *as in other forms of insanity there may be a motive mixed up with an insane condition.*

There may be motive and calculation in some cases, which, in some rare cases, control the misdeeds of epileptics. *Echeverria* says, "for an alienist it is certain that the victim of a disease which takes away from him all control over himself, even when he remains capable of distinguishing between good and evil, cannot be held responsible for acts which he accomplishes without will, and in an automatic and therefore unconscious manner."

"There is no epilepsy without unconsciousness. Epileptic seizures vary in severity from a simple vertigo scarcely discernable by others, to the most violent convulsive fit, lasting from five minutes to some hours." [Ray, Medical Jurisprudence of Insanity, 5th ed., p. 474.]

"Anger, fright, or any strong moral emotion is very

liable to produce a paroxysm. Epilepsy tends almost invariably to destroy the natural soundness of mind. A direct, though temporary, effect of the epileptic fit is to leave the mind in a morbidly irritable condition, in which the slightest provocation will derange it entirely." [Ray, Med. Jurisprudence, p. 475.]

This is precisely the state that Lucille Yseult Dudley was in when she shot Rossa. She had within a few days had such an attack, and the provocation was the news which arrived from London of the dynamite outrage, of which she imagined Rossa to be the direct instigator. Her criminal act was the result of the morbid irritability which succeeded her epileptic paroxysm.

Previous to this time, *about three weeks*, her friends where she boarded had expressed views as to her irresponsibility. The crime was the result of an abnormal condition of the nervous system.

"In epileptics it is not uncommon to observe attacks of mania which are characterized by a high degree of blind fury and ferocity." [Griesinger, Mental Pathology and Therapeutics, 2d ed., London, 1868, p. 289.]

"During the attack the patient is unconscious, so that his acts, whatever may be their nature, cannot make him liable to legal punishment. The passionate impulse to kill in masked epilepsy is substituted for ordinary epileptic convulsions. Instead of a convulsion of muscles, the patient is seized with a convulsion of ideas." [Responsibility in Mental Diseases, 4th ed., 1881, pp. 66-70.]

"An epileptic convulsion may not occur, but may be represented by sadness, dejection, by sullenness, by ebullitions of rage and ferocity, a *mania transitoria*, signalized by suicide, homicide, and every modification of blind and destructive impulse. The awakening from epileptic stupor may often resolve itself into an outburst of mental derangement, manifested by extreme vehemence, violence and destructiveness." [See Mann's Manual of Psychological Medicine and Allied Nervous Diseases, 1883, p. 306.]

A crime resulting from epileptic psychical phenomena

may be accomplished with comparative deliberation, and as we have before remarked, there may be a motive mixed up with an insane condition.

All epileptics are impressionable and excitable, and epileptic attacks are often replaced by irresistible homicidal tendency. A patient may recognize his impulses as illegal, but irresistible. In epilepsy dreamy mental states and imperative acts appear and disappear with great suddenness. *If the prisoner did premeditate the act and called upon Rossa with the intention of shooting him, that would not prove that she was not insane, or that she could control her insane desire ; on the contrary, it might be a still stronger proof of her insanity, that under the circumstances in which she was placed, she would do an act from the fearful consequences of which it was impossible for her to escape. Every day there are examples in insane asylums of insane persons committing crimes that they have premeditated.* Premeditation is no proof of a person's sanity.

I do not hesitate to declare Lucille Yseult Dudley a woman of unsound mental organization. If she shot Rossa in the manner in which she is said to have done, she shot him while laboring under an insane, epileptiform, uncontrollable impulse, for which she was not responsible, and at the time of the shooting she was not in a condition to realize the nature and quality of the act she was doing, or to know the act was wrong.

Finally, her volitions, impulses and acts have been determined by insanity.

She comes of a stock whose nervous constitution has been vitiated by mental disease.

She has been noticed to display mental infirmities and peculiarities, due both to hereditary transmission and to present mental derangement.

She has not the ability to control mental action, and she has not sufficient mental power to control the sudden impulses of her disordered mind, and she acts under the blind influence of evil impulses, which she can neither regulate or control.

Her act of shooting Rossa was accomplished without an adequate incentive or motive, or in other words, a sane person would not have considered Rossa's conduct as excusing them for killing him.

She has exhibited depression and excitement; moody difficult temper; a habit of unreasonably disregarding ordinary ways, customs and observances; an habitual extravagance of thought and feeling; an inability to appreciate nice moral distinctions, and, finally, she gives way, by reason of epilepsy, to uncontrollable gusts of passion and blind fury. These mental defects are, taken together, unmistakable signs of insanity.

In Conclusion.—Homicide, or assault with intent to kill, is not criminal, in our opinion as a medical expert, if the person by whom it is committed is at the time when he commits it, prevented by any disease affecting his mind from controlling his own conduct, or, as Bucknill prefers to put it, if Lucille Yseult Dudley at the time of the shooting was suffering from "*incapacitating weakness or derangement of mind produced by disease,*" then she was insane, and we consider that she was so suffering.

Hypothetical Questions of Defense.—"Take the case of an individual descended from emfeebled parentage; derived from a race in which insanity was hereditary; the victim from childhood of frequent epileptic seizures, occurring all through infancy and childhood, and later at frequent intervals; who, after months of intense mental agony, emotional disturbance and sleepless nights, struggling with alternate hope and fear concerning the probability of her supposed husband being really the husband of another woman; when finding such to be the case separates from him; whose child dies; who then in despair attempts suicide, and is taken to an insane asylum; whose judgment and mental powers have become impaired; who has become, as the result of disease of the brain, epileptic, irascible, passionate and violent, and who was seen frequently to manifest paroxysms, gusts of passion and blind fury without an adequate

cause; who has been heard to express suicidal and homicidal ideas; acting in an unnatural and irrational manner; who becomes much excited at hearing of outrages to her country, and takes a resolve, and calling upon the man she imagines to be the instigator of said outrages, fires a shot at him; who immediately after the shooting was calm, made no attempt to escape or to deny the shooting; who was careless, unconcerned and unmoved in the midst of intense excitement; and who, during some days prior to the shooting, had taken but little nourishment, and was sleepless, and who had suffered much previous to the shooting from epileptic attacks; was that individual at the time of the shooting, in your judgment, laboring under such a defect of reason as not to know the nature and quality of the act she was doing, and not to know that the act was wrong?"

Answer:—"She was."

We are credibly informed that Mrs. Dudley attempted suicide during the present month of June while in Jefferson Market Prison, and she has freely aired homicidal ideas, even threatening to kill certain public officers, provided she was "hounded" on her trial. She has also expressed the hope that she might be convicted and sent to the penitentiary, "as it would be better for the cause."

The trial commenced in the Court of General Sessions, June 29, 1885. The prosecution put Rossa on the stand to testify, and then commenced a scene rarely seen in any court-room. Mrs. Dudley became very much excited and hurled such an avalanche of invectives and torrent of abuse at the witness, as to upset all order and decorum in the court-room. Two officers were stationed on either side of her, but could not keep her quiet. "Liar," "scoundrel," "assassin," "coward," etc., were frequently interjected by her during his testimony, and she kept up a running fire of scathing remarks during the whole time he staid on the witness stand.

Testimony was introduced showing the prisoner's insanity and incarceration in Hayward's Heath Asylum. in

England. The prisoner then insisted on taking the stand and making a statement, which she did. The writer was then put on the witness stand as the expert for the defense, and testified to the past and present insanity of the prisoner. The jury, after being addressed by the judge, retired, and in five minutes brought in a verdict of not guilty on the ground of insanity.

Notes on the Pathology of Idiocy.

FIRST PAPER.

By A. W. WILMARTH, M. D.,

Assistant Superintendent of the Pennsylvania Institution for Feeble-Minded Children.

WHILE fully conscious that the value of statistics depends on their amplitude, and that the number of cases I have to present in this paper is comparatively small, yet the literature on the pathology of idiocy is meagre; and even these few cases, with their peculiarities of structure, and destruction of tissue by coarse lesion, may be of interest to those who have made a special study of the nervous system and its diseases.

Asymmetry of the Skull.—The characteristic forms accompanying hydrocephalic and microcephalic brains are too well known to require description here. It does not seem probable that slight alterations in the form of the vault, except in cases where they may afford evidence of former violence, can be of any special significance in regard to the soft-yielding brain beneath. Asymmetry of the vault, indeed, with the exceptions noted below, is not very frequent among idiotic and feeble-minded children.

In a considerable percentage of cases, there is found a decided depression just behind and above one ear, usually the right, and occasionally a corresponding depression in the opposite temporal region. Unfortunately, in a large number of these cases, it is difficult to obtain information regarding their birth, but in three of them, we have obtained a reliable history of a difficult forceps delivery. These facts have led us to suspect that the violent localized pressure of these invaluable instruments on the delicate tissue of the foetal brain is not always so harmless as is generally believed.

Our attention has been frequently called to peculiarities about the base of the skull in congenital idiots and imbeciles. These consist principally of projections of the bony prominences beyond their normal limits, particularly the lesser wing of the sphenoid, and the petrous portion of the temporal bone. Less frequently, stenosis of the foramen magnum is found, occurring three times in sixteen cases, two of the three being epileptics. Deformity of the crista galli is very common; it being more pyramidal in form than it usually is, and often bent to the right or left. Perhaps, even more frequently, we find encroachment of the middle and posterior clinoid processes on the pituitary fossa, narrowing and sometimes nearly closing the upper portion of the fossa.

Hypertrophy of the skull has been found in only one case. The skull in some parts of the section measured a full half inch in thickness.

Localized thickening of the membranes with adhesion to the cortex, resulting from former meningitis, or meningo-cerebritis, is of common occurrence. In two cases the entire pia mater was so firmly adherent, that it could not be removed without bringing away a portion of brain substance. Both of these cases were of the lowest grade of intellect.

Brain Weight.—The brains of sixteen idiots and imbeciles were deprived of their membranes (where practicable), dissected, drained for one hour, and then carefully weighed. The average weight was found to be $36\frac{1}{2}$ ozs. In nearly every case the subject was over fifteen years of age. One brain, taken from an idiot boy of very low intelligence, weighed 51 ozs. From its consistence and the preponderance of the medullary substance over the gray, we were led to suspect hypertrophy. One boy of eleven years had a brain weighing only $22\frac{3}{4}$ ozs. A girl of nine years had a brain weight of $25\frac{1}{4}$ ozs. and still another boy, of twenty-two years, was found where the brain weighed $25\frac{1}{2}$ ozs. As a rule, in these sixteen

brains, the weight was directly proportional to the intelligence of the owner. The weight of the cerebellum varied from $3\frac{1}{4}$ to $6\frac{1}{4}$ ozs. In two, where the weight of the organ was $3\frac{1}{2}$ to $3\frac{1}{4}$ ozs., both patients were mute and paralyzed.

In new-born healthy infants the relative weight of the cerebellum and cerebrum is as 1:13 to 1:20. In adults, according to Sharpy and Gray, the relative weight is as 1:8 $\frac{1}{2}$ in the male, and 1:8 $\frac{1}{2}$ in the female. In these sixteen brains, thirteen of which were from male patients, we found the proportion to be 1:7 $\frac{1}{2}$, or counting only those cases which were *known* to be congenital, twelve in number, it was 1:7; making quite a marked contrast between the development of the cerebrum and cerebellum.

Clevenger in an article on the relation of the position of the fissure of Rolando to intelligence lays down this rule: "If the superior arc of the hemisphere, along the longitudinal fissure, be divided in ten equal parts, the distance from the top of the frontal lobe to the superior extremity of the fissure of Rolando will represent six to six and a-half of these parts. In thirty-four hemispheres (seventeen brains) measured by us, these distances bore the average ratio of 5 $\frac{3}{8}$ to 10."

Structural Deficiencies.—In six brains the island of Reil was exposed through defective development of the third frontal convolution; in four cases, on both sides; in two cases, on one side only. This exposure is of considerable extent in two cases, and is most evident at the origin of the perpendicular branch of the fissure of Sylvius.

In eighteen brains, six were found where the cerebrum failed to cover the cerebellum, by from one-eighth to five-eighths of an inch.

In three cases more important structural deficiencies exist, *e. g.*:

CASE I. (15-1119.) *Absence of corpus callosum*—

Sclerosis of right paracentral lobule and of right occipital lobe—Male; age 9; mute; epilepsy.

The brain, on removal, showed a tendency to spread apart, the hemispheres separating from each other. On pulling them apart a fold of membrane was found occupying the usual position of the corpus callosum, through which the fluid of the ventricular cavity could be seen. No trace of a septum lucidum or of a velum interpositum was found. The pillars of the fornix, instead of joining in the median line, passed separately back to their usual termination. The anterior and posterior commissures were normal. Instead of a middle commissure, the two optic thalami were fused together for a space three-eighths of an inch in diameter. On making a transverse section of the hemisphere, a projecting process, one-eighth to one-quarter inch in length, was found on either side in the usual situation of the extremities of the corpus callosum. The gray matter from the gyrus fornicatus was continued along its upper surface and over the end, where it grew thinner and gave place to the ependyma of the ventricle. The child was paralyzed in the left arm and leg. From its habit of moving objects, which it desired to look at, to one side of its face, we were led to suspect left hemianopsia.

CASE II. (7-1180). *Defective corpus callosum.—Malformation of genital organs and heart.—Mute; paralyzed in lower extremities.—Female; age 11.*

The corpus callosum, in this case, consisted of a narrow band, five-eighths inch in width and not over one-twentieth inch thick, occupying the usual situation of the anterior third of the normal commissure. The parts separated rapidly on passing backward, entirely disappearing before the usual position of the posterior curve (genu) was reached. The edges were sharp and thin, and (unlike the preceding case) *not* covered with gray matter. Development must have stopped at an early period of foetal life. The septum lucidum was absent, the velum interpositum

present, but incomplete. The commissures were all present, but small. The pillars of the fornix followed the same course as in the preceding case. No trace of a pineal gland was found. The heart was small, weighing less than two ounces. The tricuspid valve admitted the tip of the little finger only by employing considerable force. The genital organs were peculiar—an enlarged clitoris, nearly an inch in length. A vagina, divided by a longitudinal septum into two nearly equal passages, terminated by a small uterus not over an inch in length. In the upper part of the uterus was a small cavity connected by separate passages, with the two parts of the vagina. The ovaries were of good size, and normal fallopian tubes connected them with the diminutive uterus.

CASE III. *Profound Idiot—Mute—Defective vision—Lack of development in the posterior portions of both hemispheres—Male; age, 20.*

There was no motor or sensory disturbance, that we could detect, in this patient, except defective vision. This was very evident to every one, but the nature and exact extent of this infirmity we were never able to ascertain, owing to his low grade of intelligence. He could certainly see well enough to find his way about without assistance, could recognize people, and see his food. After death, the posterior horns of both lateral ventricles were found dilated, and portions of the brain substance covering them varied from one-eighth to one-fourth inch in thickness, and was soft and wrinkled, exhibiting but little attempt to form convolutions. These portions of undeveloped brain substance embraced the following convolutions: On the left side, the posterior portion of the supramarginal, angular, posterior portion of the superior parietal, and a considerable portion of the second and third temporal gyri. On the right side, the second and third occipital, angular, and the posterior portions of the of supramarginal, and of the first, second and third temporal gyri. The first occipital was well devel-

oped on either side. The cuneus on both sides was very small. The possession of vision to a considerable extent in connection with the non-development of the angular convolution on both sides, would tend to support the theory advanced by the later observers, that the area of vision extends beyond this region and embraces a part or the whole of the occipital lobe.

We have found three cases of lesions of the hemispheres, all epileptic imbeciles. Their descriptions follow:

CASE I. (5-806.) *Progressive paralysis of right arm and leg with aphasia—Epilepsy—Male; age, 16.*

The spasms in this case occurred with considerable regularity at intervals of five days. The paralysis came on very slowly, covering a period of many months. At the time of his death it was complete in his arm, incomplete in the leg, while his vocabulary had diminished to two words, indistinctly pronounced. At the post-mortem examination, two masses of sclerosis were found in the ascending frontal convolution—one at the junction of the lower and middle third; the other, in the upper third of the convolution. The aphasia was probably due to the implication of the fibres from Broca's convolution by the lower mass, as the cortical substance of this gyrus was uninjured. There was no sensory disturbance detected in this patient.

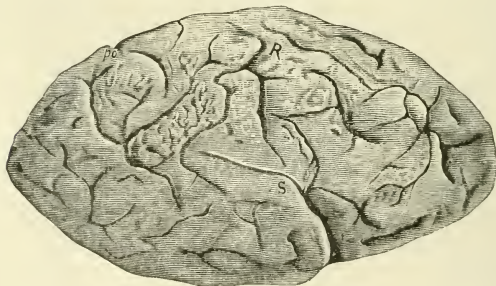
CASE II. (3-612). *Softening of the posterior portion of the superior parietal convolution—No symptoms—Epilepsy.—Male; age 41.*

No disturbance of motor or sensory function during life gave evidence of the existence of this lesion. It was located near the junction of this convolution with the superior occipital.

CASE III. (16-576). *Atrophy of the left hippocampus*

major—Epilepsy—No motor, and, probably, no sensory symptoms—Female; age 22.

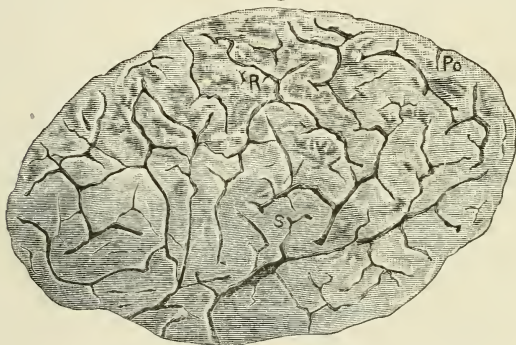
After death, which resulted from a spasm, post-mortem examination revealed atrophy of the left hippocampus major. No accurate examination as to symptoms was made during life. We are sure there was no paralysis. During the last months, with the occurrence of frequent and violent spasms, her memory failed fast. Piano playing, of which she was fond, was gradually given up, not through loss of power to use her fingers, but because she forgot the notes. The same was true of needle-work, in which she was quite expert. She apparently forgot how to do it. To the last she would button a girl's dress neatly and quickly, from which we infer there was no general disturbance of tactile sensation.



(FIGURE 1.—15-1119.)

It is in the arrangement of the convolutions that some of the most striking peculiarities are found. In acquired imbecility, occurring as the result of injury or disease, the arrangement of the convolutions differs but little, if any, from that of the normal brain, but in congenital idiocy and imbecility, particularly where it assumes a very low grade, great differences are often found. Simplicity in the arrangement of the convolutions is the rule, especially in the frontal regions. The convolutions are often coarse, but little convoluted and, comparatively, free from secondary folds. The frontal lobes are also

found narrow and pointed. Another variety, varying in an essential feature from that mentioned above, found only among those suffering from the lowest forms of idiocy, may well be called the atypic brain. In an extreme case of this kind (the brain already mentioned as being without a corpus callosum), the convolutions in some regions bear little resemblance to the usual arrangement in the human brain. On the right side (see fig. 1) the fissure of Sylvius is very short. It passes upward and a little backward, then turns at a sharp angle and passes almost directly backward. The fissure of Rolando is deep and distinct, but the ascending convolutions which bound



(FIGURE 2.—15-1119.)

it are much cut into by secondary fissures. The branches of the ascending portion of the Sylvian fissures are long and deep. The superior frontal gyrus is well marked, but the first frontal convolution sends out four deep radiating branches downward into the second frontal convolution, which cuts it into a series of folds nearly perpendicular in direction. Behind the posterior extremity of the fissure of Sylvius are found two curved fissures. The first, formed by the first temporal fissure, which is continued to the fissure of Rolando. The second, beginning rather further back in the temporal lobe, runs parallel with the first at a distance of about half inch from

it. The remainder of the temporal and parietal lobes are marked by various fissures which follow no definite order of arrangement. The fissures and convolutions of the occipital lobe and those of the median surface vary in no important particular from those of the normal brain. The left hemisphere (see fig. 2) differs from the right in the more definite arrangement of the frontal convolutions, while it resembles it in the short Sylvian fissure. The tendency of the fissures of the parietal and temporal lobes to curve around the posterior extremity of the Sylvian fissure is also seen in this hemisphere, but not to the same extent as in the right. The first temporal is continuous with the horizontal portion of the fissure of Sylvius, while five vertical sulci pass vertically downward through the temporal lobe. In our collection is one other brain (9-741) where two parallel fissures pass from the temporal lobe around the posterior extremity of the fissure of Sylvius. In this brain there is no well-defined ascending frontal gyrus, and the fissure of Rolando, on the left side is crossed by a large bridging convolution. In a third brain, examined by Dr. Mills, of Philadelphia, and taken, like the other two, from an idiot of the lowest grade, the frontal fissures, instead of running horizontally, assume a nearly vertical direction.

Confluence of fissures is a decided feature of idiot brains. Even when confluence is not complete, the tendency of the principal fissures is to cut through separating convolutions; and should I bring into the list below cases when confluence is nearly complete, the number would be largely augmented. In these instances confluence is complete, and the description embraces fifteen brains of children of all grades of imbecility. The fissure of Rolando passed into the fissure of Sylvius, in one brain, on both sides; in another, on one side only. In two other cases they are connected by deep cross fissures. The interparietal fissure has its origin in the fissure of Sylvius in four cases, on both sides; in five, on one side only. The calcarine fissure passes completely across the

gyrus fornicatus on both hemispheres, in two brains; in four brains, on one side only.

In one hemisphere, the superior occipital gyrus sank nearly beneath the surface, the next fold partially covering it, reminding one strongly of the "operculum" of the ape's brain. There also appears in these cases a strong tendency to form an annectant gyri in the upper part of the parieto-occipital fissure, connecting the parietal and occipital lobes. In no less than six, out of thirty hemispheres, were these found more or less complete.

In one case, on both sides; in five cases, on one side, we find the parieto-occipital fissure, instead of appearing as a short fissure on the upper surface of the hemisphere, stretching into the interparietal fissure, cutting in two the superior occipital convolution. Another noticeable feature is the often occurring want of connection between the superior and inferior parietal lobules. In no less than thirteen out of thirty hemispheres examined, the interparietal fissure passed from its origin back to its termination in the transverse occipital fissure, without a single bridging convolution. A tendency of the transverse occipital fissure to approach the external perpendicular is very apparent, but in no case do they coincide.

I have endeavored in these notes to describe such departures from the normal type of brain structure, together with tissue changes resulting from disease, as are readily appreciable to the unaided eye. Where disease has destroyed considerable or important portions of the brain substance, it is not difficult to understand the loss of mental power that may result. But these cases form only a small proportion of those examined. It is difficult to comprehend how, under the lack of the stimulus of healthy action and growth, the brain should exhibit a tendency to assume surface foldings of a type entirely at variance with those of the healthy organ, or again exhibit peculiarities of convolitional development, strongly resembling those of a lower group of the animal kingdom. It seems hardly credible that any slight variance in the

form of the surface foldings of the cerebral cortex should cause any grave mental deficiency. We believe, that while these peculiarities are of interest, associated with mental impairment, that the idea of their being a causal agent to any marked extent, would be difficult to establish, and that careful microscopical study is much more liable to give us positive information regarding the physical changes in the brains of the feeble-minded.

The Relations Between the Symptoms and the Cord-Lesions of Posterior Spinal Sclerosis.*

By E. C. SPITZKA, M. D., New York.

ALTHOUGH more carefully reported cases of tabes dorsalis, supplemented by post-mortem records, are at our disposal, than of any other organic spinal affection, the views entertained by prominent neurologists on the relation between the special symptoms, and the extent and location of the characteristic lesion of this disease, are most contradictory.

Certain of the initial symptoms of tabes dorsalis may, perhaps, never become reducible to any definite morbid process. I need but refer to the fact that visual darkening and attacks of unconsciousness have been observed by Pierret and Leyden with peripheral neuritis, while Grainger Stewart has observed dementia following the same affection; or to the observations by Erb and Seguin of descending optic neuritis with transverse myelitis, to show how remote and mysterious are the effects of peripheral and central disease in the course of contripetal tracts. It is not my intention to discuss the analogous phenomena of tabes dorsalis, but to limit this paper to the relation between the destructive lesion of the cord and of those symptoms which can be fairly attributed to it.

The posterior gray horns, and the posterior white columns, together with their connected fibre systems, are much more complicated in structure and enigmatical as to their relations to the respective roots, than the corresponding systems which are connected with the primary *termini* of the anterior nerve roots. Suffice it to say for the present, that we no longer regard anterior and posterior in the regional anatomy of the cord, as equivalent to motor or centrifugal, and sensory or centripetal

*Read before the American Neurological Association, June, 1885.

in its physiology. The older observers were content in describing the lesion of tabes, to speak of the posterior columns as an entity, and it was—comparatively speaking—a refinement when Leyden discriminated between the lesions of the columns of Clarke and those of the remainder of the gray substance, and when the French school recognized the peculiar limitation of one branch of the ascending affection to the columns of Goll.

The researches of Flechsig, Gudden and their pupils, have demonstrated the existence in the posterior lateral segment of the cord, of a number of previously unknown separate fibre-systems; not all of which—if the results of secondary degeneration are to be regarded as physiological criteria—are necessarily centripetal. Recent observers have, therefore, paid more attention to the accurate recording and delineation of lesions, with respect to the degree of involvement of these newly discovered fibre-systems. A comparison of such cases has furnished me with some suggestions, which I will take the liberty of laying before the association.

It is well-known that in tabes dorsalis, we may have loss of muscular tone without marked ataxia, or marked ataxia without loss of muscular tone; that in some cases there is no proportion between the anæsthesia and the disturbance of coördination; that in others fulminating pains and delayed pain-conduction persist to the last, while in still others, these signs give way to analgesia. Again, we have a predominance of motor ataxia in one group of cases, and of static ataxia in others. You are also aware that the distribution of the lesions in this disease are not uniform, that in some cases, involvement of the column of Goll is an early, in others, a late occurrence; that the direct myelo-cerebellar tract is nearly free in most, and grossly degenerated in a few sufferers from this affection, while special segments of the posterior columns appear to enjoy an almost immunity from the destructive process. Let us see whether there is any constant relation between the variation in prominent symptoms

and the variation in the distribution of the lesions in special nerve tracts. Unfortunately only a minority of the reported cases comply with the requirements of this analysis. Even quite recently a case has been published by Hughes Bennet,* as one of "Locomotor Ataxia without Disease of the Posterior Columns," the author as well as the members of the Clinical Society of London, who discussed it, evidently regarding it as conflicting with the view that the spinal lesion of tabes is responsible for its ataxic symptoms. The latter were—correctly or incorrectly attributed to a sarcomatous involvement of the dorso—lumbar posterior roots. No one present seemed to have been struck by the fact that the medulla oblongata in its "posterior and central" portions was involved by another sarcoma, in a location, which from the observations of Leyden, Senator, Pick, Mayer, and two of my own cases, as well as the careful statistical study of Starr, would be competent to produce most of the sensory and some of the coördination disturbances of tabes dorsalis. (Specimen shown.)

A number of the French records and some of the German ones, which are unaccompanied by illustrations, or insufficiently described, I have been unable to use. The recently reported ones of Vulpian and Camusat have been properly criticised by others as inaccurate, and the older case of Pierret, of which much has been made as relating to the functions of the column of Goll, is fortunately sufficiently well illustrated to prove that other parts of the cord were diseased than those which the reporter considered so.

The cases on which I have based this study are derived from Strümpell, Kahler, Pick, Dèmenge, Hebold, Leyden, Westphal, Babesiu, Takács, Sioli, Wolff, Schultze, Buch, and my own, including one of McBride's, of which I received the specimen from him for this analysis.

Some of these cases were not of tabes, but of secondary degeneration from *cauda equina* compression, pure and

*British Medical Journal, March 7th, 1885, p. 487.

combined forms of so-called "system diseases," and similar lesions complicating pathetic dementia. They were used to illustrate and amplify the differential signs of disease in the same general locality as that occupied by tabes, but isolating (some of them) its systems more exactly than is usually found with the lesion of typical posterior sclerosis.

The initial lesion of this disease is either in the posterior gray horn or in that part of the column of Burdach traversed by the inner division of the posterior roots as they reach the level of entry into the gray substance. The intensity of the primary lesion is probably in proportion to the rapidity of the development of the disease. It certainly must be regarded as distinct from the true secondary degenerations complicating it. The sclerosis of the column of Goll, the analogous changes in the columns of Clarke and of the direct myelo-cerebellar tract exhibit a true system-limitation, one which the so-called root zones or *bandelettes externes* fail to manifest, and am aware that excellent authority* abroad may be cited in favor of the view that the sclerosis of the middle portion of the column of Burdach is a systemic affection. But inasmuch as this part of the posterior column is not made up of fibres of an uninterrupted continuity, it seems difficult to regard it as a system analogous to the pyramid, the myelo-cerebellar or the Goll tracts. There is equally good authority for regarding the disease of the middle area of Burdach's column as a slow sclerotic process; whether it be consecutive to the irritation of degenerating nerve tubes as Ranvier claims, or primarily inflammatory as Rumpff asserts, and which, for syphilitic cases, at least, my own preparations sustain. The trabeculæ of connective tissue, dragged in so to speak with the posterior nerve roots, are particularly dense in the lumbar portion of the cord; it may be for this reason, that the originating morbid influence concentrates its destructive effects in the so-called posterior *processi*

* Struempell, loc. cit.

reticularis. At all events, such is the fact. It is within this area that certain fasciculi of the posterior roots give off both ascending and descending fasciculi; fasciculi which, in transverse lesion of the cord, degenerate for short distances cephalad, and shorter distances caudad. It is reasonable to suppose that this overlapping of ascending and descending root fibres, associated with the presence of an extra amount of connective tissue, imbedded as this fibre maze is in that part of the cord which is furthest removed from its lymphatic emunctories, affords every temptation to the extension of slow inflammatory trouble. We consequently find that the lesion of the "primary field" remains limited to particular segments of the cord for years, and where the affection was of the "ascending" and not of the "simultaneous*" type, invades the next segments above in lesser and lesser intensity. Not so, however, with the consecutive sclerosis of the columns of Goll and Foville. If affected intensely at their caudal portions, these parts are found diseased to nearly the same degree and extent for their entire, or nearly their entire length, following in this respect the true secondary degenerations.† The strongest reasons for regarding the degeneration of the column of Goll in tabes as a true secondary process, due to the cutting off of its nerve supply by the degeneration of the posterior nerve roots or their gray depots, are the following: When the lesion of the primary field is limited to the lower lumbar and sacral part of the cord, the degeneration of the column of Goll is limited to its postero-internal border; when the upper lumbar and lower dorsal segment is involved, the column becomes affected nearly in its entirety, and when the cervical enlargement is profoundly diseased, an area lying just lateral of the column of Goll, and which from

* By "simultaneous" I mean such cases in which the upper extremities are affected simultaneously or nearly so with the lower limbs.

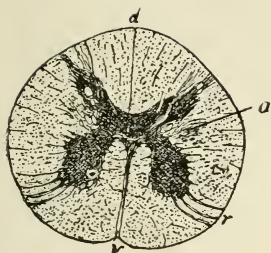
† At present it would be premature to speculate on the reason why there should be no greater difference, histologically, between the lesion of the column of Goll and that of Burdach. One reason why the parenchymatous and secondary forms of degeneration appear to be mingled in the former, seems to me to be that the caudal part of this column is involved in the primary lesion.

its cerebral destination may be regarded as its brachial homologue, presents the same morbid condition. In other words, the projection of the sciatic nerve is in the postero-internal field of Goll's column, that of the crural nerve, more central and lateral in the same column, that of the brachial plexus (and possibly of the dorsal nerves) in the comma-shaped area of Burdach's column, immediately adjoining it.

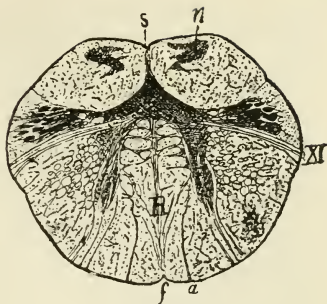
In all advanced cases of tabes the affection of the column of Goll is in direct proportion to the altitude of lesion in the primary field. Symptomatically it bears an equally direct and constant relation to the degree of motor ataxia. With no case of total degeneration of the column of Goll do I find motor coördination of the lower extremities unimpaired, with no case in which there was additional motor ataxia of the arms for any length of time do I fail to find the comma-shaped area of the column of Burdach uninvolved. I consider it scarcely necessary to review the opinion of Strümpell,* that the lesion of the column of Goll is in relation with the bladder disturbances of tabes. In the first place Wolff has found intense degeneration of these columns without bladder disturbance; in the second we have as strong proof as can be advanced, with reference to any spinal fasciculus, that its cerebral continuation is a tract of coördination in the lesions and secondary degenerations of the interolivary layer; in the third it seems to say, the least inharmonious' to attribute so low a function, one of slight metameral field, if I may coin such an expression, to a nerve bundle which has an extensive connection with the supreme nerve centers, and is excelled in diameter by the pyramid tract alone. I may add that the porpoise has no column of Goll, and no nucleus for that column in the oblongata, although it has a urinary bladder. It is its posterior extremities which are eliminated.†

*Arch. f. Psych. XII., Plate I. It is also to be borne in mind that compression of the lower dorsal cord is followed by a more extensive degeneration of the column of Goll, than compression of the *cornus medullaries*.—[SCHULTZE, Arch. f. Psych. XIV., p. 366.

† Reduced to the simplest rudiments



(FIGURE 1.)



(FIGURE 2.)

FIGURE 1.—Trans-section of cervical cord of porpoise showing the diminutive state of the posterior columns, generally speaking, and the absence of a marked column of Goll. *d*, dorsal (posterior) septum; *v*, ventral (anterior) fissure; *r*, anterior or ventral roots; *a*, peculiar fibre field, with small fibres and many connective septa.

FIGURE 2.—Trans-section of caudal part of porpoise's oblongata. *R*, Raphe; *XI*, Accessorius roots; *f*, ventral sulcus in place of interpyramidal fissure; *a*, artery; *s*, dorsal sulcus, the gray border of which may represent the atrophic representative of the nucleus of Goll's column; *n*, the solitary nucleus of the posterior columns, probably representing the nucleus of Burdach's columns.

If the disease of the column of Goll were a primary systemic affection independent of the disease of the root field, it would be difficult to understand why the likelihood of finding a corresponding degeneration of the direct cerebellar tract, increases with the extent to which the former is involved. It is easy, however, to understand this coincidence, when we bear in mind that both are under the trophic dominion of posterior nerve roots.

It is in harmony with this fact that static ataxia is found in advanced, or in originally intense cases of tabes.

Although it be not clearly expressed, the opinion seems to prevail that the column of Goll degenerates in consequence of a low, transverse lesion of the cord. Yet

it is not difficult to recognize a difference between the lesion of a tract which corresponds to the column of Goll in the lumbar cord, and the general disease of the posterior column; in many of the plates, the deeper shade of the triangular field, as some have called it, can be distinctly recognized, though the reporters have not accentuated this feature. In the specimen exhibited, it is very distinct, it corresponds exactly with the ascending degeneration following compression of the *cauda equina*, and also with a field which in a well-preserved fœtal cord, submitted to me by Dr. Chauvean, I found to coincide in its myelinic development with the column of Goll, while the field thus designated—with some reservation—by Flechsig, did not so correspond, and remains singularly free from disease in locomotor ataxia. As illustrating the bearing of the lesion of the column of Goll, on the motor ataxia, I may refer to two cases related in juxtaposition by Strümpell.* As far as the lumbar segment of the cord is concerned, the distribution of the lesion is similar; in the one without marked ataxia, the triangular field was slightly diseased, and there was no upward extension of the lesion in the column of Goll. In the other with marked ataxia, the triangular field was intensely diseased, and ascending degeneration occurred in the sciatic fields of the latter.

In support of the fact that the comma-shaped area in Burdach's columns is homologous with the fibres of the column of Goll, it is to be advanced, that degeneration of this field bears the same relation to symptoms in the distribution of the ulnar nerve that degeneration of the column of Goll bears to sciatic and crural symptoms. Where the initial pains, and subsequent tactile and locomotor disturbance was severe, this field was found affected, and most so in the side where the symptoms had been most intense.† This area has no direct connection with the root fields. Secondly, in primary system disease

*Arch. f. Psych. 737., XII. Cases 1 and 2.

†Friedreich-Schultze's "cured" cases, *Archive fuer Psychiatrie* XII. p. 234.

of the column of Goll, associated with degeneration of the nucleus of the column of Goll,* an irregular encroachment of the column of Burdach was noted. Third, the innermost fibres of the column of Burdach (those belting the nucleus in the oblongata), have the same relation to the interolivary layer, which the column of Goll† has through its provisional nucleus of termination.

While the evidence of high lesion of the cerebral continuation of the column of Goll, and what I regard as its homologue, the comma-shaped area of Burdach, together with the constant association of marked degeneration of these columns, with motor ataxia, is strong positive proof of its relation to this symptom, there is equally strong evidence negating its relation to any other of the prominent symptoms of *tabes dorsalis*. Thus Babesiu‡ found degeneration of the posterior columns, limited to the column of Goll, and the patellar reflex was not destroyed; the root fields at the upper lumbar levels were intact. That the columns of Goll have been found profoundly affected without bladder disturbance has been stated previously, and constitutes a stronger argument against Strümpell's view, than the frequent observation of bladder trouble in spinal diseases with which these columns are entirely free.

Almost the same remarks apply to the relation between static ataxia and the rarer disease of the direct cerebellar tract and the more common affection of the column of Clarke, though the proof is not as ample. The experiments of Woroschiloff and Schiff show that in animals in whom lesion of the pyramid tract is not followed by such profound disturbance as in man, the outer part of these columns have some relation to co-ordination. The cases of *tabes* in which either the columns

*Sioli's cases, *Arch. f. Psych.*

†The corresponding segment of the nucleus of Burdach is connected with the interolivary layer (author's case of Secondary degeneration of the latter). Monakow, who first confirmed experimentally the results of secondary degeneration of the interolivary layer, states (*Neurologisches Centralblatt*, June 15th, 1885,) that on going over his specimens again, he found this part of Burdach's nucleus also affected.

‡Virchow's *Archiv* 76, p. 74.

of Clarke, or their cephalic continuation to tracts of Foville are degenerated, are advanced cases of the disease as a rule, and then as far as ascertainable, both varieties of ataxia were developed. In Friedreich's form of so-called tabes, the myelo-cerebellar tract is more apt to be degenerated, and the ataxia is correspondingly of the static variety, as well as of the motor. In one case of profound degeneration of this tract, the ataxia is described in terms applicable to cerebellar disturbance.* The negative arguments, to which for reasons to be mentioned, less importance attaches, shows that the muscular sense, and visceral functions may be disturbed, the patellar reflex absent, the bladder trouble, anaesthesia and analgesia profound, and yet the columns of Clarke and the tract of Foville be sound; on the other hand, these tracts may be entirely destroyed without affecting the patellar reflex† or the visceral functions.‡ But the valuable case of Senator, in the cephalic continuation of Foville's tract was destroyed on one side, exhibited a disturbance of the space sense analogous to that of cerebellar disease.§ It is the bilateral involvement of this tract, which, I think, renders the cerebellar character of ataxia in advanced tabes so little evident.

The most constant finding, in this analysis, relates to analgesia. Strümpell already noticed that among the divisions of the posterior columns, which presented a peculiar immunity to the pathological process, was an area bordering on the entry line of the posterior roots and the posterior gray horn with one side, and on the periphery of the cord with the other. In a few cases|| this area was profoundly affected. In the ordinary class there were fulgurating pains, hyperæsthesia and delayed pain sense conduction, as in most cases of tabes. In

*Struempell vol. cit.

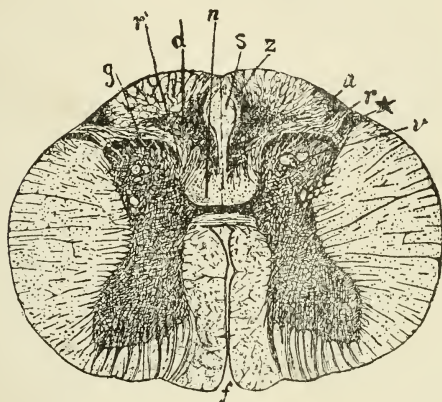
†Struempell, Arch. f. Psych. X. 695.

‡Sioli's Case.

§In addition, the reticular field of the tegmentum was involved, but in that area, which Senator, Wamlecke and Starr consider the tactile strand.

||Case V. of Struempell, loc. cit.; des Arch. f. Psych. XI, p. 56.

the latter class there was complete analgesia. Now, it might be argued against the attributing to this tract of a relation to pain-sense conduction, that, naturally, in the course of a progressive destroying disease, the phenomena of irritation and hampering of a function, will be followed by its abolition. I have, however, here a specimen



(FIGURE 3.)

FIGURE 3.—Trans-section of upper lumbar cord of ataxic patient with early analgesia; *a*, analgesia tract intensely degenerated; *d*, main degeneration of middle part of Burdach's column, strictly speaking, the origin of the column of Goll; *f*, anterior or ventral fissure of cord; *g*, gelatinous head of posterior (dorsal) horn; *n*, field found normal by Strümpell in nearly every case examined, and normal in this specimen; *r*, entry of inner division of posterior roots; *r'*, their defasciculation (so-called root zones) on the opposite side; *s*, the field mistaken by Flechsig for the origin of Goll's columns; it remains normal in tabes. Strümpell represents it as strictly oval—in this case it is elongated ventrad; *z*, zone found comparatively healthy in this case; * peculiar tissue, hitherto not accurately described, and referred to in the text—magnified six diameters.

in which the lesion was remarkably limited; the primary lesion of the root field ceased in the lower dorsal cord,

the ascending degeneration of the column of Goll was limited to the sciatic field (as I have termed it), and barely identifiable in the cervical region. The "analgesia" area is exceptionally diseased, and to a high degree, altogether in disproportion to the disease of the root fields and the gray substance. The patient who had been carefully observed by Doctor McBride, had pronounced analgesia of the lower extremities out of proportion, I think, to the severity of his trouble; generally speaking, he died of intercurrent disease.

The field of the column of Burdach, adjoining the head of the posterior horn with the oblongata is continued in the reticular field of the tegmentum; lesion here produces abolition of the pain and tactile sense on the opposite side of the body. This much may be affirmed from the cases of tabes reported—in no case, in which there was any degree of analgesia, were these parts of Burdach's columns healthy, and in no case, where they were diseased, was the pain-sense preserved.

Strümpell says that this posterior and intermost field is the one from which numerous roots radiate into the posterior cornua. This does not appear to be strictly correct. The outer division of the posterior roots passes into the posterior horn rather directly, the inner division ascends a short distance in the cord, but narrowly hugging the gray substance, so that the field in question really lies meso-dorsad of it.

The symptoms attributed to lesion of the *bandelettes externes* are familiar to all students of Charcot and Westphal's writings; modifying the location of these bands so as to limit their extension to the periphery, it is now generally conceded that the abolition of the patellar jerk is due to this lesion at the upper lumbar level. Tschirjew has shown that the translation of this reflex occurs in one level of the cord, and a distinct fasciculus may be seen coursing from the innermost root fibres toward the antero-intermediate cell.

group of the anterior horn; it furnishes a pictorial substratum, if not anatomical proof, of the physiological observation. The abolition of the tendon-reflexes in the upper extremities ensues with lesion in the corresponding field of the lower part of the cervical enlargement, the exact level not being sufficiently demonstrated by a number of comparable cases. Starr, in his summary,* locates the elbow tendon-reflex in the level between the fifth and sixth cervical roots, and the wrist tendon-reflexes between the sixth and eighth. This is probably correct, as the more remote a motor or sensory periphery of the upper extremity is from the trunk, the lower down will be found its nuclear representative, and that is tantamount to its lower reflex arch.

The observation of Charcot and Pierret that the fulminating pains are due to the irritation of the posterior radicles by the root field lesion seems to be borne out. Indeed, the recent studies on multiple neuritis show how closely the pains produced by an inflammatory affection of the peripheral nerves, anywhere in their course, ape† those which we are inclined to attribute to their intraspinal expansions. At the same time we are confounded by the discovery, by Erb and others, of a phenomenon, which physiologists had based the most far-reaching conclusion on, but under a view which this discovery shows to have been imperfect, I refer to the retardation of pain conduction in lesion of peripheral nerves. It was formerly believed, following the clear dictum of Schiff, that retardation of pain-sense conduction was proportionate to the degree of involvement of the gray substance. The profound atrophy of the gray posterior horn in advanced tabes seemed to justify an application of the experimentally obtained fact to tabes dorsalis. Still one objection to attributing delayed pain-sense conduction to the gray substance existed before Erb called attention to the occurrence of this symptom in peripheral disease. Schiff

*Starr, "The Functions of the Spinal Cord," *American Journal of Neurology and Psychiatry*, August-November, 1884, p. 480.

†Excluding symptoms due to strictly local factors.

found that pain-sense conduction continued, even if very small areas of the gray matter escaped destruction; in tabes there is never total destruction of the gray substance, large areas escaping. Consequently the occurrence of analgesia, preceded by delayed pain-sense conduction, would have—in addition to the assumed lesion of the gray, to be supported by a lesion in the white substance—one intense enough, either to cut off all the centripetal roots or the cephalic conductors.

Immediately adjoining the gelatinous head* of the posterior horn there is a column of vertical fibres, which bears an analogous relation to that exhibited by the ascending root of the fifth pair in connection with the gelatinous substance of the *tuber cinereum* of Rolando. Sclerosis of the ascending trigeminus roots has been found in tabes, and, in such cases,† trophic disturbances were marked; thus in Démange's case, the teeth dropped out off the upper jaw. In other cases, reported without autopsies, ataxia of the facial muscles was found associated with trophic lesions in the trigeminal distribution, and it is to be borne in mind that the facial ataxia was attributed to the affection of this root of the fifth pair. If there be a functional analogy between the fibre systems of homologous location to the supposed trophic (?) root of the trigeminus, we may yet find, in the comparative degree of involvement of this tract, some explanation for the variation in trophic symptoms. I am, from the cases examined, only able to say that where there were no trophic disturbances this tract was healthy, but I also found it unaffected in that class of cutaneous lesions which are directly related to the fulminating pains.

*Notwithstanding Ewald Kuhne's chemical objections, I regard this as ganglionic tissue, its decrease in tabes dorsalis is altogether opposed to its being a supporting substance, for, in this disease, these hypertrophy at the expense of the true nervous elements. Then, too, it is developed best in the highest animals, disappears with evulsion of the peripheral nerves (Meyser), and is developed from the neural epithelium. Recently it has been found that its cephalic extension atrophies when the fifth pair is injured.

†Démange cited by Struempell. Arch. f. Psych., XV., p. 728.

In addition to the "analgesia tract," which is but exceptionally involved in tabes, Strümpell found that a deeply situated area of Burdach's column, bordering on the posterior commissure, and which repeats itself in the brachial and lumbar enlargements, presents a remarkable immunity to the disease process. In a case of Hebold's,* a tumor destroying only this area, from below the pyramid decussation to the upper dorsal limits, was associated with intense gastric crises. In the lumbar cord, it is found free, repeatedly, although absolute analgesia, loss of muscular and tactile sense, and inco-ordination were present. I am not able to affirm anything with regard to its relations to trophic, bladder or sexual symptoms.

I am aware that a number of arguments may be advanced against the establishing of a connection between the lesion of the posterior segment of the cord and locomotor ataxia. Without entering into an analysis of the nature of ataxia, a subject which would more than fill a separate paper, let us see how well founded they are: Westphal† for example says that lesion of these columns will be found much more frequently, when examinations of the cord shall no longer be limited to those cases where disease is suspected from the existence during life of ataxia. He found extensive disease in sufferers from parietic dementia, who did not exhibit the characteristic gait of the tabic patient. But where he could establish the precedence of the organic trouble in the spinal cord, true locomotor ataxia had been present before the insane manifestations exploded. This fact alone seems to prove, that the destruction of cortical control is inimical to the development of typical ataxia. Leyden has expressed an opinion in the same direction, when he attributes the lesser manifestness of locomotor ataxia in the female to the inferior cerebral organization. But a more convincing proof

*Arch. f. Psych., XV., p. 805.

†And in not one out of four well-studied cases did I find sclerosis in parietic dementia corresponding for typical posterior sclerosis, but an irregular affection.

in this line is the fact that in proportion as coincident disease cuts off the centrifugal tracts in a posterior sclerosis, the ataxic symptoms become less palpable. This is a frequent observation with the combined forms of sclerosis.* The beautiful theory of Adamkiewicz,† indeed, assumes locomotor ataxia to be due to a disturbance of the balance which normally exists between the psychomotor tracts and those controlling the muscular tone and reflex excitability. There is another observation which bears in this direction: James, of Boston, observed that absolute deaf mutes in a large percentage of cases are insusceptible to vertigo, or to the allied phenomenon of sea-sickness. Certainly the auditory nerve is a space sense-nerve, in part, its physiological elimination is, however, accompanied by an immunity against a symptom which may be an evidence of disturbed space-sense transmission. In like manner, the destruction of the central perceptive and voluntary centers in the parietic dement, inhibits the legitimate results of posterior spinal sclerosis.

While, as stated, it is not my purpose to analyze the mechanism of ataxia or to enter into the arena of heated and, unfortunately, bitter discussion, between Ross, De Watteville and Althaus, in England; and Erb, Takács and Leyden, in Germany, I would refer to one observation which may serve to aid in the elucidation of its nature.

In a parietic dement, whose disease developed as a true complication of typical tabes, epileptiform convulsions, limited to one side of the body, showed the

*The degeneration of the crossed pyramid tracts in typical tabes seems to be strictly an atrophy from disuse, perhaps facilitated by the general malnutrition of the cord. It is limited to that part supplying the most, or solely, affected extremities. Thus where the lower extremities are alone grossly involved, it is totally degenerated in the lumbar area, and only in its outer parts in higher levels. As if to fortify this comparison, by analogous observations from every great segment of the nervous axis, a similar inhibiting influence of pyramid lesion on co-ordinating disturbance (muscular sense) is noted in secondary degeneration of the interolivary layer; when uncomplicated with pyramid lesion (Mayer, Spitzka,) ataxia is present, when so complicated (Schrader, Homén) it is not observed where determinable.

†Archiv f. Psychiatric, X., 545.

ordinary character, while in the comatose state and coming out of it, the movements of the unaffected side manifested the jerky character of motor ataxia (the convulsed side became paretic). This would seem to show that the coördinatory system of the lower nervous segments is disturbed in tabes. In the face of the experiments of Tarchanoff on the duck, and those on the contralateral sensorial centers of trotting and other animals, it is difficult to deny the cord its own intrinsic coördinating apparatus, and a share—if a subsidiary one—in the development of ataxia symptoms.

With regard to oculo-motor symptoms of tabes, I have but a single observation to make. There are advanced cases without paralysis of the third nerve, with reflex iridoplegia, to the influence of light and preserved accommodation, and where the cervical cord must, from the brachial symptoms, the height of the belt and the existence of crises in viscera of high altitude, be profoundly involved. I have the records of two such cases without an autopsy. They confirm the opinion of Remak,* that the Argyll-Robertson symptom cannot be referred to an affection of the oculo-pupillary fibres in the cervical cord as Rählmann claimed.

With regard to the very symptom which, at an earlier period, was supposed to have a most constant relation to the lesion of the posterior columns, the tactile anæsthesia, the results of this comparative study were least satisfactory. Beyond the confirmation of Strümpell's conclusion, that the columns of Goll, of Clark, and the direct cerebellar tracts, have no connection with tactile transmission of any kind, I am unable to advance propositions. Our knowledge of the tactile strands in the oblongata, although so few well-observed cases of focal lesion are recorded, is far clearer on this head than of the cord, as, after compression, the ascending degeneration in the inner part of the posterior columns occupies an area additional to and continuous with the columns of Goll,

**Archive fuer Psychiatrie*, XII., p. 625.

like an added cork of the bottle-shaped arc of the latter, may lead to some satisfactory conclusion.

In the lumbar cord there is a molecular tissue extending in from the entry groove of the posterior roots and reaching to the gelatinous head of the posterior horn, which embodies spherical nerve cells, and is altered in one case of tabes in my own series. I can find no clear description of this substance anywhere.* Although I am unable to attach any special significance to this finding, yet I venture to hope, that with the improved methods of histological analysis, devised during the past twelve months, attention will be given to this area. It is, from its close relations to the posterior roots, probably of some pathological, if not of intrinsic physiological, importance.

While it must be admitted that the primary lesion of tabes is competent for each affected level of the root zones and gray horns to produce all the characteristic symptoms of tabes, referable to that level, yet in the extent and distribution of the consecutive lesions we have valuable gauges of the extent, severity and duration of the primary disturbance; and we may attribute to the following special disturbances, the ensuing degeneration of the tracts, whose functions are abolished or diminished:—

1st. That of the column of Goll to the disturbance of a muscular sense in the lower extremities.

2d. That of the comma-shaped internal bands of the column of Burdach to the corresponding disturbance in the upper extremities.

3d. That of the triangular area bordering on the periphery of the cord and the posterior root entry, to the severe analgesic development.

4th. That of the column of Clark and direct cerebellar (Foville's) tract to the disturbed space sense.

* It contains spherical — so-called bipolar — nerve cells, sparsely scattered but of large size, and smaller elements of a nervous character.

Report on the Asylum Treatment of the Insane.

By G. C. CATLETT, M. D., St. Joseph, Mo.,

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IN complying with the duty assigned the Committee, to present a report on psychological medicine, the subject of the "Asylum Treatment of the Insane" has been selected, both on account of its appropriateness to the occasion and its intrinsic importance. It ever has been, and yet is to some extent, the common belief of civilized nations and the universal belief of uncivilized nations, that insanity is caused by the influence of immaterial instrumentalities, represented by their superstitious conceptions of the functions and operations of the soul, or of spirits, or of immortal beings, some way associated with our mortal bodies.

The teachings of science, as well as of clinical evidence, by no means corroborate this view of the immaterial dependency or origin of either sound or unsound mental manifestations. But on the contrary, science instructs us that all mental manifestations are energies or forces evolved by, or originate as the result of the functional activity of the cells of the gray nervous matter of the brain, and perhaps, also, of the other similarly constituted nervous ganglia, wherever located in the body. So, also, we are taught to refer all unsound or disordered mental manifestations to some defective, diseased or perverted conditions of the perishable and sensitive elements of the body.

In deference to scientific teaching and supplemental clinical evidence corroborating the belief that mental diseases are of pathological genesis, this report, in speaking of insanity, will ignore the conception that disorders of the mind are of immaterial or of spiritual origin,

and, therefore, will speak of insane persons as we do of other diseased persons, and so shall speak of the treatment of the insane and not of the treatment of insanity. This view marks the similarity and logically corresponds with the teachings of the science and art of general medicine, which administers remedial agents to the individual who is the subject of a malady, and not to the disorder afflicting the person. The theory of the genesis of mental disorders having been explained, the report relating to the treatment of the insane will harmonize with the scientific teachings of the pathology. The phraseology, the asylum treatment of the insane, may convey an erroneous impression, that such treatment differs from proper, wise and scientific treatment pursued by physicians in the treatment of persons afflicted with other diseases. No such impression is intended to be made by the use of the phraseology, as the objects sought to be attained, by the administration of drugs or other agents, is the same, whether administered to correct a physical disorder expressed by cerebral disturbance, or by other organs and functional derangements. Asylums for the insane, being generally constituted legal establishments for the treatment of the insane are, by this official relationship to the public, considered to possess superior facilities and methods of successfully treating the insane; not only so, but it is further believed asylum physicians have special and generally unknown methods of dealing with and treating the insane, which is the real cause of their success in the treatment. To correct any false impressions which may exist upon this subject, and with the hope of exciting increased interest in the profession to investigate it, the report will generalize the asylum treatment of the insane with the candor of scientific plainness.

Is it true that asylum physicians have exceptional knowledge, skill and success in the treatment of the insane, and that they are in the possession of such knowledge and skill to accomplish this success as is not in the possession of the general physician? Is it also true

that asylums fulfill the high standard and expectations that public opinion and their legal status assign to them as the best places for the treatment of the insane? The context of this report must embody the answer to these two propositions. It is not anywhere claimed that the science of medicine is an exact science, nor can such a claim be better maintained for any of its special branches. The department of psychology may enter the contest for this distinction with equal, if not superior, probabilities of success over other branches of general medicine. Neither is it here claimed that alienists have superior knowledge and skill than is possessed by general physicians, who have equal capacities and opportunities of acquiring knowledge and skill. It may, however, be within the bounds of truth to assert that asylum alienists are as intelligent and are as enterprising, in acquiring a knowledge of the science and art of medicine, as the average general practitioner. It is also fair to conclude that he is as honest and as diligent, in the use of his knowledge and skill, as the general physician. And as the claim to the possession of superior and special knowledge and of secret efficient remedies are the expedients of ignorance and dishonesty, asylum physicians cannot be justly charged with such disreputable resorts. The alienist, like all other specialists and general practitioners, acquired the fundamental principles of the science of medicine from the same fountain of knowledge. The application of such knowledge, to the treatment of disease, being guided by their conceptions of the teachings of science, as is supposed to be the rule with all physicians. The real deference between any specialist and a general physician, in knowledge and skill, where a difference does *exist*, consist in the specialist concentrating his intellectual energies upon the acquisition of the attainable knowledge appertaining to his subject, which, being supplemented and tested by large clinical experience, is the touchstone of all real knowledge. He is able to focalize the light of his knowledge upon the dim and obscure recesses of his

subject, making it possible to more nearly attain a solution of the problems involved in the pathology, diagnosis and treatment of disease.

Admitting the current supposition to be true, viz.: that many more cures are effected by asylum treatment of the insane than in home or other places of treatment, it is not here asserted that the results obtained are due to the superior skill and knowledge of the asylum physicians intrusted with their treatment. I am not unconscious that this statement will surprise the general physician and subject me to criticisms from asylum alienists, but I am justified in the assumption from fair conclusions, arrived at from the analysis of the reports of both American and European asylums, relating to the ratio of recoveries to the number of the insane.

There is so little difference in the reported rates of recoveries in the various institutions, that manifestly the methods of medication, by whomsoever applied, has but little to do with influencing the result, so far as to increase or diminish the ratio of recoveries.

It is proper to assume that a majority of asylum physicians, throughout Christendom, are learned and skilled, and are competent to make correct diagnosis and to apply appropriate medication to the insane, and yet the number of recoveries are not materially modified by the different methods of treatment adopted by the various classes of physicians, however famous or obscure, however experienced or inexperienced, competent or incompetent. It is true that in certain instances reports of institutions will show a larger pratio of recoveries than other institution reports, or that the same institution will show at succeeding reports. The difference in success of treatment is not to be attributed to superior skill or methods of treatment, but to the class of insane persons incidently subjected to treatment. In the one case, the increase in number of recoveries resulted from the increased number of curable persons admitted, and in the other, to the increase of incurable persons subjected to treatment. If

the evidence of such statistics are sufficiently reliable and extensive to base conclusions upon, we are brought face to face with the pertinent interrogatories whether our knowledge of therapeutics, applied to the insane, warrant the conclusion that they are restored thereby. The possibilities of therapeutics becoming an exact or an inexact science associated, as it is, with the indeterminable relation of structure and function, and of matter and energy, are not by any means encouraging, notwithstanding it is not the intention to assert that the administration of medicines to diseased persons is not a useful and reliable means of antagonizing disordered and diseased conditions, and of arresting destructive processes and aiding the inherent forces of the organism to resume normal functions and reconstruct organic lesions. The asylum treatment of the insane, as here represented, is intended to present in strong light the supplemental methods to the administration of drugs, which are universally adopted in the treatment of the insane in asylums, and by which it is generally and correctly asserted that the best success is obtained whenever the insane are subjected to hospital treatment, before the pathological conditions causing the disorder are irreparable or become chronic and unchangeable. If it is true that hospital appliances and methods of treatment influence a larger per cent. of recoveries than home or other known methods of treatment, the question is suggested: "What are the characteristic methods, appliances and treatment of asylums upon which their success depends?" Before proceeding to the consideration of hospital treatment of the insane, it is proper to note, for the present purpose only, two classes of insane that are subjects of hospital accommodation, viz.: the curable and the incurable. The treatment of the curable will here be only considered. The latter class, being subjects simply of custodial care, may properly be left in the hands of the humanitarian and political economist, which will afford a field for the exercise of their sympathies and wisdom.

A subdivision of the curable class may also be properly made to include those persons who are usually reported recovered, but who really represent a class of individuals whose mental activities are held in abeyance, and who tend neither to ascend nor to descend in the plain of mental life, and who appear to be inhibited from either physiological progression or pathological retrogression. While hospital treatment is of great benefit to this class, it is not necessary, in considering the value of hospital treatment in the curable class, to include the former. I do not regret that the time allotted to read reports is too limited for any but a generalization of the subject under consideration.

It is almost universally the case in all forms of insanity that the cerebral centers, which preside over the purely intellectual faculties, lose their inhibiting influence over the centers which preside over the emotions, the impulses, and the instincts or lower senses, so that the subject of acute insanity is generally left a prey to the surging waves of the emotions, passions and impulses. His reason is enshrouded; his moral senses are in abeyance; insubordination, intolerance and destructive inclination characterize his changed being. Such an insane person has lost all sense of moral restraint, and defies also all legal responsibility. He is passionate and vicious, suicidal or homicidal, contentious and belligerent, obscene and profane, or desperate and destructive, as the frequency and intensity of the recurring reflexes of exaggerated normal or abnormal sensations occur. These sensations operating upon the excited, unstable, impressible cerebral centers, formulate the delusions which excite into activity the various motor and psychical manifestations above cited. The complications of social necessities, consequent upon the increase of population and the increase of insanity, created an imperative demand for places of restraint where the insane could be subjected to such necessary restraint as would be best calculated to aid in restoring them to health, to protect them from self-

mutilation and injury, and lastly, to insure the public safety.

Asylums with all their appliances, methods and agents for the successful accomplishment of the above named objects are the outgrowth of this demand. The present advanced, successful asylum treatment of the insane had its origin, as has been seen, in the necessity of isolating them in places of safety.

As restraint of the insane is an imperative necessity for their own safety, as well as for the security of the public, so it forms one of the essential means of restoration. By restraint, however, it is not intended to be understood that any single form of coercion of the body by mechanical or other restraining means, or by all coercive means whatsoever of the body, is the only kind of restraint that is considered to possess such beneficial functions. Mechanical restraints or coercive means, when properly used, are resorted to only when all the so-called moral influences have been ineffectually tried. The moral means used, includes every influence that can be made to operate upon the intellectual faculties. The purely moral nature and the sympathies, each and all of these attributes of man's organization, when wisely acted upon, are often efficient restraining and remedial agents. The first mental effect that impresses the mind of the insane, when he approaches the institution for admittance, is both beneficial and, like most first impressions are, very permanent. The lawns surrounding the institution first attract his attention more or less pleasantly. The magnitude of the edifice, the imposing architectural design are suggestive to the insane of the importance of the objects intended to be accomplished by its construction and maintenance. These primary impressions become more deeply impressed upon him when admitted into the institution. The scenes composing the internal arrangements, of the halls, offices and reception rooms, are surprises to the understanding, and often have an effectual restoring influence both over the motor and mental manifestations.

The official attitude of the officers in performing the duty of admitting the insane, the care and attention given to obtain a full history of the person, attracts their attention. The quiet order that pervades the very atmosphere of the business departments, the various arrangements of the same; the prompt execution of orders given to employees, the recognition of official authority; the impressions made by the officers; the impressions of new, strange and unanticipated surroundings; of new scenes, of new and strange persons and associates, are all alike restraining influences and make a lasting impression upon the insane, and often opens the way for concessions to authority and to improved conduct. These restraining influences of first impressions often diminishes the necessity for the use of coercive restraints as substitutes either for the loss of the power of self-control or the wilfull refusal to exercise it. These are the inseparable qualities inherent in the motives for the construction of asylums associated with the various surroundings which exert upon a large per cent. of the insane, who are brought within their control, such ameliorating influences.

There are other provided restraints that constitute efficient agents in asylum treatment of the insane. They may be classed as mechanical, moral and chemical, or preferably, medicinal.

Mechanical restraints may be defined to be any applied force or devised appliance that is calculated to limit or suspend bodily motions. Such as are generally used consist of strong rooms, locked chairs, protective beds, muffs, mittens, wristlets, belts, and the hands of nurses. This is rather a frightful list of coercive instruments and appliances for the restraining treatment of the insane; but far more formidable the thought, to the prospective sick man, is the view of the number of bottles and jars containing the variety of drugs that composes the dispenser's stock, or of the surgeon's formidable collection of instruments, which are used in the various operations of surgery. Fortunately, however, for the afflicted, all the drugs or

the surgical instruments are not indicated, nor can be used in any individual case of disease, but such agents in each condition are selected as may best accomplish the indications for treatment. The various agents used in the treatment of the insane, like the medicinal and surgical remedies, must be left entirely to the judgment of the physician and surgeon. Either may be made the means of salvation or destruction, as they are scientifically and wisely or ignorantly and unwisely used. It is therefore as inhuman and unwise to condemn and prohibit the use of medicines and surgical instruments in our efforts to cure diseases (because remedies may be improperly used), as it is to indiscriminately condemn and prohibit the use of restraints in the treatment of insanity for like reasons.

Pursue this not restraint idea to its logical sequence and the locks and asylum doors would be removed; the doors themselves would be unnecessary restraint; even the necessary rules of propriety and decorum that constitutes and harmonizes social intercourse of the sane, would be considered improper restraint of the insane, however savage or docile his humor. This idea would restrain the nurses and guardians instead of the insane; yea, even put weapons in the hands of the insane to commit suicide and homicide, and lastly would demolish the asylums; and like the savage people of the past and present age, who believe in the supernatural infliction of the insane, are thereby entitled to unlimited freedom to do good or evil as their inspiration dictated. The use of mechanical restraints, in the treatment of the insane has had advocates and opponents coeval with their use.

Their opponents have so far failed to show an equal number of recoveries as the result of any other mode of treatment which excludes mechanical restraints; nor do they pretend that the complications of treatment are diminished or the dangers of self-mutilations, suicide and homicide are not increased. Pseudo-alienists and

philanthropists, who believe it to be their mission to espouse the cause of protecting the rights of the insane, though acting under the impulse of sentiment, which is seldom the unerring path to avoid error, have been the means of inducing a more discriminating use of restraints, just as the (*Hahnemannian*) delusion has contributed to limit the use of drugs to a nearer approach of physiological uses.

The problem of the remedial uses of mechanical restraint in the treatment of the insane is by no means a simple one, and cannot be determined by any conceptions of the subject originating in sentiment, nor by the limited knowledge of the insane possessed by pseudo-scientist or by philanthropist. The environments constituting its complexity are conditions requiring not only profound scientific knowledge, but such wisdom as cultivated experience alone furnishes for its solution. The use of mechanical restraints may be considered as a protective measure against self-injury and destruction, and as a security to the lives and rights of the sane, but the most important use restraints subserve are as remedial agents.

In acute mania the cerebral cells are surcharged with unstable, excitable elements. The intensified effect of each sensation, impression and impulse, is transmitted to the hyperæsthesiac cerebral cells which responds to the excitation with increased alacrity, largely increasing the evolution of the motor and psychical activities. In these acute maniacal states all the high intellectual expressions are inhibited by exalted sensory and emotional activities, so that the individual, being deprived of the use of his perceptive and reasoning capabilities, becomes a dangerous and desperate lunatic in obedience to the dominion of his impulses. In such cases some one of the mechanical restraints—the gloves, wristlets, or camisole—may become valuable and indispensable agents in controlling muscular motion and conserving the vital forces, in limiting psychical excitement and prevent-

ing mental exhaustion, and in diverting cerebral, structural and vascular lesions. In acute mania, also, restraints are often indispensable as a means of self-protection against mutilation and suicide, and as a protection to the person and lives of the guardians and nurses, and, also, to prevent the destruction of property. The restraint chair, likewise, is an invaluable mechanism to protect the insane from self-injury where their impulse to self-destruction is irresistible. It prevents precipitating their bodies upon the floors, their heads against the walls of the rooms; in truth, the chair prevents suicide by any of the accidentally attainable means that it is impossible always to keep out of the possession of the determined and destructive insane. The chair is also a valuable remedial agent in restraining exhausting bodily exertion and motions, thus conserving both the motor and psychical vital forces. It is absolutely necessary, to the safety of the patient, when feeding by the œsophageal or nasal tube becomes necessary. The rest, obtained by the restraint chair, better subserves a number of indications than any other form of restraint. It immediately convinces the restrained that escape from it is impossible, he then ceases to make exhausting efforts to escape and sits in a strength-conserving natural attitude, without restraint upon any motion of the body except locomotion and standing erect. The strong or seclusion room is simply a room without furniture, the walls of which are sometimes padded. It is useful in the treatment of the violent and boisterous and demonstrative insane, who are made more irritable by the presence of other disturbed and annoying patients, and where isolation tends to quiet mental excitement and limits excessive voluntary muscular motion. The protection or restraint bed is a means of more complete restraint to the whole body without restraining the limbs. It is adapted to cases in which it is necessary to limit the motions of the body, and where it is desirable to retain the individual in the recumbent position. The construction of this bed, as well as its uses, has been

greatly misunderstood and as greatly misrepresented; sometimes ignorantly and unintentionally misrepresented, but more often designedly so, in a perverted, sensational, dishonest spirit. The bed is constructed like a child's crib, sufficiently large and comfortable for an adult to occupy in any position that is most comfortable. It has an adjustable cover, or top, which admits of free motion of the entire body and the various motions of all the limbs. Its construction admits of free ventilation and light. In the writer's opinion it is superior to all other forms of restraint for many purposes in the treatment of the curable insane, for the following reasons: It is not oppressive to the body or limbs and is not, therefore, irritating to the body or mind. It admits of ample and normal motions of body and limbs, and relieves the fatigue of prolonged repose in one attitude. It prevents the occupant from maintaining the standing position, from exposing himself to the changes of temperature, and it conserves the vital forces and thus prevents the initiation of retrograde processes. It overcomes the spirit of resistance and to impulses of muscular exertion, and induces, by these quieting and pacific influences, an inclination to physical repose and mental calmness, precedence to natural sleep, "nature's restorer."

A superior agent has yet to be appropriated in the treatment of the insane that will equal the restraint-bed in fulfilling the various dynamical and physiological indications that must be met in the treatment of the violent insane. This report may now properly consider the theory and reasons for the use of mechanical restraint as a curative measure, separate and apart from their protective usefulness.

Mechanical restraints, like other remedial means, when used in the sense of physiological remedies, must assume the attitude of medicinal agents in so far as they have any influence in aiding physiological functions or controlling pathological processes. Therefore the determining influence of restraints over physiological and pathological

processes must depend, like the administration of drugs, upon the inherent virtues they possess, and also upon the wise and scientific adaptation of each agent to the abnormal state capable of restoration to healthy function and structure. It is conceded, that the full powers of the medicinal, chemical and dynamical agents, over functional activities and structural capabilities, is both unknown and unascertainable. Notwithstanding these doubtful problems involving the system of therapy, there are sound physiological reasons to guide the prescriber of restraints in the treatment of the insane. A physiological indication, to be fulfilled by proper restraint of the insane, is the partial or complete control of excessive exhausting voluntary muscular action; thus diminishing the frequency and the force of the heart's action, which directly diminishes also the quantity of blood circulating in the cerebrum. This increased quantity and changed quality of blood, being the bases and support of the cerebral vascular repletion and of the psychical excitation, limiting the supply of blood circulating in the cerebral vessels, greatly diminishes the probabilities of hyperæmia, congestion and the accidents of miliary and other apoplexies and extravasations, which are the result of continued high thermal states and of prolonged increased vascular tension. Restraining and limiting the motor activities conserves the vital forces by substituting rest and inactivity for abnormal restlessness and excessive activity. This induced repose of functional activities and structural vital processes, resembles the physiological repose of voluntary activities and of functional actions accompanying normal sleep, universally known to be eminently conservative and restorative of structure and function.

If the limits of this report permitted, a further profitable elaboration of the subject could be made, but perhaps sufficient has been reported to indicate that the practice is in conformity to scientific teachings, and in harmony with physiological functions, and is antagonistical to pathological processes. Clinical experience certainly not

only justifies the practice, but endorses its continuance as the treatment that offers the greatest probabilities of successful results.

We may now proceed to consider the moral treatment of the insane. It is not intended to convey the impression by the term moral treatment, that ethical instruction is given with the object of impressing a knowledge of a proper conception of the principles that should govern man's conduct; on the contrary, the term is intended to include any salutary restorative influence that can be exerted through any of the senses or other paths leading to the intellect as a whole, or to any one of the faculties, either of a purely intellectual nature, or of the so-called moral nature, or of both combined. I am prepared to admit, that there is a grain of truth in the common belief that the insane can be, to some extent, controlled and influenced by the mental or will-power of sane persons. This, at least, has been my clinical experience. Common assertion claims, for the possession of this power—the capacity to exert a controlling influence over both the minds of the sane and the insane—to be a special gift of creative beneficence. This is wholly a superstition, notwithstanding the examples of the powers of men to control and tame ferocious wild animals, and the personal power of military chieftains is adduced to confirm their assertions. I cannot undertake here to analyze the psychical states of either the persons who possess the mental power to exert a controlling influence over other persons, sane or insane, nor of the persons susceptible of such influence. Why it was, for instance, that Gen'l Andrew Jackson, before his renown as a warrior, could descend from his seat as Judge, walk out into the courtyard and seize a desperado, who had taken his position upon a stump with pistol and Bowie-knife in each hand, and had successfully defied the sheriff and large posse, is an interesting psychological problem, and, if solved, would illustrate the question under consideration. I know of no explanation except to admit that every intellect has the

capacity to perceive in the attitude and expressions of a person, the stronger determining will-power of a superior intellect, when brought in antagonism to his own, and thus involuntarily yields to the dominating will. The feebleness and instability of the insane intellect is characteristic, and wherever they are not demented, they are more readily influenced by impressions made upon their minds through the various avenues to its approach, than are other persons.

It may therefore be observed that much depends upon the skill and tact of the physician, to determine and touch skillfully the cords of the intellect, whose vibrations will illicit no discordant sounds, but will yield the harmonious notes of confiding complaisance. The influence that the alienist obtains over the minds and sentiments of the insane, is frequently as great and durable as that which physicians obtain over the sane. Much good may be accomplished for the insane, by the wise exercise of the various moral and intellectual influences. The insane are pre-eminently impressible, and are influenced by sympathy and kindness, and often, the exhibition of sympathy is the opening way to successful treatment. Moral treatment, also, contemplates the influence of hope; it seeks to inspire hope and to dispel despair; it appeals, also, to the influence of rewards and discipline to be dispensed in conformity to the indications of the benefit that either might effect. In my judgment no circumstance justifies any but sincere dealing with the insane; when it is not best thus to act and converse, let silence and inaction govern. The various amusements—church services, music, mental occupation of reading and writing, and other employments that combine intellectual and physical exercise, have long been considered efficient aids in the successful treatment of the insane, and a blessing to the class where only limited mental capabilities exist. It may be well, in passing, to remark that in the fixed delusional insane efforts to benefit them by operating upon their intellectual faculties rarely

is successful. Delusions have a centric origin, which constitutes in the insane the orbit of all intellectual activities; therefore, no extraneous impressions can be made upon the delusional insane, which will for any length of time, change the current of their thoughts from the circuit and dominion of their orbit.

[The remainder of this report, embracing "Therapeutic Management," will appear in the next issue.—ED.]

SELECTIONS.

NEUROPATHOLOGY.

THE BASAL PATHOLOGY OF CHOREA.—Prof. H. C. Wood's, M. D., recent paper on "The Basal Pathology of Chorea" is the subject of the following editorial notice in the *St. Louis Courier of Medicine* for this month:

"The first point which he notes is, that the term chorea is analogous to the term paralysis, and that choreic movement is no more the same thing, necessarily, in its basal pathology, than is palsy the same thing in its basal pathology. When we study the various forms of disease closely connected with choreic movements, we find, in the first place, the so-called cerebral or post-hemiplegic chorea, in which, after cerebral palsy, there appear violent convulsions with choreic movements. There can be no doubt that, in many cases, the lesion is situated in the seat assigned to it by Professor Charcot, in the corona radiata, near the lenticular nucleus; but, on the other hand, it is equally certain that there have been cases of so-called post-hemiplegic chorea in which the lesion has been in the external capsule and in the cortex. We may, therefore, say that this post-hemiplegic chorea is associated with various lesions in the brain, so far as seat is concerned.

"We are forced to the conclusion further, by indubitable evidence, that we may have post-hemiplegic chorea, without lesion, and hysterical in its nature.

"Studying the more general forms of chorea in the adult as well as in childhood we find the same truth, viz., that we may have a chorea dependent upon lesion of the brain in various seats, or independent of any lesion whatsoever in any portion of the nervous system.

"Dr. Wood has been making careful studies of chorea in the dog. It has been affirmed, he says, that chorea in the dog is different from chorea in the child, for the reason that in the dog the movements are chiefly rhythmical, whereas in the child they are not usually rhythmical; but he has seen dogs with absolutely rhythmical chorea, and with all the awkwardness of chorea of children; and, occasionally, we have more or

less of the rhythmical type in children, When we come to look at the points of resemblance in the two diseases we find: first, that in each case it especially affects the young animal; second, that in each case the disease is associated with a constitutional disorder—distemper in the dog, rheumatism in the child; third, the symptoms are exactly analogous, except that there is more tendency to rhythm in the one than in the other; fourth, the clinical experience of veterinarians and of physicians has led to the same result, viz., that arsenic is the best remedy for chorea in the dog, and for chorea in the child.

“ In order to settle the seat of the lesion, Dr. Wood cut the spinal cord so low as not to interfere with breathing, The choreic movement invariably continued after section. Before the section the motions of the front and hind legs were synchronous, that is, a wave of motion starting in the front paw would pass down the hind foot; but after the section this synchronous movement was wanting. The hind legs were completely isolated from the upper portion of the nervous system, and yet continued to exhibit the choreic movements, proof that the movements originated in the spinal cord, and, in all probability, in the motor cells, because when he galvanized the bared sciatic nerve, although the animal exhibited no signs of pain, the movements in the hind leg were at once inhibited. The galvanism of the sciatic nerve could only affect the motor cells. Therefore he came to the conclusion, physiologically, that the movements originated in the motor cells of the spinal cords.

When he first examined the cord he perceived nothing wrong beyond an infiltration with leucocytes resembling that described by Gowers and Sankey, who regarded this as constituting the basal pathology of chorea. However, he found the same leucocytes in the cords of healthy dogs. As he studied the specimen more closely, he found that the motor cells refused to take the carmine and hematoxylin staining as they should do. Then he took the cord of a dog which had died of the disease, and found the lesion in the motor cells very marked. They were crumpled up, the processes were gone, and the nuclei had disappeared. They were merely masses of matter, taking very little staining, just enough to show that they were protoplasmic.

As he killed dog after dog in different stages, he found the motor cells in all stages of degeneration, first, the perfect cell, then the cell which stained badly, then one with nuclei disappearing, the margins becoming obscured, the processes dropping off, and opacity occurring, and, finally, the irregular protoplasmic balls. In a few cases he noticed peculiar degeneration, *i. e.*, the formation of vacuoles in these cells. A change, then, in ganglionic cells is what he believes to be the basal lesion of chorea.

"Some years ago, Putnam, of Boston, studied chorea in the cat. In the first case he found no lesion, but in the second he found this same lesion not only in the cord but in the whole nervous system."

EXPERIMENTAL CHOREA.—At the meeting of the Medico-Chirurgical Society, London, May 26, 1885), Dr. A. Money exhibited several animals, dogs, cats, rabbits and guinea-pigs, in which he had produced nervous affections, simulating chorea in man, by injecting various substances—arrow-root, starch, carmine, etc.—into the carotid. Capillary embolism of the central nervous system was thus produced. He succeeded often in setting up this condition in the brain, but very seldom in the medulla oblongata, the animals dying from paralysis of the respiratory centers. Capillary embolism of the brain gives rise to a series of symptoms which only slightly recall those of chorea, whereas that of the spine produces choreic movements not accompanied by paralysis or spasms; there is, at the same time, an exaggeration of the spinal reflexes.

In spite of the apparent disparity of the symptoms of capillary embolism of the brain in animals, and true chorea, M—— thinks that chorea in man is of cerebral origin, and that the seeming contradiction, between experimental and clinical observation, is referable to the absence of the pyramidal tracts in dogs, rabbits, etc. Sometimes, however, the exaggeration of the reflexes seems to point to a spinal origin of chorea, and these exceptional cases are analogous to the experimental chorea produced by embolism of the capillaries of the spinal marrow.

Generally, capillary embolism produces no lesion that can be recognized either by the naked eye or the microscope(?). Certain it is, that chorea is due to anomalies of nutrition analogous to those that cause paralysis, if they attain to a higher degree. This anomaly is the

result of various causes, among others, of capillary embolism.

In the discussion that followed, Hughlings Jackson reminded the members that, ever since 1864, he had maintained that in a good many cases, chorea was due to an obstruction of the arterioles of the convolutions in the neighborhood of the corpus striatum. Since the face is the seat of involuntary motions in the disease under discussion, it is evident that it cannot be produced exclusively by spinal trouble; we are also forced to admit a cerebral lesion, in order to explain the cases of pre- or post-hemiplegic chorea; besides, Charcot, Raymond, Demange and Weir Mitchell have demonstrated the fact by post-mortem examinations.

This does not exclude, however, the possibility of a concomitant spinal lesion in common chorea; Dickinson and Ross say that they have found them. It has been claimed that embolism could not be the cause of chorea, since it destroys the nervous elements, and hence produces paralysis; but we must not forget that in these cases there is an excitation of other nervous elements, and that in this manner epileptiform attacks can be brought about by localized softening in the brain.

Charlewood Turner gives as a result of a microscopical examination of the brain of a child, that died from chorea, a considerable swelling of certain nerve-cells, of the third layer in the cortex bordering on the fissure of Sylvius. Capillary embolism, he says, does not suffice to explain chorea, for its effects are temporary. If an embolism produces lasting changes, there is always paralysis. Broadbent admits that capillary embolism is one of the causes of chorea.

MICROCEPHALI.—At the meeting of May 30th, 1885, Professor Leidesdorf presented to the Imperio-Royal Society of Physicians (Vienna) several microcephalous children, all of them brothers. The parents are normal. There have been twelve children, eight of them living. Of these, two are normal; six, microcephali and idiots. The measurement of their skulls yielded the usual result obtained in microcephalism. The children made a good impression; all of them are of a quiet disposition, except the oldest one, (aet. 16), who has become obstreperous, and on this account been assigned to the service of Leidesdorf. He does not tolerate anybody near him

except his attendant; is voracious and dirty. Sometimes he keeps quiet and motionless for a number of days. This is at variance with the opinion held by Bischoff, who ascribes to the microcephali an exaggerated motor activity. Leidesdorf does not agree with Carl Vogt, as to the etiology and nature of the affection. The latter, it will be remembered, made, years ago, the sensational assertion, that in the microcephali we possessed living examples of our prehistoric ancestors. This atavistic theory has been exploded. Microcephalism is simply an arrest of development of the brain, as maintained many years ago by Cruveilhier. Another point of interest: All the normal children were delivered with forceps. In this connection, Schaffhausen's case is instructive: A woman could, at every birth, foretell, whether the child would be microcephalous or normal; she knew it from the spasmodic nature of the labor pains. Cases like this, would tend to prove the correctness of Klebs' theory, that microcephalism, *i. e.*, arrested development of the skull is the result of uterine spasms.

EPILEPSY CAUSED BY THE SIGHT OF A CORPSE.—By Legrand du Saule.—There is, in the popular mind, a strong tendency to trace nervous affections to fright. As regards epilepsy, the profession is divided as to the latter being an etiological factor. Two opinions, backed by the weight of great authority, are prevalent: Gowers thinks that psychical causes are the most active and frequent in the production of epilepsy; whereas Lassègue affirms never to have seen a case of clear unequivocal epilepsy result from fright.

In order to settle this question, Legrand du Saule has questioned the patients of his service (it is not stated how many), and has found eight cases which were accounted for by the patients as having come on by the sight of a corpse. It seems, however, that this was the occasional, and not the real or primary cause of the disease.

NEUROTHERAPY.

THE VALUE OF BLISTERS OVER THE FOURTH AND FIFTH DORSAL VERTEBRÆ.—The same writer, to whom editorial reference is elsewhere made in this number, makes the following bold statements, which the reader may find

fruitfully suggestive. A wide range of experience will modify the author's enthusiasm on this subject, yet there is, nevertheless, a therapeutic truth here not yet fully explained. A quarter of a century ago, when the editor was a young physician, he found that blisters between the scapulæ and spine had efficacy in pneumonia and pleurisy, and a blister to the back of the neck is known to be of signal efficacy in frontal cephalalgia of hyperæmic character. This is explainable through its influence over the cervical sympathetic and the cerebral vaso-motor system.

"Among the ailments which yielded so rapidly to the counter-irritant treatment were trigeminal neuralgia, facial paralysis (Bell's), acute hysteria, dysmenorrhœa, the reflex vomiting, the neuralgic toothache and the pruritis pudendi of pregnancy, gastralgia, and other neuroses; and when vesication was the method adopted," I was generally able to assure the invalid that in five hours, coincident with the formation of the blister, all painful symptoms would permanently take their departure. By neuralgia, I mean the typical disease of remittent character generally, but not always, departing at night, to recur at the same hour every morning, or vice versa, and not that ailment, principally rheumatic, so often miscalled; chorea has almost always yielded to this plan of treatment, with some important exceptions, including the chorea of pregnancy, and that form depending on organic cardiac disease. The dysmenorrhœa of neuralgic type yields readily, and I have not once failed for many years by a single vesication over these vertebræ to put an end at once to the sickness of pregnancy during the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache and the pruritis pudendi yielded as readily, and to one application.

In our present imperfect knowledge of spinal pathology, it is not easy to explain how it is, that remedies applied solely to this limited area of the spinal column, can control and cure disease located in the periphery and in distant organs. I have failed to obtain any proof that any fibrillary connection can subsist between the dorsal cord or nerves and those conducting motor or sensory power to the organs under consideration. There is nothing peculiar in the structure or dimensions of the cord at the mid dorsal region save that it is narrower and more compact than in other parts of the neural axis.

THE INJECTION OF SULPHURIC ETHER is not without danger. Charpentier and Barbier saw degenerative neuritis following the injection of ether in cases of sciatica.

At the meeting of the *Berliner Medic., Gesellsch.*, Jan. 7, 1885, Remak presented a case of partial paralysis of the radial nerve, confined to the extensor communis, the extensors proprii digitorum, and the abductor pollicis longus. The symptoms of a severe traumatic paralysis were present, the result of a subcutaneous injection of ether to relieve coma resulting from CO poisoning. Mendel related a similar case as occurring in his practice, and Dr. Newman (*Neurolog. Centrbl.* 1885, No. 4.) details the case of a consumptive in whom two symmetrical ether injections, in both forearms, were made during collapse. Here, too, paralysis was the result, gradually disappearing under treatment. According to the severity of the case it takes weeks or months for recovery to take place. Arnozan was the first to describe cases of the kind mentioned.

ROUMANIAN CLIPPINGS.—The *Progresful Medical Roman* of May 18, contains an interesting article on the *Piscidea erithrina* in cancer, as follows;

"This is a magical therapeutical agent derived from the American flora.

"The *alveloe* is the juice of one of the ephorbiaciæ extolled in Brazil as a remedy against epithelioma. Dr. Velloso was the first to use the medicine for this purpose and has reported many cures made with this drug, especially epithelial cancers of the mouth and nasal malignant growths made by the local application of the juice. The plant has been described by Dr. Christy, of London.

"Dr. Pampilo, surgeon of St. Peter's Hospital, Pernambuco, cites many cases in which he has cured cancers, chancroids, epitheliomas, and malignant erectile tumors, by the use of the *Piscidea erithrina* juice, etc., etc."—*Cin. Lan. & Clin.*

PARTHENEIA AS AN ANTI-NEURALGIC. — Dr. Josi Ramirez Tovar (*Chron. Med. Quir. de la Habana*) gives some satisfactory experience with this alkaloid of the *Parthenium Histcropherus*.

In the case of a woman, æt. 34, who suffered from

severe facial neuralgia, but who was, otherwise, strong and healthy, he gave one-tenth of a gramme every hour, bringing about relief after the third dose, with entire exemption the following day.

Smaller doses were recommended but not taken, and on the fifth day the neuralgia had returned but with less severity than before. A few more doses caused the neuralgia to disappear and it had not recurred again after the lapse of five months. Dr. Tovar has had marked success in malarial fever—intermittant and remittent forms—with parthenia, and is confident that he has made a valuable therapeutic discovery.

SYNCOPE FROM THE USE OF COCAINE.—Dujardin-Beaumetz has observed this effect from the hypodermic injection of weak solutions of cocaine, which he attributes to cerebral anæmia, and says that it never takes place if the patient is kept in bed while under its influence.—*New York Medical Journal*.

PSYCHIATRY.

THE CASE OF GEORGE WOOD THE VITRIOL THROWER, TRIED IN PHILADELPHIA FOR VITRIOL THROWING.—George Wood, tried in the criminal court of Philadelphia in 1881, for vitriol throwing, was a man sixty years of age, boisterous and eccentric, but successful in business. His only sister was for many years insane, one brother had chronic epilepsy, and the remaining brother had what was regarded as an apoplectic attack. Wood was afflicted for years with some disease of the bowels, and in 1877 was operated upon by Dr. Agnew for piles. After this chronic diarrhœa developed, with bloody mucous passages, suffering and exhaustion. He was under the care of Dr. Knorr from the date of the operation until November, 1878, when professional attendance ceased, though the diarrhœa continued. During the whole of 1878 and 1879, up to the fatal Christmas night, the unfortunate man suffered from a severe chronic diarrhœa, which reduced his strength and developed the mental disorder.

After the operation for piles a gradual change occurred in the actions, conversation, and habits of life of Mr. Wood. Sleeplessness at last reached such a point,

that witnesses affirmed that he never slept more than a few minutes in the twenty-four hours. There was physical restlessness shown by his ability to sit still even during meals, and by rapid walking to and fro through the house, or running out into the street and back, or going many times a day in and out of shops which he had been accustomed to frequent. He was finally never quiet at all. He gesticulated, wildly throwing his hands about, wringing them, pulling at his hair, unbuttoning his coat, etc. Sometimes he went crying as he ran; more often he poured forth a continuous stream of incoherent talk, cursing and swearing most vehemently, and speaking sometimes indecently about his disease and the persons who he declared had injured him, or were about to ruin him. He had delusions. Dr. Knorr "burnt his guts out with vitriol," and Mr. M—— "caused his disease by giving him some supposed improper business advise. They and his brother Charles were the chief objects of his animosity. Charles was "coming to ruin him." Wood during 1879, visited Dr. Agnew for professional advice, the doctor then judged him insane, and advised that he be put in Dr. Given's Insane Asylum, near Media, Pennsylvania. Wood at one time nearly set his house on fire; threatened and made preparations for suicide; became careless as to his dress and was filthy in his habits. Yet he was allowed to go at large. On the 22nd of December he visited Dr. Knorr's office, and after violent denunciation, left swearing vengeance. On the 25th or 26th of December he went to the house of an old acquaintance, and on finding that he was not at home, left word with his wife, Mrs. Sheppard, that he wished her husband would come to see him, as he had in his cellar some screws or machinery he would like to show him. The next day, at 5 p. m., Mr. Sheppard saw George Wood pass rapidly, followed by his nephew. Wood, some minutes later, stooped alongside of a doorstep, poured something from a bottle into a mug and darted off. Mr. Sheppard met him, friendly talk ensued for a few minutes, when Wood started off, but, after a few steps turned sharply and exclaiming, "smell that," with an oath, dashed the sulphuric acid over Mr. Sheppard's face and ran away. Wood was stopped by his nephew and a police-officer, but afterwards broke away and ran on to a ferry-boat. The gate-keeper divining a would-be suicide, shouted, "stop that man." He was seized and

after a struggle, he yielded and was taken home. A few days subsequently, Drs. Knorr and Young sent him to the Friend's Asylum, near Frankford. The superintendent, Dr. Hall, regarded Wood as suffering from general mania. He was sleepless, excited, violent, smearing his excrement over the furniture, shouting and yelling and continually rushing up and down the room in which he was locked. After six months he was sufficiently recovered to have the liberty of the grounds.

Drs. Preston Jones, Hall and H. C. Wood testified that George Wood, at the time of the assault, was suffering from general mania. The district attorney, on behalf of the commonwealth, asked for a verdict of "acquittal on the ground of insanity." The judge charged accordingly.

The abandonment of the prosecution was no doubt largely the result of the opinions given by Dr. D. D. Richardson and other experts called by the district attorney. There are cases of alleged insanity in which there is more room for honest difference of opinion than in the present instance, but source of disagreement is often found in the acting as experts of men who have not really studied insanity. In America, he who can flourish well the amputating-knife is thought by many of the laity to be versed in all forms of medical lore; and we have even seen surgeons who shared the delusion. It was therefore with much satisfaction that we heard Dr. D. Hayes Agnew, in clear, forcible language, upon the stand, affirm that he was no expert in insanity, and that his testimony should not be considered as coming from such a one. Modesty like this adorns him who has it, and exalts the profession.

An important moral to be drawn from the terrible tragedy we have just epitomized is in regard to the responsibility of those whose blood and marital relations make them the natural guardians of those who are by reason of insanity no longer able to take care of themselves.

In medical journals, and in the secular press, we read furious attacks upon our insane asylums made by those who hold seemingly high places in our profession; attacks which are in great part unwarranted, and which are calculated to do immense injury by destroying whatever confidence the laity have now in the management of our asylums. The latter are not perfect institutions, but are,

on the whole, well managed by men who are as honest, well-informed, and well-meaning as any other class of our profession, and whatever change is to be brought about in our system can only safely be attempted by fair, honest discussions with them and *without* the public.

The case of George Wood is but a common instance of the fact, that the insane need protection against themselves, and that in the asylum they are far better off than at liberty. It is a truth that the sane need protection from the insane. Not only do records of criminal assaults show this, but also the daily martyrdoms, on the part of those who conceive it their duty to keep their relations and friends at home although insane, or who are forced by public opinion or the law to this mistaken kindness. In the great majority of cases, we believe that not only do the safety and happiness of the sane demand the confinement of those who have lost their reason, but that the chronically insane themselves are happier under the discipline of the asylum, than under the half and fitful control of those whom, it may be, they have been accustomed to govern.—Abstracted from *Phil. Med. Times*, Nov. 5th, 1881, by a contributor.

RECENT EXPERIMENTS ON THE SEVERED HEADS OF CRIMINALS.—The Paris correspondent of the *Lancet*, May 9, says that the question has again been mooted as to whether those who have been decapitated suffer; and after additional experiments on the head of Gamahut, who was guillotined on the 24th ult., for the murder of a widow lady in Paris, coupled with those related by Claude Bernard, the presumption is that they do; for under the influence of transfused blood, the blanched features recovered almost their normal expression, the eyelids were slightly open, and the lips quivered for a few seconds, as if to express some perception communicated from the brain. The conclusion, then, is that so long as the brain contains any blood, the head of the decapitated person, which falls into a receptacle prepared for the purpose, is capable of seeing, of hearing, and of knowing that it is separated from the body. This view, however, was repudiated by Professor Vulpian at the last meeting of the Academy of Medicine, on the following grounds: A strong blow applied to the head, or a less severe one to the stomach, would cause instantaneous syncope; that is to say, consciousness would for the moment be entirely

abolished. So it would be in the case of the severed head, but of course without any possibility of recovery; the weight of the guillotine falling upon the neck would produce the same result. Moreover, syncope would be occasioned by the sudden division of the carotid arteries, and the consequent emptying of the arterial system of the brain. Therefore, at the very moment that the brain ceases to receive the vivifying fluid from the heart, it loses all power of excito-motility, as well as all power of sensation; all this transpires as quickly as thought, and its duration may be compared to a flash of lightning. It happened opportunely that a dog that was undergoing some experiments in Prof. Vulpian's laboratory was suddenly seized with a hemorrhage. Advantage was taken of this circumstance to immediately expose the brain and submit the latter to faradization. Scarcely half a minute had elapsed between the arrest of the circulation and the galvanic irritation. It was impossible to obtain any movement in the legs. The effects of the electricity produced in the muscles of the head and nose were not according to Prof. Vulpian, due to the physiological transmission effected by the brain, but to the neighborhood of the source of irritation; the brain having lost all power of excito-motility, would in this case act as a mere sponge; and if such a condition was found to exist for only half a minute after the arrest of the circulation, the interpretation put on the effects said to be produced on severed heads by other experimenters must certainly be considered erroneous.—*Phil. Med. & Surg. Rep.*

CLINICAL NEUROLOGY.

CLITORIDEAN CRISIS BEFORE THE PAINS OF PROGRESSIVE LOCOMOTOR ATAXIA.—Pitres directs attention anew to the fact that locomotor ataxia is not infrequently ushered in or accompanied by attacks of voluptuous sensations in the female, which must be regarded as being analogous to the erections and spermatorrhœa which are well-known to occur in men in the early stages of the disease. The author reports three cases of tabes in which these attacks were observed. The first case is a woman aged 34 years, who was married, had two healthy children, and always enjoyed good health. She worked a

sewing machine, and it became exceedingly disagreeable to her, because in moving the pedals the rubbing of the thighs against one another provoked attacks of voluptuous sensations, with erections of the clitoris and ejaculation, just as occurs in natural coitus. These attacks occurred spontaneously and in the absence of any erotic thoughts and sometimes occurred as often as three or four times in the same day, but a succession of attacks was often followed by great languor and distaste for food. It was not until four years after that the lancinating pains and other symptoms of locomotor ataxia manifested themselves.

In the second case the attacks of sexual excitement began about a year before the commencement of the other symptoms; but in the third case the woman suffered from these voluptuous sensations for ten years before the characteristic lancinating pains began in the lower extremities. The author concludes that when females suffer from spontaneously recurring attacks of voluptuous sexual sensations, locomotor ataxia ought to be suspected in the absence of any other symptoms, and a diagnosis of tabes may be made with certainty if these attacks are accompanied by such symptoms as absence of the patellar tendon reaction, lancinating pains, gastric crises or ocular troubles.—*Obs. Gaz.*

MONOPLÉGIA DUE TO TUBERCULAR MENINGITIS OVER THE MOTOR AREA.—In the *Progrès Médical* (February 7) is an interesting report of a case under the care of Prof. Cornil, in which left brachial monoplegia was found to be due to a definite tubercular mass in the right hemisphere, situated at the junction of the middle and upper thirds of the fissure of Rolando, pressing partly upon the ascending frontal and partly upon the ascending parietal convolutions. The growth was flat, yellowish in color, and appeared to be formed of fibrin, pus and tubercles: from it granulations were observed extending along the course of the veins. Tubercle-bacilli were found in the inflamed meninges. The lungs were in an advanced state of caseous pneumonia.—*Phil. Med. Times*, March 7th.

PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.—New York, June 17, 18 and 19, 1885.—First day, Wednesday, June 17th, afternoon session.—The Association met in the Hall of the New York Academy of Medicine, president, Dr. Isaac Ott, of Easton, Pa.

Dr. Ott directed attention, in his retiring address, to the relations of the nervous system to the temperature of the body. The researches of various observers, he said, lead to the conclusion that the temperature of the body, like the heart, is under the control of the nervous system. To the question, where are the heat-centers located? he answered: In 1884 he showed that in the vicinity of the corpora striata were centers having a relation to the temperature of the body. Recently Aronsohn and Sachs have arrived at the conclusion that in the cerebrum are similar centers, whose situation corresponds to the corpora striata. Dr. Ott in the last few months has more definitely located the heat centers in the anterior inner part of the optic thalami.

These centers are true heat-centers, and not due to vaso-motor deflections. Removal of different parts of the cortex causes only a temporary rise, while the rise in the centers concerned lasts two or three days, and often amounts to about $4\frac{1}{2}^{\circ}$ F.

Officers for 1885-6: President—Dr. Charles K. Mills, of Philadelphia; Vice-president—Dr. V. P. Gibney, of New York; Secretary and Treasurer—Dr. R. W. Amidon, of New York; Councillors—Drs. Geo. W. Jacoby and E. C. Seguin, of New York.

Dr. A. D. Rockwell, of New York, reported a case of chronic myelitis followed by recovery, supervening upon acute myelitis in a girl of sixteen years of age. There was complete abolition of electro-muscular contractility, with bed-sore and paralysis of rectal and vesical sphincters. The acute attack followed immediately upon exposure to cold, and within a week there was complete paralysis of the lower limbs, and after six weeks a bed-sore developed in the region of the last lumbar vertebra. After the fourth week the bed-sore began to improve and faint muscular contractions were observed, and the case then went on to recovery.

Dr. M. Allen Starr, of New York, discussed the methods of staining nervous tissue, in which he gave the

technique of Weigert's hæmatoxylin method, Weigert's acid fuchsin method, Seguin's modification of the aniline blue method, Sahli's methyl blue stain, Sahli's double stain with methyl blue and acid fuchsin, Sahli's methyl blue stain, and last, the saffranin stain.

Dr. J. W. Jacoby, of New York, gave a résumé of the use of osmic acid in peripheral neuralgias, discussing the cases of Neuber, Eulenburg, A. Wölfer, and Jas. Merces.

Dr. Jacoby treated his cases by the hypodermic use of a one per cent. watery solution of osmic acid, using half a gramme at each injection, inserting the needle as near as possible to the point of severest pain, and into the connective tissue surrounding the affected nerve. The pain, caused by the injection was, in many cases, exceedingly severe, and occasionally local changes were produced. The action of the drug is probably a local one, no constitutional symptoms whatever being produced. Dr. Jacoby gave the details of only three of his cases: two of sciatica and one of cervico-brachial neuralgia. His whole number of cases was eighteen, which showed eight cures, two improved, eight unaffected. Of the eight cured cases, five were sciatica. All the cured cases were old cases; the unimproved cases were three recent and two old ones. From his cases it seemed that the sciatic nerve was most impressionable to the action of this remedy, and that old inveterate cases presented the best chance of success.

The conclusions reached were: (1) that we have in osmic acid a remedy which is of service in the treatment of certain cases of peripheral neuralgia and in some cases when every other remedy has failed; (2) that osmic acid is not an anti-neuralgic, its action is very localized, and it frequently fails when other remedies succeed; (3) that its employment is, in most cases, very painful and not altogether free from danger; (4) that it is dangerous to implicate a motor nerve in the injections.

Dr. Sachs, of New York, on invitation, participated in the discussion, and said that his experience in the use of osmic acid in the treatment of neuralgia had been only partially satisfactory; the impression which he gained being that in most cases it was unreliable. The drug was doubtless admissible where everything else had been tried and failed.

Dr. Seguin, of New York, had not used osmic acid,

but he had had some experience in the application of the same general principle, namely, deep-seated counter-irritation by hypodermic injections of different drugs. He had seen two cases of sciatica cured by such treatment with nitrate of silver. He had also seen two cases of radical neuralgia, in which osmic acid was used without any relief, but they were not suitable cases for the remedy.

Dr. Jacoby thought that if Eulenburg's experiments were reliable, the benefit was not always due to counter-irritation.

Dr. V. P. Gibney, of New York, reported two cases of spina-bifida, one followed by hydrocephalus, cured. The specimen from one case had already been presented to the New York Pathological Society, but at that time had not been examined microscopically. The method of treatment was that adopted by Morton, of Glasgow, and consisted of aspirating one or two drachms of the fluid and injecting iodo-glycerine, the quantity injected varying from a half to a drachm. The solution used contained iodine, grs. x.; glycerine, $\bar{3}$ j.; and iodine of potassium, $\bar{3}$ ss. In both cases the sac was obliterated. *Both children died not long afterwards, one from hydrocephalus, and the other from cholera infantum.*

Dr. L. C. Gray, of Brooklyn, read a paper on "The Use of Strychnia in Nervous Diseases." He had administered strychnia after the method of Dr. J. S. Jewell, of Chicago, namely, the use of as much as one-tenth of a grain in myelitics.

In the acute and subacute cases it had aggravated or produced alarming or unpleasant symptoms when carried as high as one-twenty-fifth of a grain. In the chronic cases better results were obtained, but the largest dose he had felt warranted in employing had been one-twentieth of a grain. His experience did not sustain the method recommended by Dr. Jewell.

Dr. C. L. Dana, of New York, had used strychnia in functional nervous diseases, in doses as large as one-eighth, one-sixth, and one-fifth of a grain three times a day, and with marked benefit. He thought there was no danger from either the accumulative or explosive effects of the drug which had been reported.

Dr. Seguin, of New York, thought that not much advance had been made with reference to the dosage of strychnia. Brown-Séguard many years ago advised and gave large doses repeatedly, as much as one-fifteenth of

a grain three times a day in cases of functional disorder, and with no unpleasant effects, as a rule.

With regard to Dr. Jewell's cases, he had suggested that the reason why no unpleasant effects were produced by the large doses was because the patients had no centrifugal matter with which to respond, as all of them were old cases of myelitis. Dr. Seguin, however, had not dared to carry Dr. Jewell's plan out thoroughly. He had been in the habit of giving the drug hypodermically.

The President delivered an address, entitled "Paronymy *versus* Heteronymy as Neuronymic Principles." For the term neurological nomenclature, Dr. Wilder uses the single word *neuronomy*. His general object has been to introduce a system of neuronomy, which, with a minimum of disturbance, in the existing order of things, may insure greater accuracy and brevity, and facilitate the acquisition and communication of knowledge between neurologists of all nations, to a considerable degree in the present, and to a much greater degree for our successors.

More specifically, the principal modifications proposed by him are indicated in the first publication on the subject in *The Medical Record*, September 18, 1880.

What he proposes and advocates is simply this: as far as possible for each part of the neuron (central nervous system), there should be found or made a name, consisting of a single Latin word, and that for each such Latin name, there be likewise found or made an English equivalent, not a translation, but a paronym, and furthermore, that in obtaining these names, due regard be had to existing nomenclatures, and established rules of etymological conversion.

Dr. E. C. Spitzka read a paper on "The Relations Between the Symptoms and the Cord-Lesions of Posterior Spinal Sclerosis," concluding as follows: "While it must be admitted that the primary lesion of tabes is competent for each affected level of the root zones and gray horns to produce all the characteristic symptoms of tabes referable to that level, yet in the extent and distribution of the consecutive lesions, we have valuable gauges of the extent, severity, and duration of the primary disturbance; and we may attribute to the following special disturbances the ensuing degeneration of the tracts, whose functions are abolished or diminished:

1. That of the column of Goll to the disturbance of muscular sense in the lower extremities. 2. That of the comma-shaped internal bands of the column of Burdach to the corresponding disturbance in the upper extremities. 3. That of the triangular area bordering on the periphery of the cord and the posterior root entry, to the severe analgesic development. 4. That of the column of Clark, and direct cerebellar (Foville's) tract, to the disturbed space sense."

The President presented a mounted specimen consisting of an injected preparation of the so-called circle of Willis, which illustrated a seldom-described artery (A. termatica), with suggestions as to the names of the principal encephalic arteries.

Dr. Wharton Sinkler, of Philadelphia, contributed a paper entitled, "Two Cases of Friedreich's Disease," which was read by Dr. G. B. Massey, of Philadelphia. Both cases lacked the congenital and hereditary history, and in neither had an autopsy been obtained.

Dr. Seguin referred to his paper on this subject, published in *The Medical Record*, June 13th, and also presented microscopic slides prepared by Dr. J. J. Putnam, of Boston, illustrating the changes found in the spinal cord in two of Smith's cases. In the study of the disease, he had been impressed with the fact of absence of pain and anæsthesia, associated with so extensive degeneration of the whole of the posterior columns and other portions of the cord.

Dr. Amidon, of New York, gave the clinical history of two cases of Friedreich's disease still under observation.

Dr. Starr, of New York, described the lesions as shown in the specimen from the case first observed by Friedreich. The changes were limited to the posterior columns, the pyramidal tracts, and the lateral columns and the tract of the cerebellar columns. The cord was also deformed, so that Friedreich considered it to be a congenital deformity.

Dr. George W. Jacoby, of New York, presented an absolute galvanometer and a rheostat devised by Dr. J. Rudisch, of New York.

The advantages claimed for the rheostat over the ordinary water rheostat were lack of evaporation, no breakage, and no polarization.

Dr. M. Allen Starr, of New York, then presented two

series of sections of the human brain, mounted by Dr. H. D. Schmidt, New Orleans.

Dr. E. C. Spitzka, of New York, presented a specimen illustrating a peculiar deformity of the cerebellum, produced by congenital lipomatosis. He also presented microscopic sections of the central nervous system of the cat, illustrating Gudden's atrophy method.

Dr. B. G. Wilder, the President, presented a brain which illustrated the continuity of the diacœlian endyma from the misal surface of the thalamus over the habena to the diatele; also specimen illustrating the insula in the dog, monkey, chimpanzee, and porpoise.

Dr. E. C. Seguin, of New York, then read a contribution to the pathology of the cerebellum. The case was one of tumor of the cerebellum occurring in A. M. B—, thirty-seven years of age, single, without syphilitic history, who came under Dr. Seguin's observation in in consultation with Dr. English, of New Brunswick, N. J., in 1877. The autopsy was made April 24, 1885, by Dr. English and Dr. Elmer, of Trenton, N. J. Dr. Seguin had diagnosed tumor of the cerebellum involving the superior vermis.

The symptoms were: Headache and one or more epileptoid or apoplectiform attacks; impaired vision, optic neuritis and partial atrophy; typical cerebellar titubation, nystagmus; slight difficulty in articulation; no distinct paralysis; no ataxia; no anæsthesia; patellar reflex raised. Stupor, difficult articulation and deglutition, ptyalism and polyuria, and death with cerebral and bulbar symptoms.

Lesion.—Cyst of the cerebellum destroying the larger part of the vermis, penetrating the right lobe and pressing upon the floor of the fourth ventricle. Extensive syphilitic arteritis with varying forms of softening within the brain.

Dr. Amidon, of New York, reported a case in which there was found at autopsy a sarcomatous tumor involving the superior vermis, extending through the cerebellum, and destroying considerable of the floor of the fourth ventricle.

Dr. J. K. Bauduy, of St. Louis, read a paper entitled, "Physiological, Pathological and Clinical Notes on Hydrochlorate of Cocaine." Asserting the efficacy of hypodermic injections of one grain of the alkaloid in the treatment of insanity, especially melancholia.

A paper by Dr. H. D. Schmidt, of New Orleans, entitled, "A Case of Destructive Lesions of the Tegmentum and Thalami, etc.," was read by title.

A committee on electrical dosage was appointed to report at the next annual meeting: Drs. George W. Jacoby, R. W. Amidon, and W. R. Birdsall, of New York.

We are indebted to *The New York Medical Record* and *New York Medical Journal* of June 27th for the data of the above report. The enterprize of these medical weeklies should commend them to the readers of THE ALIENIST AND NEUROLOGIST.

EDITORIAL.

[The Editor is Responsible for all Unsigned Editorial Matter.]

The State of the Cortical Motor Centers in Epilepsy.—Luciani's painstaking and instructive contribution to this interesting study, which, through the industry and unflagging interest in physiological and pathological research of our esteemed venerable confrère, Dr. Joseph Workman, was given to the readers of *THE ALIENIST AND NEUROLOGIST*, last January, is made the subject of the following appreciative and suggestive considerations in the editorial pages of the *Philadelphia Medical Times* :

"The clinical observation that certain cortical lesions of the brain may be attended by epilepsy is not new. Since La Motte, in 1705, first trephined for epileptiform convulsions apparently due to depressed fracture of the skull, the operation has been repeatedly performed by modern surgeons. Dudley, in 1828, operated by resorting to this method in five cases of epilepsy, and was successful in three. Billings,* in an analysis of cases of trephining for epilepsy, found that out of seventy-two cases forty-two were cured, four were unchanged, sixteen died and the remainder were improved though not entirely relieved. The statement of Hughlings Jackson that in men certain convulsive forms have their origin in the cerebral cortex, led Ferrier to make a series of experiments upon animals, from which he concluded that epilepsy is provoked by an irritation of the cortical motor centers. This subject has been more recently studied in Italy by Albertoni, who sought to determine the pathogenesis of the epileptic seizure, and by Luciani, who has formulated a theory of the origin and site of the lesion of epilepsy, which has been accepted by many able physiologists and has found some application in clinical medicine. Giuseppe Seppilli, in a recent paper in the *Rivista Sperimentale*, 1884.† gives an admirable summary

*Quoted by Gross, "System of Surgery," Philadelphia, 1872 (Vol. II., p. 177), where the author also gives an account of a very interesting case in which the depression of the skull was over what is now recognized as the motor region of the cerebral cortex. It was found, after trephining, that an exostosis had penetrated the dura mater and had irritated the underlying convolutions.

†Translated by Joseph Workman, M. D., of Toronto, Canada, and published in *THE ALIENIST AND NEUROLOGIST*, January, 1885.

of the evidence in favor of Luciani's views, basing his argument upon a study of the conditions requisite for the production of artificial cortical epilepsy in animals, and the methods of provoking the seizures; secondly, the analysis of the access of the attack and the causes which modify it; and, lastly, the physiological interpretation of the clinical phenomena which accompany epilepsy. We cannot attempt even an abstract of this valuable paper here, but will merely point out a few of its more salient features. In the first place, with regard to the results of experimentation upon animals, it was found not only that the disposition to cortical epilepsy (*i. e.*, epilepsy produced by direct excitation of the surface of the cerebral hemispheres) varies greatly in different species of animals, but also that it is variable in the same animal, so that it may be diminished or abolished or notably exaggerated under the action of various causes. The facility of provoking epileptic attacks, it was found, depended upon the state of functional activity, or, more properly, the excitability, of the cerebral motor centers. Some of the conditions affecting excitability were studied in detail. It was found that it was entirely absent in the newly-born; it was reduced by certain remedies, such as potassium bromide, anæsthetics, alcohol; retarded by cold, anæmia, and asphyxia; but, on the contrary, it was greatly increased by encephalitis and by certain drugs, such as absinthe, atropine, cinchonidine and picrotoxine. Electricity was generally employed in these experiments as the means of stimulating the surface of the brain.

"The epileptogenous zone, according to Luciani and Tamburini, is the whole of the motor area of Ferrier and Hitzig, including the cortical centers for the limbs, face, trunk, and neck, for by electrically exciting any of the single centers, epileptic accesses more or less diffused are induced (although more strongly developed in the dog in the centers for the motions of the limbs). It was observed as a curious fact that when the motor zone of a dog is laid bare over one hemisphere, if the animal survive, it readily becomes subject to spontaneously-developed epileptic attacks after complete cicatrization of the wound. [Which are also hereditarily transmissible. —H.] The occurrence of convulsions upon strong irritation of the sensory area was believed to be due to the propagation of the excitement to this motor zone. The gray matter is the essential part, according to Franck

and Pitrés, who found that stimulation of the underlying white substance was incapable of provoking a convulsive access; though this was not in accord with the experiments of Bubnoff, Heidenhain and Albertoni. Seppilli explains the apparent inconsistency by the suggestion that in the latter experiments the removal of the gray matter was incomplete. It was found, moreover, that partial destructive lesions of the gray substance of the motor zone provoked in the neighboring parts, still remaining intact, an irritable state by which their excitability was so exaggerated that intense convulsions were produced by slight stimuli.

"The experiments of Heidenhain—showing that after bilateral destruction of the motor zones epilepsy can no longer be provoked—go far towards explaining the diffusion of the stimulus in the development of general spasms supervening upon local irritation of one side of the brain. Indeed, Unverricht claimed that the intactness of the cortical motor region is a necessary condition for the development of a complete epileptic attack. The fact of convulsions being variable in their forms according to determining causes, does not exclude the idea that they depend chiefly on abnormal excitation of the cortex.

"Convulsions of bulbar origin are claimed by Luciani to be distinct from true epilepsy because they are not attended by unconsciousness, nor do they begin in certain groups of muscles and afterwards become general, as in true epilepsy, which accords with results of direct irritation of the cortical motor centers. Seppilli, however, regards the view of Luciani as a little too exclusive, and believes that epilepsy may be considered as a disease of the motor apparatus of the brain, and that it is legitimate to suppose that basilar motor centers, when they supply the function of the destroyed cortical motor centers, may acquire, as these, the epileptogenous property by exaggerating their proper function in such a manner that, in cases of absolute want of the motor zone, they may in turn become points of origin and of diffusion of an epileptic attack limited to the opposite side of the body.

"A case unique in literature is reported by Seppilli, of a woman, 30 years of age, in whom epilepsy had supervened at the age of twelve years upon an attack of cerebral disease. Left bodily hemiatrophy and incomplete paralysis existed, with attacks of left-sided epilepsy, commencing in the arm, in which there was also

contracture. After death the so-called motor zone was found to be entirely destroyed and replaced by vacuolated fibrous tissue, which extended into the medullary substance almost as far as the ependyma of the ventricles, and was associated with degeneration of the whole of the left pyramid. This remarkable case confirms the declaration of Luciani and Tamburini,* that the basilar ganglia may have a psycho-motor function differing only in degree from that of the cortex, but in the absence of the latter it is developed and augmented and thus favors the improvement of paralytic states.

"Thus experiment and observation apparently show that the anatomical seat of the disorder giving rise to the epileptic convulsions is represented by the motor centers of the cerebral cortex. That there exists an intimate relation between this motor zone and the epileptic attack may be considered as experimentally established, and also that the presence of an active motor zone is indispensable for the generation of the convulsive accesses, no matter in what part of the body the original source of irritation may be situated."

We did not comment upon the paper at the time of its appearance in our pages, feeling that we had not then the time to do so elaborate and worthy a presentation of the subject justice; and we heartily thank our enterprising and progressive bi-weekly contemporary for calling our attention anew to this interesting subject.

Motor disturbance may be accepted as the contrasting symptomatic characteristic of "*grand*" from "*petite mal*," but symptomatic *only*, for, pathologically, the inroads upon vitality, especially psychical, may be as great from epilepsy in its purely psychical as in its psycho-motor forms.

The clinical symptomatology and the pathological precursors and sequences of the psychical forms, while they show less extensive implication, reveal none the less grave conditions of the cerebral cortex. The explosive psychical convulsion of maniacal violence, or psychic automatism, and perverted cerebration, and the special sensory illusions passing into delusions and unconsciousness, without motor spasm, can hardly be scientifically dis severed from epilepsy *gravior* except in name; but it may be wise to nominally differentiate them, while taking care not to lose sight of the great fact, of late years so well

**Rivista Sperimentale di Freniatria*. Quoted by Sepilli.

demonstrated, and which marks the progress made in the study of this always interesting morbid condition, that the psychical passes into the motor and the motor into the psychical form of epilepsy, and that they are blended together in the same paroxysm, or alternate, in the progress of the disease in the same person, while it is a fact that marked motor involvement never fails to appear in steadily progressive epilepsy, beginning in psychical form, unless arrest takes place under treatment, or the usual termination is averted by the death of the patient from intercurrent causes. The tendency of psychical epilepsy, if unarrested, to be come also motorial, proves its kinship and unity with *grand mal*, and the attempt to circumscribe the *locus morbi* of true epilepsy to the motor centers of the cerebral cortex, except as a location of morbid cause of the *motor* phenomena, is hardly more happy than the view which formerly circumscribed epilepsy to the bulbar region, for the arteriole spasms and subsequent vascular dilations are due to vaso-motor conditions, which may be influenced by foci of irritation beginning in and radiating from any portion of the cortex or bulbar area, and probably in the basal ganglia also.

We are persuaded that, notwithstanding the recent instructive researches of Luciani, Seppilli and Tamburini, the precise and only seat of epilepsy has not yet been definitely located in the brain, or the limits of the morbid movements, in this disease, undeniably defined.

Physicians' Prescriptions. — To avoid certain abuses, we recommend the following as a suitable accompaniment of physicians' prescriptions, and as suggestive also of the physician's understanding of the nature of his written directions, as regards the question of proprietorship in his prescriptions. It would save life in many instances, and prevent money-makers from putting physicians' prescriptions in proprietary form :

This prescription is a memorandum direction for a certain definite quantity of medicine, to be taken as directed *only*, and *only* till the amount herein indicated shall have been exhausted. It is not, therefore, to be repeated without further advice from the prescriber. The holder is hereby cautioned against the possible danger of the formation of pernicious drug habits, and of over and misdirected medication from the injudicious and unauthorized repetition of prescriptions, beyond the quantity prescribed, and beyond the time indicated by the physician.

ACCEPTED ON THE ABOVE CONDITIONS,

[To be signed by the patient.]

General Grant.—The death of General Grant, nine months after Dr. John H. Douglas' first examination and prognosis of a probable fatal termination, when only an indurated and inflamed nodulation at the base of the tongue, with some adjacent sympathetic inflammation and congestion was discernible, shows us how unerring medical science has become of late years in diagnostic power, in regard to epithelioma. Considering the formidable character of the dead hero's malady from the start, and the overwhelmingly depressing influences which prostrated his life forces and made the development of cancer in him a possibility and its rapid progress toward the inevitable end a certainty, it is remarkable that General Grant has lived so long. This, with the work he did on his book, and the solicitude for its completion before the end, he knew was coming, might overtake him, with his task unfinished, added to the drain of the cancer upon each day's diminishing vitality, makes it remarkable that the end came not sooner. His case was managed with consummate skill, such as the profession expected from the professional character and ability of Dr. Douglas and his associates, Drs. Shradly, Sands and Barker.

The sanctity of the family privacy seemed, during the progress of the case, to have been too often invaded by the too-ready and too-often heralded bulletin of his condition, which probably returned to harm the suffering hero. (For this reportorial and public demands were perhaps much to blame.) But there is fortunately little room for the adverse criticism which the profession received over the management of the case of President Garfield. Grant's case fell into the right hands from the very beginning, and he suffered no misdirected search in the wrong direction for the *locus morbi*, which no amount of skill could remedy.

If we go not beneath the surface we must say General Grant died of cancer. If we go further into causes, we see a psychical shock—a wounded spirit—which no organism, trained as his was, to a soldier's sense of honor, could withstand. The treachery of his financial associates to him and to the public who trusted the firm, through the association of his name with it, gave him the fatal blow of vital depression, which made the development of epithelioma a possibility and its early fatality a certainty.

It is gratifying to the medical world to know that the hero of so many unconditional surrenders only succumbed to death after every means in the power of science, of resisting the all-conquering foe, had been tried; that, through wise counsels, no suggestions from cundurango sources were allowed to embarrass the efforts of his chosen physicians and shorten his precious days; no persistent probing of false passages prolonged his daily agony or compromised his failing vital energies. The hero of Appomattox yielded only to the inevitable, and no reproach of neglected resource falls upon the profession or suspicion of error.

A grander battle than his last was never fought by patient or physician. His devoted medical advisers, with the fidelity, courage and skill of true medical science, contested every inch with the foe, and gave a sympathizing world, at times, astonishing hopes of victory. While the "silent commander" worked on as he had done so often before, in the face of death and in the line of duty, till the work on his memoir, which was to save his family from want and add another laurel (and not the least) to his chaplet of immortal fame, was finished, and he was ready to make his final unconditional surrender to the God of Hosts.

"He sleeps his last sleep,
No sound shall awaken him to glory again."

But his brave spirit, like that of the suffering Garfield, triumphed over death, and his name will live forever as immortal as that of Lincoln. The grave has no victory over such men. They vanquish Death and take away his sting!

As physicians will praise the heroism of the trying days when his life was nearing its painful inevitable close, so will the people forever applaud the valiant services he rendered his country, and the magnanimity he showed his foes in the trying days of a people's greatest peril. They will honor him much because in peace he was twice their President, and in war he was a great general; but they and all the world will honor him more because he was ever the brave, inflexible man of courageous duty, whether on the battle field facing the foe, in the executive chair confronting the people, or listening to the still small voice of conscience, in the silent chamber of death. No shadow of moral cowardice darkened his

character. No suggestion of duty to be evaded found acceptance with him, even in the face of impending death. This is what makes men high in power, great, and public names immortal.

Perhaps we ought to apologize to the reader for transcending the limits of a mere medical record of the dead ex-President; but when so great a man dies the full heart flows over regardless of proprieties of place. But is it improper, in a calamity like the present, when a mourning nation is rendering homage to the departed, that physicians, who see more of the true heroism and of the real shams of life and saw in General Grant's last illness the truest heroism of his life displayed, to give him the tribute due to him? No! Physicians are men and patriots, and those who saw how Grant died and saw how he lived the last nine months of his life, under the shadow of his impending doom, know that he lived to the last like a hero, and died as only the really great can die.

The Association of Superintendents of American Institutions for the Insane at its last meeting, at Saratoga, has still further lengthened out its long name to that of Association of Superintendents and Assistant Physicians of American Hospitals for the Insane, having declined the brief and more euphonious name of Medico-Psychological Association, proposed by one of the members.

The prolix name is still insufficiently comprehensive, for some asylums have now medical superintendents and chief-medical officers as well as assistant physicians.

The next meeting of our society with the prolix name will be at Frankfort, Kentucky.

The presidential mantle of the Association of Superintendents fell this year on Dr. Orpheus Everts, the philosophical and accomplished of College Hill.

The Presidency of the Missouri State Medical Association has been bestowed upon Dr. Geo. C. Catlett, the well-known and talented superintendent of the Missouri State Lunatic Asylum, No. 2.

The Alienist and Neurologist is on file at Geo. P. Rowell & Co.'s agency, N. Y., No. 10 Spruce Street, where contracts for advertisements and subscriptions can be made.

The Proceedings of the Fourth Congress of the Italian Phreniatric Society have been published in a volume of 500 pages, octavo, for a copy of which the translator is indebted to the polite kindness of the distinguished Secretary, Dr. Giuseppe Seppilli. It might go without saying that the contents are of a very high order of merit, and cannot fail to bring additional honor to the indefatigable cultivators of Italian psychiatry, and to command the respect and admiration of their fellow-workers throughout the civilized world. When we state that the number of papers presented was no less than fifty-five, and that in the list of writers appear names so eminently distinguished as are those of Tamburini, Luciani, Krafft-Ebing, Bianchi, Seppilli, Moreau de Tours, Adriani, Maragliano, Verga, Jonnini, Salemi, Pace, and many others, too numerous for individual designation, every reader who has had the pleasure and the privilege of becoming acquainted with their contributions to modern psychology and psychiatry, will be well prepared to justify the encomium which, with heartfelt pleasure and warm gratitude, we award to the entire work of the Congress.

It would unquestionably be very gratifying to American earnest students of mental disease, to see many, if not all, of the papers submitted to this Congress, as well as the interesting discussions evoked by them, reproduced in our own idiom; but this would be a consummation beyond journalistic attainment, and even to make discriminating selections of such as the limits of available space might enable us to present, is truly an embarrassing decision. When, therefore, we single out the contribution of Luciani, we trust that our selection will not be interpreted as an indication of invidious preference, but simply as the result of our conviction that the subject treated of is one that must be highly interesting to every assiduous student of cerebral physiology, the proportion of whom, we are happy to believe, is not inconsiderable in the list of subscribers to the ALIENIST AND NEUROLOGIST.

J. W.

Apropos of the Threatened Invasion of Cholera.—We may be pardoned for calling attention to our paper read before the St. Louis Medical Society last September, and the relation of the nervous system to cholera, its prevention and treatment through the nervous system, which may be found in the January number of

this JOURNAL, for cholera is in all, except its causative factor, the comma bacillus, a primary disease of the nervous system, its symptoms being those of suddenly overwhelming shock to the vital nerve centers, rather than those which might follow from the mechanical destruction of microbe invasion, and its evasion and resistance will be but accomplished, aside from such means as directly destroy the microbe, through a fortified and sustained nervous system.

The stimulating and tonic power of hot water to the cutaneous surface, and galvanism from center to periphery and periphery to center, galvanic baths when practicable, hot rectal injections while in these baths (the enemata charged with tannin which is a bactericide), would prove far more efficacious than sinapisms, and when the latter are employed they should never be omitted from abdomen, epigastrium and the whole length of the spine. Chloroform and ether are better for the muscular cramps of the extremities than mustard. When the bath cannot be used, cerebro-spinal and abdominal electrizations (a long electrode passed up the bowels) would not fail to be of service, care being taken to sustain and not violently shock the nervous system; to his end using a constant current, not too strong to be borne on the face of the physician. With this electrical treatment a sustaining internal therapy will not be contra-indicated, and it has this advantage, that it will take hold and help the patient in collapse when the appropriating power for medicine is gone, and it will restore waning or lately lost impressibility to medication, and thus save or assist in saving. The danger of the electrical treatment is in its being overdone by rash novices. Violent shocks of an interrupted current are not to be commended, though a mild interrupted current might be cautiously used with advantage. The true electro-therapy of cholera, however, consist principally in the correct employment of constant galvanism.

The influence of static electricity in the atmosphere in the cholera-sick room ought to be salutary, because especially of its ozonizing power, and upon the patient through the probable power of the electrical spark to destroy the comma bacilli if discharged into the rectum, and through abdomen into the colon and small bowels.

“Dangerous Physicians.”—Under this caption

the *Buffalo Medical and Surgical Journal* calls attention to the dangers following neglected antiseptic washing after certain surgical operations and post-mortems; commending washing in a corrosive sublimate solution of one part to one thousand as the only fairly safe procedure.

But there are other than antiseptic precautions necessary to be observed by physicians in order that they may not be dangerous to their patients. One of these the *New York Medical Record*, of July 11th, dwells upon, as follows:—

Could those physicians who have rendered their patients victims to the living death of an opium eater be summoned to answer this serious charge, there would be a large assembly. The mischief done by these men is seldom realized by themselves. The enormity of their unconscious guilt is more often manifest to physicians whose wide reputation brings the sufferers to them, as the last resort, for relief. It is then too often found that the remedy has proved worse than the disease, and that morphine and opium pains are what are making the patient wretched; and the cure depends upon the possibility of curing the opium habit.

The temptation of the country physician to give opium in some form is very great. His patients are scattered over a wide territory. The only visit he can make in the day must be one which will bring relief, sure and speedy, to his patient. He has no time to try if less potent medicines will prove of avail; therefore he prescribes opium.

In some instances the physician himself is a slave to the insinuating drug, and prescribes it to his patients, prompted by that feeling which opium begets of liking to have others to share its pleasures.

Another class of physicians who administer opium are those young in the profession, who wish to impress their clients with their power and skill by producing prompt results.

We would not single out the country doctor, for the incautious city physician with less excuse for the practice of too freely and too often prescribing opium, is but little less to blame.

The handy hypodermic syringe in the hands of city and country doctor alike, and the seductive and deceitful nepenthe which it so often holds, is greatly blamable for the ruin wrought; but reckless anaesthesia and chloral narcosis injudiciously ordered are likewise slaying thousands of thoughtless and reckless victims.

The great harm from these drugs comes through prescribing them instead of giving them, and from their frequent repetition.

It would be an easy matter for physicians to furnish single doses or a limited number of doses of narcotics

and hypnotics, withholding, so far as practicable, the name of the article employed.

But there are many other ways in which physicians are dangerous. A dangerous physician to the community is the sensational-emotionalist, who discovers always the most wonderful therapeutic properties in every new drug, and on inadequate data fulsomely lauds it to profession and laymen alike. Among these are the cocaine enthusiast who, with the village parson and the parish priest, discuss the remedy that is to empty the inebriate retreat and lunatic asylum, and the electrical crank who places a battery in every house for self-use, as if a medicine chest made an apothecary, or a tool chest a mechanic or surgeon. Yes, there are dangerous physicians, and every medical man, who has not a cool, calm, sceptical head for cautious discrimination in the employment of the potent agencies entrusted to his hand for good or ill, is a dangerous physician. Judgment superadded to extensive knowledge makes the safe physician, and without good judgment, knowledge, little or great, is a dangerous thing; especially in the domain of neurotherapy.

The millennium of medicine may some day come, when the logical faculties and the discerning powers shall be trained, as well as the faculty of retentiveness; when the cramming process of most of our medical schools shall be lengthened over a sufficient period of study to enable a reasonable amount of ratiocination to accompany the storing of abstract facts; when the young graduate in medicine shall represent a man who shall have been trained to deliberate and critical thought rather than to rapid exercise of prodigious memory. Some of our schools are trying to make medical men of this character now. Some are succeeding in it. But there must be many more long term schools and graded courses before the average young physician of America will cease to be dangerous. The mental discipline and acquisition necessary to qualify young men to safely practice an art as extensive and complicated as that of medicine is, can not be acquired in two short terms at college, with an added year of nominal study in a physician's office.

Ferran and His Inoculations.—Dr. Ferran in a late reply to the strictures of M. Brouardel, made to the

French Academy of Sciences, re-affirms his faith in the power of his inoculations to secure immunity for at least two months, "all morbid phenomena" he says "produced by my inoculations, like those of cholera itself, appear to come from the powerful action of some kind exercised on the nervous centers." And this is only saying what has previously been uttered (vide Jan. No. this JOURNAL.)

The trained resistance of the nervous system, inoculated under the best sanitary conditions, ought to confer immunity for at least a longer time than the system would show without a trial and training of its resisting powers. Patients whose resisting powers enable them to fight successfully through one attack of cholera during an epidemic, do not soon have another, and in time of cholera many persons have slight symptoms from slight degrees of infection which they successfully resist.

The principle of inoculation with attenuated virus to secure immunity from graver forms of disease is a correct one, as Pasteur has well proven, and Ferran ought not to be discouraged even though procedures do not promise perpetual immunity to the vaccinated.

It is the principle of physiological acclimatization and of drug tolerance. The preservative power of repeated inoculations with attenuated cholera bacilli consist in gradually accustoming the organism, through trained resistance established by gradual invasion, rather than overwhelming attack, to the presence of the virus of cholera. The same thing is seen in the tolerance established by gradually increasing doses of the most potently poisonous medicines, opium, alcohol and tobacco for example.

Ferran's method is to use the pure culture diluted in bouillon, one cubic centimeter to each arm, and to make three inoculations at intervals of five days. The resistance of the nervous system is not then overcome, but it ceases to be disturbed by the presence of these life-disturbing and death-dealing bacilli. The important fact of Ferran's dilutions if it be always as he has observed it, is that the bacillus of his diluted fluid does not reproduce itself in the cellular tissue, and this is the difficult thing to understand in the whole process. Is it the bouillon or the vital resistance that brings this about? Are the bacilli divested of their vitality and reproductive power by the bouillon, before reaching the cellular tissue through Ferran's

dilutions, or after being introduced into the system, the soil there being unfavorable for reproduction?

There is a principle at the bottom of Ferran's work, not new to him, nor new to Pasteur, the principle of trained tolerance of pathic potencies, by gradual excitation of the powers of physiological resistance, possessed by all animal organisms, and cholera vaccination may be made available through this new training of the old *vis medicatrix naturæ*.

Dr. Ferran disclaims secrecy in his late letter to the Academy of Sciences, and reminds that body that he offered to conduct his experiments before it. To this the president replies that as there is no cholera in France the proposition could not be accepted, but this is hardly fair. It is easy enough to see whether choleraic symptoms are producible by Ferran's attenuated virus.

Ferran also reminds the Academy that his offer never received any reply from the Academy. It is to be regretted he did not receive M. Brouardel more cordially, but, perhaps, the ignoring of his letter was the cause of it.

Ferran has an undoubted right to conduct his work in his own way, till he is ready to make full and final disclosures, and to do it all himself if he prefers to, but if his aim is the ignoble one, attributed to him of seeking to monopolize the work for gain by a selfish, secret and exclusive method, humanity will condemn him, and the world will bestow upon him no laurels. This does not, however, so appear from the tenor of his last letter to the French Academy of Sciences.

If Ferran's vaccinations produce only sufficient psychological security to largely divest communities of depressing dread, they will do good for a season in Spain.

But just here one is tempted to inquire, what of forty or more inoculated nuns reported to have succumbed to the assaults of the pestilence after having been protected by Ferran's inoculations?

A Melancholic Attempts to Commit Suicide While Under the Influence of Cocaine.—A lady patient of the editor's, married and barren, æt. 37 years, suffering from ideational and 'sensory depression, whose circumstances are good and whose immediate environments have in no way contributed to the act, recently attempted to take her life by drinking an ounce of laudanum, at about eight P. M. At ten A. M., and at

three P. M., and similarly for the two preceding days, the patient had taken a grain dose of Merck's muriate of cocaine; for a week before this she had taken half grain doses of the cocaine in the same manner, while before this she took half a grain of cocaine in the mornings and half a grain of belladonna and morphine in the afternoons for three days preceding.

A plan of treatment, consisting of the compound hypophosphites, arsenic, morphia and strychnia, upon which the patient somewhat improved, had been laid aside for this unsatisfactory treatment with cocaine. Somewhat better results with cocaine, but by no means satisfactory; and some recent laudatory statements concerning grain doses hypodermically having led the writer to try cocaine again.

The editor has not the time to now detail his experience with cocaine in melancholia, but in his hands it has not proven at all comparable to morphia, its effects being more evanescent, far less agreeable, and, in one case, causing disagreeable and violent cerebral excitement. Cocaine does not soothe the cerebrum like opium. No agency yet discovered will calm the commotion of psychical pain, or suppress the morbid outcry of cerebral exhaustion like opium. Meconism speedily induced and cautiously maintained, pending neural recuperation, is the best medication yet discovered for melancholia. Cocaine subserves but a secondary place in letting the patient lightly down from the heights of psychical exaltation induced by opium, with which the wise therapist temporarily supplements and masks the morbid feelings and thought of lypemania.

Opium is too well-tried and true a remedy, in suppressing the symptomatic expressions of melancholia, to be supplanted by an agency so fitful and variable in psychical impressions as cocaine. Still, when the new remedy shall have settled to its true therapeutic level, after the fulsome encomiums of overwrought enthusiasm shall have ceased to pervert our vision, may we not hope to find in it a new auxilliary resource in combating states of mental depression and exhaustion.

Treatment of Cholera.—In view of the expected visit of the cholera to this country during the coming year, any contribution to medical literature, bearing upon the treatment of this disease, should receive careful and

earnest consideration on the part of the medical profession.

By the researches of Dr. Koch, it is now known that acids are the most useful to kill the cholera microbe, and have been successfully employed by the profession in Europe. Dr. Chas. Gatchell, of Chicago, in his "Treatment of Cholera," says:

As it is known that the cholera microbe does not flourish in acid solutions, it would be well to slightly aciduate the drinking water. This may be done by adding to each glass of water half a teaspoonful of Horsford's Acid Phosphate. This will not only render the water of an acid reaction, but also render boiled water more agreeable to the taste. It may be sweetened if desired. The Acid Phosphate, taken as recommended, will also tend to invigorate the system and correct debility, thus giving increased power of resistance to disease. It is the acid of the system, a product of the gastric functions, and hence, will not create that disturbance liable to follow the use of mineral acids.

The following case is reported from Bangkok, Siam, and may be relied on as authentic:

About three months ago a native was attacked with cholera. An American Missionary attended him, and administered all medicines he could, but at last the man was so far gone that they gave up all hopes of recovery, and would do no more. Relatives of the patient begging the doctor not to give him up as lost, the doctor thought of Horsford's Acid Phosphate. After the second dose the patient commenced to revive, and in six hours after, he was pronounced out of danger.

Brain Nomenclature.—Dr. Wilder's recent paper on "Brain Nomenclature," produces the following stunning impression upon the brain of the editor of the *New York Medical Record*. Would it not be well for Dr. Wilder to present his innovations in sections and thus save the corps editorial such psychological shocks?

Professor Wilder, the president of the American Neurological Association, has distinguished himself in this direction. He has founded a new science which he calls *neuronomy*. His industry in coining words is even greater than that for searching out new cells, nerve-tracts, and blood-vessels of the brain, which is considerable. No one will dispute his title to the fame of having devoted more time to the naming of the contents of the cranium than any other English-speaking man. One is inclined to exclaim, Heaven forbid another from a like undertaking! The study of the brain now has become so complicated that it requires a bold determination on the part of the student to undertake it. It is as if he had entered a primeval forest in which wanderers, according to their own sweet will, had blazed trees in every direction until all the monarch of the forest had received one or more instructing gashes, resulting in a wilderness more confusing than ever—the old trails becoming lost, and

intermingled with the new. Could all the explorers in brain anatomy come together, settle upon a common basis, and adopt a universal nomenclature which should pass current everywhere, a great boon would be conferred.

Possibly Professor Wilder could succeed in pressing his nomenclature to a universal adoption, but it will take more than one generation to receive it with a cheerful acquiescence, and to accord to it the credit which we to-day are slow to give, and the appreciation which, justly or not, is withheld.

A Texan's Eulogium on Cocaine:—

The chemical test for cocaine is said to be picric acid, that throws down a yellow precipitate from a solution. *It would be a reflection upon its grand, peculiar physiological properties to have to resort to a chemical test in determining the nature of this drug.* When we consider that the constitutional effects of cocaine in no degree denies us the usage of a very concentrated solution, nor does it limit us as to the duration that we can with propriety keep up the local application; we have in this another *superb advantage that merits our admiration.*

Having convinced ourselves that we possess in the local action of cocaine an agent capable of controlling nervous irritation and capillary congestion, we will proceed to *see what advancements we can make on diseases with such an equipment. Hail Cocaine! Our Therapeutic Giant! (Especially in its local effects.) Does it not hold Pain subjugated in its magnificent grasp? Pain, the undermining, unrelenting, distorting enemy to nature's greatest therapeutical agent. Rest. Pain through pallid lips suppliantly yields to cocaine. Having overcome this gravid monster, like a valiant conqueror, would set to work to repair the damages done by those who have been duped into the revolt. So does cocaine assuage the distorted capillaries that pain has wrought up into bulwarks to fortify his power.*

The more extensive therapeutical application of the powers of cocaine, those to establish an armistice between the nerves of sensation and the knife, is the main purport of this article.

The above Herculean encomium is appropriately enough by *A. Sampson*, and will be continued in the *Courier Record of Medicine*.

Another Asylum for the Insane Burned.—

This time it is the Williamsburg (Va.) Asylum which takes its place in the recent list of burning horrors with "Yankton," "St. Joseph," "Flatbush," "Riverside," "St. Peter's," "Kankakee," and the "Insane Department of the Philadelphia Almshouse." What institution will come next? and how much more of this sort of illumination must the public have before it can see clearly that only fire-proof buildings should shelter the insane? Was it for this fate that Chiarugi and Pinel unfettered the insane

and Conolly and Tuke threw away their shackles? Vain are the pyres of camisoles and wristlets, straight jackets, ankle bands and crib bedsteads, which the public so much applaud, if these conflagrations are to continue.

If the lives of the imperiled and helpless insane are unworthy of consideration on the part of the commonwealths, to whose care these afflicted are entrusted by an inscrutable Providence, we would urge the plea, stronger than humanity, of *economy*. It is cheaper for States to build homes for its insane secure against fire, unless we counterbalance the argument with the number of insane destroyed in the conflagrations. States that house the insane in buildings that burn down, protect these unfortunates as the wolf takes care of the lamb.

A Non-Restraint Sermon.—News comes from Marseilles of a sad occurrence in the Saint Pierre Lunatic Asylum. A keeper put two patients, each in a separate bath, left them and went to breakfast. One of the lunatics got out of his bath, during the absence of the keeper, and turned on the tap of hot water into the bath of the other. When the keeper returned he found that the unhappy creatures had been scalded to death. In the Asylum at Sébon, near Dinau, a lunatic suddenly assaulted one of the attendants, another attendant who started to the rescue was attacked by a second lunatic. Both the attendants were knocked down and one mortally wounded. The two homicides then started for the central building with the intention of killing the superintendent. They were, however, captured and secured.

A Monument to Dr. Benjamin Rush.—Contributions solicited. The American Medical Association having determined, in accordance with suggestions previously made in these pages, to erect a suitable monument in Washington to the memory of this distinguished alienist-physician, this JOURNAL will receive and credit in its pages, subject to the demand of the committee on erection, such sums as the readers of THE ALIENIST AND NEUROLOGIST may contribute. Send in your contributions, brother neurologist, that the memory of this distinguished Corypheus in American psychiatry may be appropriately honored.

What Then?—If, when the ladies come into power

and authoritative influence in matters medical, they should arraign our generative organs as some of our gynecological friends have indicted theirs, for most of the ills their flesh is heir to, what will become of us?—and “turn about is fair play.”

Chorea and Leucorrhœa.—A lady lately asked us: “What relationship exists between *chorea* and *leucorrhœa*?” This depends very much upon whether a gynecologist or neurologist answers the question.

Exchanges will Please Take Notice that the new address of this JOURNAL is 3000 Chestnut Street, St. Louis, Mo.

IN MEMORIAM.

DR. GABRIELE BUCCOLA. — Not only in his own native land, but in every part of the world in which modern Italian psychiatric literature has become a subject of interesting and instructive study, will the premature extinction of this brilliant star of experimental psychological science be lamented as little less than irreparable loss to the specialty of alienism, and in that, we may well say, to afflicted humanity. If the moral courage of giving utterance to deep convictions, antithetic to the prevalent sentiments, prejudices or tenacious superstitions of the unquestioning, torpid, or ignorantly dogmatic, and of clothing these convictions in language unambiguous and incisive be the characteristics of a great and honest mind, then was Gabriele Buccola one of the noblest specimens of truth-loving humanity. His "Rassegna," under the title "La Psicologia Fisiologica in Italia," published in the *Rivista Sperimentale*, in the year 1880, when he was only a neophyte in psychiatry, must, by all who have carefully read it, be admitted as a production of great ability and rich erudition, amply, indeed, justifying the obituary eulogium penned by his distinguished, sorrowing preceptor, the world-known Tamburini, who has ranked him "among the most distinguished and original thinkers of our time."

Buccola was no dreaming visionary weaver of plausible or placating theories; he was a deep observer, a rigid scrutinizer, a fearless arbiter of facts; and even those who declined to subscribe to all his conclusions, or may have been unable to sanction some of the postulates of his demonstrations, must yet have been charmed with his manly candor and his unfaltering courage. That such noble mental attributes, which, in some other countries boasting of unshackled mental energy, are but too often lamentably dwarfed, should, in the present day, in the so recently emancipated Italy, shine with such almost bedazzling lustre, is surely a consummation that, half a century ago, would have entitled the prophesier of it to no low rank in the motley host of apocalyptic diviners. But so it is, and Buccola has been but one in the vast and every-day augmenting multitude of brave searchers

and fearless proclaimers of scientific truth that now overspread the entire peninsula, and even its neighboring appendage, Sicily, that has been honored in being the birthplace of Gabriele Buccola.

The translation of Tamburini's pathetic obituary on his young friend and pupil, which we now give, we but too regretfully feel, falls far short of the force and beauty of the original. This, as every earnest student of the Italian idiom must well know, is a defect inevitable. The brightness of Italian skies and the perfumes of Italian air cannot be transferred into cloudier and colder lands; neither can the rich tints and fine shadings of its language be reproduced in ruder dialects:

GABRIELE BUCCOLA.

The 5th of March, 1885, brought to us a most painful announcement. One of the brightest geniuses of the young Italian psychiatry, Gabriele Buccola, it told us was no more. A long and very painful disease snatched him from us, just when it was hoped that his projected return to the mild air of his beloved Sicily would restore energy to his enfeebled frame.

To us, who left him a few months before, when, full of vigor and buoyant hopes, he left Italy for a short time, to avail of the psychiatric clinics of Germany, whither he was sent by the government for the perfecting of his studies, it appears not yet possible that such intellectual power, such youthful energy, such mental elevation have been forever extinguished. He who, so very young, hardly thirty years, had in only five years of psychiatric studies rendered himself so illustrious as to confer honor on Italy, such as but few before had achieved; he, beloved and respected by all his masters as the most powerful genius among the young Italian psychiatrists; who, in all his scientific labors, laid up new paths and opened up new horizons, and was the first to impress on Italy the positive psychological line of direction for psychiatric studies, and in so short a career left such luminous traces, has forsaken us forever—as a brilliant meteor that amazed us by its fleeting splendor—and now has left us immersed in the darkness of grief; astounded and distressed by so great and unexpected a loss! The thread of his precious existence has been snapped before he was permitted to see rendered to his high merits that justice which was their due; just as if his soul, not wrongfully indignant, had resolved, yet in the morning of life, to escape the miseries and the injustices of our mundane existence.

But his memory, cherished and respected by so many faithful friends, affectionate colleagues and sincere advisers, will long endure, even when the heart of him who now bewails his loss shall have ceased to beat.

What then, though it would have been only just to have expected

from his rich mind still further works that would have rendered more illustrious his own name, and more have honored that of Italy; yet even already there are psychology and psychiatry, published by him, that have undoubtedly placed his name among the most distinguished and original thinkers of our time. His book entitled "The Law of Time in the Phenomena of Thought," which is everywhere justly regarded as the best synthesis existing of psychometric studies, is a monument of his genius, his culture, his originality and his industry that will alone suffice to render his name enduring.

And truly the name of Gabriele Buccola is one in that brilliant phalanx of high promise destined to shed yet more splendor before time shall have overpassed the sunset of their existence. When the day shall have arrived on which physiological psychology (now the privilege of only the few and courageous thinkers) have won that autonomous rank which, among the natural sciences, is its just right, shall form an integrant part in the cultivation of every study of the biological sciences, and shall be more than ever an essential requirement in every student of mental diseases, then will the name of Gabriele Buccola be everywhere remembered as that of one of the most able constructors of experimental psychology, and one of the most daring initiators of its practical applications.

In the psychiatric institute of Reggio, which will ever regard as a great honor its selection by him, as the seat of his first psychiatric studies, and where he has left uncancellable heirlooms of affection; to the *Rivista Sperimentale*, which had the good fortune of publishing his first labors in experimental psychology and all those on pathological psychology, and which always ranked him among the most able of the conductors and contributors, and this very number has the mournful honor of publishing his last, and one of his most important works, completed by him during his sojourn in Germany, and thence sent by him to the *Rivista*. The death of Gabriele Buccola is a true and heavy family affliction, and all the more heavy and painful to him who, recalling the nobility of his soul and the loftiness of his character, knows what a noble heart has been extinguished with that choice mind, and what a precious friend has been lost to him in that brave scientist.

But of the rare and superior gifts of his mind and his heart, and of his life and labors, we shall, with a less oppressed spirit, treat at length in our next number, in which the most affectionate friends, colleagues and disciples of Gabriele Buccola will endeavor to render due homage to his dearly loved memory.

TAMBURINI.

HOSPITAL NOTES.

TENNESSEE—Tennessee Hospital for the Insane, at Nashville.—Biennial Report. Number in hospital December 19th, 1882, 408—males 209, females 199. Admitted from December 19th, 1882 to December 19th, 1884, 222—males 114, females 108. Whole number of patients in term 630—males 323, females 307. Patients discharged from December 19th, 1882 to December 19th, 1884, 218—males 111, females 107, as follows: recovered 67; males 32, females 35; improved, 60; males 23, females 37; unimproved 23; males 10, females 13; escaped, 6 males; died 62; males 40, females 22. Patients remaining December 19th, 1884, 412; males 212, females 200; white 372, colored 40.

The report of Dr. Callender shows how much may be done with very small means. It also discloses an indifference on the part of state officials towards caring for this unfortunate class. Hospital accommodations for an average number of 400, in a State whose population is a million and a half. By the census of 1880, Tennessee had 2,404 insane within her limits; provided for as follows: in insane asylums 385; in almshouses having no insane department 239; in jails 23; at home 1757. We think Tennessee can claim to be the banner state for not caring for its afflicted beyond death. When Dr. Callender with such meagre appliances can show such tables as above, and support the inmates of his institution at an average cost of \$173.68 per capita, what reason in heaven's name exists for leaving 1757 lunatics at home, which merely means at large, tramps, vagrants, *et id omne genus*.

OHIO—Dayton Asylum for the Insane.—Annual report 1884. Total number under treatment during the year, 789; males 392, females 397. Admitted during the year, 188; males 102, females 86. Discharged during the year, 200; males 102, females 98, as follows: Recovered 60; males 29, females 31. Improved 68; males 35, females 33. Unimproved 34; males 24, females 10. Not insane: male 1. Died 37; males 13, females 24. Remaining November 15th, 1884, 589; males 290, females 299.

That such difference to the health of hundreds who

are unable to care for themselves, as Dr. Miller exposes in this report, is utterly incomprehensible, and a disgrace to the State of Ohio in this age of scientific treatment of the insane. He says: "We are without a sufficient reservoir, or any other means of preventing contamination of the water; the dam thrown across the small stream from which water is now taken, does not furnish anything like a sufficient reservoir, and only serves as a catch basin for the filth and surface water from the surrounding hills during rainy weather; and when it is said that this water is used for drinking and laundry purposes, without even passing through a filter, the great danger as well as inconvenience are at once apparent."

Cleveland (Ohio) Asylum for the Insane.—Annual report for the year 1884. Total under treatment during the year, 845; males 438, females 407. Admitted during the year, 220; males 119, females 101. Discharged during the year 228; males 128, females 100, as follows: Recovered, 87; males 50, females 37. Improved, 41; males 16, females 25. Unimproved, 63; males 34, females 29. Died, 37; males 28, females 9. Remaining, November 15, 1884, 617; males 310, females 307.

Dr. Strong gives a brief retrospect of his nine years' superintendency of this institution, and is certainly to be congratulated upon the good work achieved. The doctor makes some pertinent remarks on "Our Care and Neglect of the Insane in Ohio," taking occasion to say that the lack of accommodation for this unfortunate class "does not lie in the sensitiveness of the taxpayers; it is due to the tenderness of political corns and the hesitation of sensitive legislators." It is pleasant to see by the concluding paragraph of this able report that the doctor, amidst all the trials of hospital life, has not lost his sense of humor.

Athens (Ohio) Asylum for the Insane.—Annual report for the year 1883. Total number under treatment during the year, 841; males 406, females 435. Admitted during the year, 216; males 109, females 107. Discharged during the year, 206; males 96, females 110, as follows: Recovered, 98; males 53, females 45. Relieved, 17; males 7, females 10. Unimproved, 48; males 12, females 36. Died, 43; males 24, females 19. Remaining, November 15, 1883, 635; males, 310, females 325.

Dr. Richardson's report is gratifying as showing the

advantage and, what to the taxpayer is more important, the economy, which familiarity with hospital management brings about. The *per capita* cost, including salaries to officers, was the small sum of \$158.84, and this, we are assured, without the interests of the patients suffering in any particular. Another point of interest is the extension of out-door exercise and employment, with the never failing results of greater comfort to the patients and increased satisfaction to the management.

Longview (Ohio) Asylum at Carthage. — Annual Report, 1884. Total number under treatment during the year, 882; males 433, females 449. Admitted during the year, 220; males 119, females 101. Discharged during the year, 208; males 112, females 96, as follows: Recovered, 56; males 29, females 27. Improved, 53; males 22, females 31. Unimproved, 33; males 18, females 15. Not insane, 4 males. Died, 58; males 36, females 22. Eloped, 4; males 3, female 1. Remaining, October 31, 1884, 674; males 321, females 353.

That Dr. Miller's management is highly successful appears from the report of the Board of Directors, as follows: "The asylum is in first-class condition in all its departments. The patients are kindly and humanely cared for, well fed, well clothed, and in the enjoyment of as much freedom from restraint as seems consistent with their safety and welfare."

Dayton (Ohio) Asylum for the Insane. — Annual report for the year 1883. Total number under treatment during the year, 763; males 375, females 388. Admitted during the year, 179; males 100, females 79. Discharged during the year, 162; males 85, females 77, as follows: Recovered, 64; males 39, females 25. Improved, 29; males 15, females 14. Unimproved, 29; males 14, females 15. Died, 40; males 17, females 23. Remaining, November 15, 1883, 601; males 290, females 311.

With a year more of most successful hospital work Dr. Tobey contents himself with a brief and practical *résumé* of results.

DR. EDWARD COWLES, Superintendent of the McLean Insane Asylum, at Somerville, Mass., is to give a course of lectures on Mental Diseases at Dartmouth Medical College, next autumn.

REVIEWS, BOOK NOTICES, &C.

DE L' APHASIE ET DE SES DIVERSES FORMES PAR LE DR. BERNARD. (On aphasia and its various forms.)

This is a book of 270 pages published by the *Progrès Médical*. Dr. Bernard has, for several years, been intimately connected with Charcot; he is perfectly familiar with the methods employed and the researches carried on at the Salpêtrière. He is, therefore, well qualified to present to the medical public the present state of the question of aphasia, as taught by the great neurological path-finder of Paris, having had an opportunity of witnessing his investigations on the various forms of aphasia and participating of them himself ever since this subject became paramount at the hospital named.

It is well-known what an amount of confusion used to reign in the medical profession and authorities on the subject, as to the definition, nature and pathology of aphasia, even after Trousseau and Broca. The classical description of the former, and the anatomical studies of the latter, had opened a new era in the knowledge of an obscure and intricate affection, long known, but little understood up to their times. It was a misfortune for our science that there existed an antagonism between these two great men, which was more of a personal than of a scientific nature. Trousseau never forgave Broca his superiority as a pathological anatomist, after the latter had shown him up in a rather dramatic manner as a rather superficial investigator at a post-mortem held on an aphasic at the Hôtel-Dieu. When the warfare between the two men had ended it had become an axiom with the adherents to the doctrine of cerebral localization that the clinical pictures of aphasia, as drawn by Trousseau, corresponded to a lesion of Broca's convolution. The latter tried his best to disabuse the profession of this error. The aphasia of Trousseau had too wide a range as to be referable to that circumscribed locality, the foot of the left third frontal convolution. Broca never claimed that this was the center of speech in its entirety, but only of a part of it—of articulate language. Thus the matter rested, at least, in France. After Broca it was hazardous for anybody to speak of aphasia as not being identical with a lesion of the convolution named in his honor. There was a scientific terrorism exercised by the heads of the profession threatening every heretic with the anathema. The works of Wernicke and Kussmaul created a new era in the matter under consideration in Germany. The felicitous expressions: Word-deafness and word-blindness, being separate forms of the symptomatic complex, known as aphasia, instilled a new life into independent thinkers.

In March, 1883, an unequivocal case of word-blindness was observed by Charcot at the Salpêtrière. Thus was inaugurated a series of brilliant researches which have added immensely to our stock of knowledge.

Charcot amplified and corrected the discoveries and conclusions of the German observers, and, what is more, presented the question in such a clear and perspicuous manner that light reigns to-day where there was darkness and confusion before. Kussmaul's work on the derangement of language will, for all time to come, stand as a monument of great intellectual labor, but its philosophical nomenclature made it difficult to understand, even to the average German physician. To Charcot's acumen of mind, to his plastic manner of putting and presenting things, we owe the present clearness of the subject in question. It was a happy thought to complete Kussmaul's diagram illustrating the various forms of language and their connection, by adding to and combining with it the simple word *cloche* (bell). From want of time we cannot give the diagram in this number of *THE ALIENIST AND NEUROLOGIST*, but we shall try to do so on a future occasion.

The history of aphasia, as given by Bernard, is very interesting and instructive from several points of view. We learn to appreciate at their just value, the works of Gall, Bouillaud, the Dax's (father and son), Trouseau, Broca, and the other investigators. The arbitrary and fantastic assertions of Gall are reduced to their proper level. His doctrine is, at most, a piece of fancy, devoid of anatomical foundation. Bouillaud is the initiator of the study of aphasia. He sides with Broca against Trouseau and defends his claims of priority against the assertions of Grasset, who tries to vindicate to the Dax's the lion's share of the discoveries in aphasia. Grasset goes even so far as to claim the discoveries of word-blindness and word-deafness for Lordat, always deprecating the works of Broca and the Parisian investigators. He would fain gather in all the honors for Montpellier and its environs. On reading the documentary evidence, furnished by Bernard, the impartial reader must come to the conclusion that Grasset's claims are ill-founded. Féré has criticized these efforts at annexation in the following manner:

"Broca was the first who expressed himself with precision and showed the truth. Doubtless, Lordat described affections, in which Grasset, forty years after, had a right to recognize motor aphasia, word-blindness, etc. But can we say that, because a clerk of the court, two centuries ago, described the contortions of an individual suffering from convulsions, and because to-day we recognize in them the classical stages of a hysterical attack, can we say that that clerk knew and described hystero-epilepsy? We recognize only that he has drawn a good document after nature. Lordat has done no more; he has so little distinguished the different troubles of language from which he suffered, that he has not thought proper to give them a name, and that his distinction has been comprehended by Grasset only after the works of Kussmaul, Wernicke, etc."

The questions relating to priority are discussed with warmth and enthusiasm, and the whole book breathes that piety and veneration for the teacher which is characteristic of the French.

A very valuable chapter is devoted to the medico-legal aspect of aphasia.

The following are the conclusions arrived at by the writer, conclusions

which may be considered as embodying the views of Charcot and his school:

I. Aphasia is an amnesia of signs.

II. The complex and variegated symptoms comprised under the name "aphasia" have been observed and noted at all times. Before Bouillaud no synthetical study of it had been made. Broca brought the first light of analysis into a conglomerate of facts, and fixed definitely the symptoms and anatomical localization of one of the forms of aphasia, namely: of *aphemia* or abolishment of articulate language.

III. By a vigorous application of the anatomo-clinical method Charcot established, further, the existence and independence of the other forms of aphasia previously contested; *agraphia*, word-deafness and word-blindness, forms which had been distinguished by Marc, Wernicke and Kussmaul.

IV. The word, like the most part of signs, is not a unity, but a compound of, at least, four elements. It must be heard and articulated, read and fixed by writing. Aphasia bears on one or several of these elements; hence there are four principal forms of aphasia.

V. Word-blindness is the amnesia of figured signs, of the written word in particular. The patient sees the signs, but cannot interpret their meaning. The left inferior parietal lobule is constantly implicated in the cases of word-blindness. Hemianopsia has always accompanied them so far.

VI. Word-deafness is the impossibility to comprehend the heard word and even the language heard. It depends on a lesion of the first left temporo-sphenoidal convolution.

VII. *Aphemia* or loss of the memory of the coördinated movements necessary for the articulation of the word results from a lesion of the foot of the third left frontal convolution. It is generally accompanied by an hemiplegia of the right side.

VIII. *Agraphia* is the abolition of the coördinated movements of writing. Its anatomical seat is probably the second left frontal convolution.

IX. In the left-handed, the cause of aphasia must be looked for in the right hemisphere.

X. Besides, all the representations of language, all the languages may be affected by aphasia.

XI. The independence and anatomy of every form of aphasia result, also, from their comparative study in cases where they coëxist in the same patient, for in such cases the various means of expression are very unequally affected.

XII. The symptoms of aphasia are extremely variable, from one moment to the other, with the same patient, which imposes on the physician, and especially the legal physician, the duty of repeatedly examining the patient.

XIII. No formula can be given of the moral or intellectual capacity of the aphasics.

XIV. Whichever may be the form, the course, and the cause of aphasia, the prognosis must always be a guarded one. L. B.

A NEW BOOK.—Dr. William W. Ireland, Preston Lodge, Prestonpans, formerly of H. M. Indian Army, and author of the "History of the Siege of Delhi," "Idiocy and Imbecility," &c., has in the press a work entitled "The Blot Upon the Brain: Studies in History and Psychology," which should prove highly interesting, not only to medical men, but also to non-professional readers. The studies embrace such subjects as Hallucinations, especially of Sight and Hearing; the Hallucinations of Mahomet, Luther, Joan of Arc, and Swedenborg; the Insanity of the Cæsars, Mohammed Toghlaq, and Ivan the Terrible; the Hereditary Neurosis of the Royal Family of Spain; on St. Francis Xavier; Thought without Words; Fixed Ideas; a Mad Family; Left-handedness; the Functions of the Double Brain, &c. The work will be published by Messrs. Bell & Bradfute, Edinburgh.

A MANUAL OF MEDICAL JURISPRUDENCE, WITH SPECIAL REFERENCE TO DISEASES AND INJURIES OF THE NERVOUS SYSTEM. By Allan McLane Hamilton, M. D., one of the Consulting Physicians to the Insane Asylum of New York City, etc., etc., with Illustrations.

This book is one of Birmingham & Company's publications, which first appeared in 1883. It has been brought tardily to our attention, but it is one of those books which it were better to have seen late than never. It is presented as an elementary treatise and book of reference for lawyers and doctors. "Its scope is limited," as the author states, for he has "considered only those conditions of the nervous system which now-a-days are so often the bases of litigation," and as such we are sure the talented author's expressed hope "that it may prove useful" will not go unrealized.

Insanity in general and in its medico-legal relation, hysteroid conditions and feigned diseases, epilepsy, alcoholism, suicide and spinal injuries are all succinctly and, for the space occupied, quite thoroughly presented. These subjects indicate the scope of the book.

In a book in which all the subjects are interesting, it is difficult to single out particular parts for discussion; but it is no disparagement to its general merits to say that the discussion of spinal injuries and concussion is the most instructive and interesting of any similar matter that has appeared in any book since Erichsen's classical treatise on "Railway Spine," was given to the profession.

After discussing the subject of real and simulated injuries of the spine, and assenting to Hodge's and Rigler's conclusions that the majority of the cases claimed to result from railway injuries are probably deceptions, the author indicates his own convictions, as follows:—

"The fact remains that after sudden and violent shock to the human body, even though there may be no apparent external mark or wound, a train of symptoms, indicative of profound functional disturbance, may remain for a variable time and may be followed by unmistakable organic disease of the spinal cord or brain." * * * * "So far as known the disease known as railway spine does not follow the hurling of a passenger against the seat or woodwork of a car, so much as it does the indefinable molecular change, which is supposed to occur when the car is suddenly stopped, when under way, and going at the rate of from twenty to forty miles an hour."—p. 360.

This entire subject is interesting reading, and the author has here compressed a great amount of valuable matter in small space. He does not give prominence, and we think he ought to have done so to the subject of traumatic hysteria, a fact which should have a place in medical literature, as cerebro-spinal concussions may certainly bring out latent hysteria if they may not develop it *de novo*.

There is just ground and ample warrant in clinical observation also for an extended record of the psychical sequences of cerebro-spinal concussion due to railway shock. The author in the discussion of "insanity and spinal concussion, entertains, no doubt that fear and mental shock incident to the excitement of a collision, may give rise to derangement of the mind, and that grave-hysteria and hypnotic states may be induced thereby," but does not intimate that insanity and allied conditions may result from the "undoubted molecular disturbances" of cerebral concussion.

The subject of insanity in its clinical and forensic relations is well handled, but the author does not, in our opinion, give sufficient credence to insanity in its affective forms. He may be classed among the sceptics in regard to that unfortunately named but undoubted form of mental aberration called moral insanity, in which the psychical mechanism is swayed by organic delusional feelings, and the reason, though ordinarily capable of rational action, is abeyant and subservient to the morbid impulses and feelings. Delusional conduct without apparent perversion of the reasoning powers is a clinical fact in psychiatry, and the disorder may result from a perverted feeling, not founded in any of the special sense perceptions or in any primary abnormal concept of the mind. This is insanity in its psycho-sensory or affective form, so well discerned by Prichard and his followers in England, and his most illustrious disciple Isaac Ray, in this country, whose "Jurisprudence of Insanity" should be always an inseparable companion to the book before us.

Dr. Hamilton discusses in a pleasing and instructive manner the subjects of aphasia and aphasic insanity, and the question of feigned insanity is ably presented, with many familiar and historical cases, but he omits that equally interesting, though less common or practical subject, the simulation of insanity by the insane, a subject which has been and may again be most perplexing in its medico-legal relations.

We cordially commend this book as the best ready-reference manual extant on the subjects of which it treats. It contains much in little compass. It more than fulfills the unpretentious promise of the author's preface.

C. H. H.

"IL MANICOMIO GIORNALE DI PSICHIATRIA. ORGANO DEL MANICOMIO INTERPROVINCIALE V. E. II. The Interprovincial Asylum Journal of Psychiatry, Victor Emmanuel II.

We acknowledge, with profound gratification and sincere assurance of fraternal welcome, the receipt of the above able and promising Italian periodical, and we most cheerfully meet the request of the directors and editors for exchange with *THE ALIENIST AND NEUROLOGIST*, well convinced that in so doing we shall but exhibit the high appreciation in which the labors of the cultivators of Italian psychiatry are held in this Western world.

The present issue consists of two parts: the first of which is devoted to general psychiatry, and covers 211 octavo pages, presenting five original articles — one from the pen of Professor Sylvio Venturi, medical chief of the new Interprovincial Asylum, at Nocera Inferiore; two from Drs. Domenico Ventra and Angelo Zuccarelli, assistant physician in the same institution; one from Drs. Sylvio Venturi and Canget Raffele; and the fifth from Dr. Geunaro Caruso, another physician of the establishment. We have perused these valuable articles with great interest, and we can not refrain from congratulating the Asylum of Nocera Inferiore on its good fortune in having over it gentlemen of such professional merit. Most sincerely do we hope that their labors will be crowned with success, and they will bring additional laurels to the already ample wreath of Italian psychiatric literature — a literature which is now fast bringing forward the glorious peninsula to the front of modern scientific advancement, and with which we have, through the pages of *THE ALIENIST AND NEUROLOGIST*, endeavored to make the American public more intimately acquainted. It is as pleasing to ourselves as it must be gratifying to our Eastern brethren, to know that our efforts in this direction have met with general approval.

The second part of the Nocera Journal is devoted to a description of the new establishment, and to an elaborate series of statistical tables, illustrative of its operations. This part will probably be omitted in future issues. Few experienced alienists attach much importance to this sort of information; they generally prefer to base their judgment of the efficiency of asylums for the insane on more reliable and less fluctuating evidence, and they seldom fail to sympathize with the overworked clerical drudges on whom this sort of labor usually falls. Should it happen to devolve on any of the members of the medical staff (and unless it does so fall, it will be but indifferently executed,) the inevitable conviction is that the time spent over it might have been devoted to far more useful purposes.

The number of psychiatric periodicals now issuing from the asylums of Italy is truly surprising. No other nation, we believe, competes with it, and certainly none excels it in the high merits of the productions offered. That which must, to American readers, appear as almost marvellous is the fact that one of the administrative requirements of Italian alienists is that the medical officers of each asylum shall publish regularly three or four times a year a journal devoted to psychiatric and kindred sciences. The Nocera Journal is promised to appear three times yearly. When we confront the fact that the whole of the asylums of North America can boast of only one journal, we feel ashamed of our torpor. Our own journal has no claim either to asylum parentage or governmental patronage; it is a purely private and personal enterprise. It is, however, very pleasing to us to be able to say that our roll of asylum contributors is both ample and respectable, and we are very grateful for the encouragement given to us by the increasing number of our subscribers.

We shall not fail to enhance the merits of the *ALIENIST* by reproducing as heretofore, in our pages, such articles of our Italian exchanges as may appear to us to promise gratification and instruction to our readers.

STUDIES FROM THE BIOLOGICAL LABORATORY. Edited by H. Newell Martin, M. A., D. Sc., M. D., F. R. S., and associate editor, W. K. Brooks, Ph. D. The subscription price, for the volume, of about 500 pages, is \$5.00 payable in advance to Mr. N. Murray, Johns Hopkins University.

Single numbers may also be purchased, at a price varying with their size and the number of plates they contain.

In future no articles will be reprinted from the Journal of Physiology, nor sold at a reduced price to the subscribers to that Journal.

This publication is issued from time to time, containing a majority of the original scientific papers published by members of the Biological Department of the University.

Contents of Vol. III., No 3.—VIII., The Cranial Muscles of *Amia Calva* (L), with a consideration of the relations of the Post-Occipal and Hypoglossal Nerves in the various Vertebrate Groups, by J. Playfair McMurrich; with plate. IX., On the Endings of the Motor Nerves in the Voluntary Muscles of the Frog, by Chr. Sihler; with plate. X., Marine Larvæ and their relation to Adults, by H. W. Conn; with plates. Contents of Vol. III., No 1.—I., Significance of the Larval Skin of Decapods, by H. W. Conn; with plates. II., Life History of *Thalassema*—abstract—by H. W. Conn; with plate. III., Of the Gill in some forms of Prosobranchiate Mollusca, by Henry L. Osborn; with plates. Contents of Vol. III., No, 2.—IV., Notes on the Composition of the Blood and Lymph of the Slider Terrapin (*Pseudemys rugosa*), by W. H. Howell. V., The Origin of the Fibrin formed in the Coagulation of Blood, by W. H. Howells. VI., On the Action of Carbolic Acid, Atropia, and Convallaria, on the Heart; with some Observations on the Influence of Oxygenated and Non-oxygenated Blood, and of Blood in various Degrees of Dilution, by H. G. Beyer; with plate. VII., The action of Intermittent Pressure and of Defibrinated Blood upon the Blood-vessels of the frog and the Terrapin, by L. T. Stevens and F. S. Lee,

The most interesting of the above to readers of this JOURNAL are articles IV., V., VI., VII. and IX.

Dr. Chr. Sihler, discussing the endings of the motor nerves in the muscles of the frog, brings forth evidence supporting the view that the terminal nerve-fibres are situated on the outside of the sarcolemma, and do not, as is taught by most authorities, penetrate this envelope.

The author in this paper lays special stress on malt extract and reconstruction nutrition. The syrup of the iodide of iron, in *teaspoonful doses*, would greatly have abbreviated his cases in duration, especially if chloral had been given regularly at night when required,

THE SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF CONNECTICUT. By John S. Butler, M. D., President.

This report is before us, and is an interesting, instructive and meritorious document. "Health and Religion," "Hog Cholera," "The Park River Nuisance, and its Bacteria," "Inland Mortality," "Glucose," are well discussed. The proceedings of the "American Public Health Association" are given in brief, and some excellent "Instructions for Dis-infections." The Registration Report is also quite lengthy and complete. A brief

paper on typhoid fever gives the usual instructive warning as to its source in polluted water, and the "Suggestions Concerning Cholera" are of general interest.

This is the last report, we regret to say, that will appear under the auspices of our esteemed and venerable friend and eminent physician, Dr. John S. Butler, whose distinguished services, in connection with Hartford Retreat, for more than one-quarter of a century, are not yet forgotten by his countrymen. Dr. Butler is now a vigorous octogenarian, who illustrates in his own person that a life of increasing mental activity is not incompatible with a healthy longevity. We could name several asylum superintendents still engaged in active usefulness to mankind, not all of them disconnected from asylum management, who have passed four score years.

THE PEOPLE'S HEALTH JOURNAL OF CHICAGO. Editorially conducted by Doctors L. D. and S. Ida Wright Rogers, and published by the People's Health Journal Company, 441 Dearborn Street, Chicago.

This is a new and promising monthly venture in the field of popular medical journalism. Its contents are all valuable and instructive, and written in a style within the comprehension of the untechnically-schooled popular mind. Such journals do good by enlightening the people in regard to the laws of health from a hygienic standpoint, and the resources of the profession. They help the people to distinguish between the true and the false in medicine, and to wisely discriminate between the really learned and capable and the dangerous little-learned and incapable pretender in medicine.

If future numbers appear as well as the two before us, the journal will continue to have our best wishes. The paper on Physiology and Hygiene, in the July number, by Dr. Justin Hays, is well worth the subscription price to any layman.

Aus dem Verein für innere Medicin. Ein Fall von fortschreitender muskulärer Dystrophie (Hypertrophie mit Fettdegeneration und wachsartiger Degeneration) an den Unterextremitäten. Im Verein für innere Medicin am 2. März 1885 vorgetragen von Prof. A Eulenburg. [Reprint.]

Women as Insurance Risks. An Address Delivered before the Chicago Cabinet of the National Union, November 15th, 1884, by Mary Weeks Burnett, M. D., National Supt. Dept. of Hereditary, W. C. T. U.; President of the National Temperance Hospital, and Medical College Association.

Education as a Factor in the Prevention and Cure of Insanity. By Jamin Strong, M. D., Superintendent Cleveland Asylum for the Insane. Read before the Association of Medical Superintendents of American Institutions for the Insane, at Saratoga, N. Y., June 17, 1885. [Reprint.]

The Nature of Mind and Human Automatism. By Morton Prince, M. D., Physician for Nervous Diseases Boston Dispensary, physician Out-Patient Department, Boston City Hospital.

Proceedings of the Alumni Society of the Medical Department of the University of Pennsylvania for 1885; with the Annual Address. By Eugene Grissom, M. D. Delivered March 24, 1885.

Insanity as a Plea for Divorce. By Geo. H. Savage, M. D., Medical Superintendent Bethlehem Hospital, London. Read before the New York Medico-Legal Society, June 17th, 1885. [Reprint.]

Ein Fall von Tabes Dorsalis Complicirt mit Progressiver Muskel-Atrophie. Vorgestellt in der Berliner med. Gesellschaft am 10 December 1884, von Prof. A. Eulenburg. [Reprint.]

Address Delivered at the opening of the Summer Session Clinic for Diseases of the Nervous System, McGill University, April 14th, 1885. By Henry Howard, M. D. [Reprint.]

Report of Joint Special Committee to Investigate the Management of the Hospital for the Insane. To the senate and house of representatives.

Epilepsy. By L. W. Baker, M. D., Superintendent of a Hospital for Epileptic Children, Baldwinville, Mass. [Reprint.]

Ueber Statische Reflexkrämpfe. Von Dr. Albrecht Erlenmeyer in Bendorf a. Rh. Zweiter vermehrter Abdruck.

Note sur la Cécité Verbale. Par le Dr. de Watteville, médecin de l'hôpital St. Mary, à Londres. [Reprint.]

Provision for the Insane in the United States; a Historical Sketch. By Frederick Howard Wines. [Reprint.]

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ORIGINAL CONTRIBUTIONS.

Physiological Psychology in Italy.*

By GABRIELE BUCCOLA, M. D., Italy.

ARDIGO.—Psychology as a Positive Science.

HERZEN.—Psychical Motion and Consciousness, 1879.

SERGI.—Elements of Psychology, 1879. ID.—On the Nature of Psychological Phenomena, 1880.

MANTEGAZZA.—Essay on the Transformations of the Psychical Forces, 1877.

SEVERINI.—On the Measure of Time and Quantity in Psychological Life, 1877.

RICCARDI.—Instinct. Studies on Comparative Psychology, 1877.

LICATA.—The Physiology of Instinct, 1879.

SICILIANI.—Introductory Observations on Modern Psychogenesis.

COTEMPORARY psychology has broken the circle of metaphysical traditions, and it now advances with alacrity on the royal road of objective observation and experiment. Analysis of the facts that form the substratum and represent the mechanical conditions, by means of which sensation, thought and consciousness are evolved, have now proved that the existence of a special *quid*, which lives in the organs and presides over them, an unextended substance, a pure essence, which has the characters of unity and simplicity, is an illusion purely subjective and abstract. It is the thesis of metaphysics which hunts after the *noumeni*, without perceiving that the universe is a pure phenomenality, that higher than

*Translated from the Italian of *La Rivista Sperimentale di Freniatria*, Anno VI., 1880, by JOSEPH WORKMAN, M. D., Toronto, Canada.

phenomena thought cannot soar without the risk of falling into abstractions, and that, in fine, the limits of knowledge are the limits of induction, and this cannot give to us anything beyond phenomenal life. We believe we are on the path of truth when we say that it is a chimerical conceit, indeed, an intellectual morbidity, to force the human intellect into the search of substances and the intimate nature of things; on the contrary, that which constitutes a secure datum of cognition is phenomenon. Phenomenon, that seems to be something fluctuating in a reality, may, on the contrary, furnish to us notions and firmly fixed laws; truly, as one of our most eminent thinkers, Ardigò, observes, there is no other nature of cognoscitive data, no other firm basis of scientific principles, outside the experimental, which results uniquely from the constant and uniform repetition of the same phenomena. Science does not halve nor adulterate, nor destroy itself by its reduction to mere fact; that is an old prejudice, which governs the minds of the many, and has been maintained in life by the aprioristic rules of metaphysics, which, seeming to be real, locates in every several thing two strata, one exterior, which is phenomenon, and one interior, which is the substance; or, better to say, which intuitively sees in every thing a special essence and certain phenomenalities which accompany this essence. In the essence, it says, there reposes a true and immutable reality, based on eternal and universal reasons; in the phenomenon, on the contrary, there wavers an uncertain and most mobile reality, from which that summary of laws which carry with them the imprint of scientific laws can never be evolved.

These conceptions have been transferred into the domain of psychical facts, and there has come forth an empty and unfruitful psychology, which has lost itself in the fantastic researches of problems not only useless, but unsolvable, and without any concrete or effective foundation. Whilst the physical sciences, once also prostrated

under the car of scholastic quiddities, have definitively deserted the field of philosophic necromancy, and have been called sciences purely phenomenal, and by the sole attentive study of facts interpreting and inducting the laws which regulate the motions of nature; alike in the immense sidereal spaces as in the infinitely small interstices of ether interposed between molecule and molecule, psychology, which ought to be the physics of human thought, has, on the contrary, remained entangled in the meshes of the absolutes and the essences, tenaciously, as the polypus to the rock, clinging to the old aprioristic method which shuns induction and experiment. And whilst not only the physico-chemical sciences, but also biology, which should ever be the foundation of every psychical study, canceling from its pages the vital spirits, has, by the aid of comparative morphology and of embryogeny, luminously demonstrated the unbroken unity of the various organized forms, from the protoplasmic amœboid to the vertebratum, furnished with the richest specificized apparatus of nervous mechanism, and has, also, by daring inductions, rendered legitimate by the general laws of nature, demonstrated the more marvelous unity of the two organic worlds, psychology has, on the contrary, persisted in the duality of spirit and matter, creating abstractions that explain neither the mechanism nor the laws of the production of mental facts. It thus appears, from retracing the various phases of human thought, that psychology has, up to our times, remained outside the concordant harmony of its kindred sciences, imbued with methods which are not the ordinary and co-natural to human intelligence. To abandon the path of the absolute and of substances, because impervious to our thought; to rest in the relativity of facts, and be content with the study of phenomena and their conditions: here is the scientific programme: The dominion of science, as an illustrious physiologist has observed, rests upon the analysis and the measuring of every several fact; but when we

attempt to penetrate the essence, and for this purpose suppose a mobile immaterial in the phenomena, imagining a force outside of these and yet governing them, then we shall have fantastic schemes which do not conform to the reality of things. If science has rejected the substantiality of the physical forces, it ought reasonably to reject the substantiality of psychical energy. How many phantasms, isolated by abstraction and designated as substantive, has not experience scattered? The vital principle, the vegetative soul, the occult qualities, the specific virtues, the affinities, the appetites, the archæi: Behold a legion, a cohort, of mysterious agents, that were once believed to be indispensable in explaining the transformations of matter, and to-day, as words devoid of sense, they are scarcely recorded in history. In the physical, as in the moral world, only phenomena and their conditions and dependences subsist; the one conceived under the type of sensation, the others under that of movement. (*Taine.*)

But, at last, the true and sane doctrines of science begin to pervade the field of the "spirit," once open to intuitive speculations, and they bring with them the promise of a fruitful future.

He that follows, with an attentive eye, the busy movement that pervades modern science, will readily discover that two grand conceptions dominate the entire development of psychology, transforming its contents, and these two conceptions are the theory of evolution and the application of scientific methods to mental phenomena.

The law of evolution, which explains the universal transformation from the homogeneous into the heterogeneous—here it is, condensed by Spencer into a few words: "Every active force produces more than a change, every cause produces more than an effect." Confronting the fauna, so rich and various in forms, which the present geological period presents, just as when confronting the immense complexity of psycho-

logical phenomena exhibited in uncivilized man, our scientific position does not change; both have successively proceeded, by slow and gradual development, through titanic conflicts, sustained in the long periods of cosmical life, from primitive states more simple, homogeneous and indefinite. As every fact succeeding proceeds from one antecedent, so all physical and mental facts, all biological and sociological, have been derived from antecedents which, traced back by induction from age to age, as far as can be reached by the secure laws of hypothesis, permit us to discover a simplicity greater in proportion to our greater distance from the present time, and show us in the nebulae, the first stage of the solar system; in the amœboid movements of the protozoa, the embryonal design of intellect; in the monera, the preparation of the vertebrate, and in the tribe of the savage the germ of the constitution of civilized peoples. This grand evolutive conception, applied to mental facts, has generated a science much, nay substantially, different from the old psychology, which was interwoven with abstractions, pre-conceptions and apriories; it has rendered possible comparative psychology, as Herbert Spencer has delineated it, and, likewise, the psychology of infancy, whose first lines were so wondrously foresketched by Darwin and Taine. In fine, instead of that idolatrous image of science, which pretends to investigate the manifestations of mind from the static point of view, it substitutes the true personality of a science, psychogenesis, which studies the facts in their successive development. Desiring to summarize in a few words the differential characters of the ancient and the modern psychology, we will say, with Ribot, that the modern differs from the ancient in its fundamental tone, in its aim, and in its processes; that is to say, it is not metaphysical, it studies only phenomena, and it follows the methods of the biological sciences. Whilst the old doctrines exhausted themselves in pure introspective observation, which rendered no account of the psychical phenomena of the child, the

savage man, or the insane, did not recognize in the brain the organic conditions of thought, and suspected not the immense efficacy of the unconscious, which is the foundation of mental life—science to-day not only appeals to objective observation, that is, to the method which scrutinizes the psychical energy in the facts which transfer it from consciousness, but even with singular audacity it has recourse to experiment. Physiological psychology, the nature of which is not descriptive but explicative, turns itself, as Kundt has well said, to the examination of elementary psychical phenomena, taking its departure from the physiological processes, with which these phenomena, without exhibiting any special creation, hold intimate connections. Thus our science does not accept the point of view of subjective analysis, but searches to penetrate into the internal, having recourse to the most efficacious aid of every natural research; and this is the experimental method.

It might, at our first approach, seem that we should speak in an exclusive way of experiment in the psycho-physical domain, because only the physical conditions of the interior processes, can be, within certain limits, varied at will, and rendered accessible to measurement. And in truth there are, under this aspect, no psychological but only psycho-physical experiments. But the change which is determined by the varying of a condition, does not depend simply on the nature of the condition, but also on that of the conditioned. The psychical changes which are produced by the variation of the external influences, will throw light on the interior phenomena, and in this sense psycho-physical experiments may at the same time be called psychological.

But that which, in our opinion, forms the truly new side of modern psychology is genetic research. In what point of the animal series does psychical life commence? Between the amœba, which is an albuminoid clot with nervous elements, and the vertebratum, which has organs

and instruments adapted to furnish to it the consciousness of itself, does there truly exist an abyss? Is the simple reflex elementary movement, that we provoke by exciting the contractile spherule of a protozoa, essentially different from the volitional impulse which man transmits to his muscles? Or further, is that act which we regard as mechanical, the embryonal design, the schema, of another most complicate act, which the more perfect vertebrates exhibit? The problem, as is clear, reduces itself to determining whether, in the world of living being, those high activities of the life of relation, which we call psychical functions, form a continuous uninterrupted series.

This problem cannot be solved by other than the biological sciences. The philosophic systems which, with grave damage to culture, still delude our schools, by proclaiming the most abstract nebulosities and syllogizing aprioristic dogmatic formulas, shun it with holy horror; for, by the apostles of the absolute, the psyche is revealed solely in man and by man, and mental functions are not to be spoken of where there is only pure automatism. Biology, on the contrary, basing itself on the comparison of organs and their functions, interprets the psyche as an evolutive process, as a never interrupted succession of gradations, which from the plastide branches onward up to man, in whom the reflex act, which was manifested in the amœba without the diastaltic nervous arc, now invests itself with the complete aspect of perception. The inconstant, step by step, without leaps, by virtue of a universal law that governs all the phenomena of nature, is converted into the constant forms; and this progressive functional specification finds correspondence in that of morphology, by which, from simple clots of gelatine it runs its course up to the nervous ganglia of the invertebrates, and hence, with increasing complexity in the apparatuses of marvelous structure, which anatomy and histology unveil in the superior animals.

Unless we shall have taken into account the genetic factors, it might seem that in the first stages of life, nude mechanical facts, and no others, must be apparent. The protoplasmic clot that contracts itself under the excitation of a needle point, we might figure to ourselves as unprovided with any psychological activity, and solely obedient to physical laws. But to the naturalist, who follows with scrutinous eye every movement and manifestation of the beings, no doubt can arise that this clot is furnished with the elementary psychical capacities of pleasure and pain, simply because it would become to him inconceivable, that a property so fundamental in organized nature, as consciousness, should be wanting in a minimum in the protozoa, and come forth at a bounce in the highest stages of animal development. Man himself, in his inception, is an albuminoid clot. At what part of time must his elements of the psyche have origin?

Embryonal life is developed only through gradual transitions, and the moment of birth is but a determined change in the processes of respiration, circulation and nutrition, rather than a new fact; there is no absolute datum that can demonstrate the beginning of mental life. From the small nucleus of protoplasmic substance, which includes in itself all the elementary functions, the most complex organisms that people space take their origin. Every clot will have the property of contracting under the efficacy of exterior excitations, and all stimuli—as pressure, heat, light—act in a direct way on that homogeneously contractile mass. On its surface, by a slow work of adaptation, certain points are formed, now more excitable under luminous oscillations, and now under pressure; afterwards special stimuli strike special points, which become specifically more sensible than they were in the origin of the homogeneous mass. And in order that these points of sense may act on the contractile clot, it is necessary that the web of connection, the paths of union, shall lose contractility and

adapt themselves to the conduction of excitement; thus has its birth a cord, a nerve, which, forgetting, so to say, contractile property, acquires and conserves that of conduction. These new apparatuses of relation continue to multiply and differentiate, and presently ganglia and nervous centres begin to form, in which, finally, the psychological powers are concentrated.

Genetic force has, therefore, a great importance in physiology, and it shows the enduring continuity in the whole series of animal form; therefore researches among the humblest organisms reveal new scenes of life, as science implicitly studies in them, in a premature and quasi embryonal state, those elements which in the vertebrate show themselves in the midst of manifold conjunctions of organs and functions. And as, descending to the first glimmerings of life, we find the muscle at the point in which it is but amorphous protoplasm, and the apparatus of respiration reduced to the immediate exchange between the gases of the yet homogeneous tissue and the gases of the water which involves it on every part, so we succeed in seeing in the reflex movement, the splendors of cerebral activity confusedly shadowed forth. Hence, as Hermann has truly said, physiologists wander along the shores of the sea, searching for those inexhaustible sources of genetic study—the lower animals.

Haeckel has recently added new brilliant pages to the study of comparative psychology by applying to psychical phenomena the cellular theory; the cellular physiology of Virchow completes the cellular physiology of Haeckel. In the organs in which, united in centres or in ganglia hardly visible, the nervous cells appear, that is, cells specified in form and composition, there appear, also, the functional energies in a corresponding degree. In truth, that a psychic life exists, we do not merely say in the vertebrates, but in insects, the facts, and the attentive observations of naturalists clearly attest, and from Huber onward, in all their minute particulars, the marvelous

instincts of bees and ants have been known, variable instincts, which, according to Haeckel, should be the sum of the interior actions acquired by adaptation, fortified by habit and transmitted by heredity. But can the same be said of corals, polypi and sponges, in which under even a more elementary form, a nervous system is wanting? According to Virchow there is no life without central and peripheral nervous apparatus, muscles and organs of sense. Haeckel, on the contrary, sees here, so to express ourselves, psychicity; he descends from the conception that life in general is not necessarily colligated to form, that is, to bodies morphologically differentiated, to that other conception that mental activity, in its larger signification, is not the exclusive attribute of the nervous substance. In every group of cells, or in a single cell, there are organic bases for the production, though in a most simple sphere, of movements and sensation. The hydra, in fact, has not organs of sense, muscles, nervous fibres and cells, yet in it there are manifested phenomena of sensibility and movement in response to mechanical and luminous stimuli. How is this singular phenomenon of function without organs, a soul (*anima*), without psychical apparatus, explained? The microscope has shown in the external stratum of the body of the hydra special cells, called by Kleinberg "neuro-muscular," provided interiorly with filiform appendages, which should have the office of contracting in the manner of muscles, whilst on the exterior, nucleate part of the same cells, there is a centre of sensibility, or, in other words, the external half of the cell is nerve, and the internal half is the organ of motion. The psychical mechanism of the polypus is a simple stratum of these neuro-muscular cells, and each of them accomplishes, in the most simple manner, that which, in an incomparably more perfect manner, is accomplished in the functional economy of higher organisms. But there is yet more: in the extreme depths of life, midway between the two worlds, the animal and the vegetable, there stirs and lives another world of microscopic

organisms, formed of monera, amœbæ, gregarinæ, infusorii, &c., &c. (*Haeckel*.) Every one of these beings is a globe of protoplasm, a single cell, to which must incontestably be attributed elementary psychical aptitudes, for two reasons: first, because it is impossible that sensation should come forth complete from the bowels of matter, without antecedent preparations; secondly, because in the amœbæ and in kindred monocellular forms, sensibility and movements are so manifest, that Ehrenberg, that profound scrutinizer of the lowest organisms, believed that in the infusorii there must have been brain and organs of sense, nervous and muscular fibres. Psychological activity is then a general property of all cells; it is initiated in the protozoa, and it attains, through successive evolution, the highest degree of development in the corpuscles of the cerebral centres of man, which may be styled true intellectual cells.

To these doctrines, resting on the unshakable basis of severely scientific researches, modern psychology conforms. Whilst, however, in England the works of Spencer, Bain, Maudsley, Lewes, Sully and Grant Allen, present the grand spectacle of an objective, natural and evolutive psychology, in Germany, with exception of Haeckel, experimental psycho-physical labor prevails, with the character of mathematical precision and pure determinism. Wundt, Fechner, Lotze, Helmholtz, Dubois-Raymond, Hering, Horwicz, Exner, Obersteiner, and many others have, by experiment, measurement and calculation, laid the foundations of the edifice of a physiological psychology whose domain is progressively becoming more extended, on reflex action, the mechanism of sensations, with the problems relative to space and time, on movements, expressions, language, and the conditions of volition and attention; physiological psychology has furnished admirable fragments and specimens. If in the English psychology synthesis prevails, that is, the work of association, in the German prevails analysis, the labor of precision, but the one presupposes the other, and the two schools are co-established and interlocked as but one.

I.

In Italy also, the movement of the new doctrines has been efficaciously propagated, arousing from the metaphysical torpor, in which they perhaps would have remained, many of the strongest intellects, who in various centres of the peninsula conserve alive the sacred fire of science, and form the nucleus of a new generation.

For certain, our productions have not yet the value of the English or German; still we must be content with our work, and so much the more so that it has succeeded in conquering the fanatical opposition of the orthodox philosophic schools, by introducing into instruction a current of restorative ideas, and attracting towards us the benevolent attention of strangers.

Recently Espinas, the illustrious author of the "*Sociétés Animales*," has published a work which has made known to a good part of Italy doctrines and names which, through one of those strange, though not unusual, accidents in our country, had remained unknown, and artfully held as of little value by those who, standing yet at the head of things, believe that they possess the privilege of reposing knowledge. Espinas' book is a specimen of philosophic studies carried through with love and consummate diligence, though unity of tone has not always been maintained in it, and here and there the egregious writer has fallen into some inaccuracies of particulars. We certainly make not the strange pretense to construct an historical work and make a complete representation of the present state of psychology in Italy. Our aim is much more modest; we content ourselves with a little at a time, beginning from the present to exhibit certain studies which appear to us of particular importance, to follow, in the best manner possible to us, the course and development of physiological psychology, and to furnish some resumary notes, which, illustrated by comparisons and observations, may not prove altogether useless.

And, first of all, we are pleased to mention one book

which reveals an eminent genius. Whilst in Italy there run through the mouths of the many, certain names of dreamers of transcendent philosophy (to whom, for example, the idea is absurd that an impression on an organ of sense can be conducted to the cerebral centres, by running along the cylinder axis of the nervous fibres), the name of Roberto Ardigo was almost, till yesterday, unknown. Ardigo, who has thought out and profoundly discussed the deepest scientific problems, who has sought for the secret of mental phenomena by the severe study of the physical sciences, is one of the most illustrious representatives of the new ideas; proof of this is given in his psychology as a positive science, his natural formation in the structure of the solar system, and his morale of the positivists. The method in which he comprehends the positive psychology in its main lines is the work of a master hand, and merits every attention.

In order that psychology, says Ardigo, may cease to be a vain mental construction of concepts, without foundation in reality, it is necessary that it shall follow a path altogether opposite to the ancient. Seek no longer for the essences of causes, let phenomena, the unique study, whose scientific prerogative is absolute and independent of every abstraction whatever, be called the principle or idea. And let the phenomena be studied by observing and distinguishing them, and computing their co-existence, succession and resemblances.

The positivist does not pass unheeded anything that can in any manner furnish him with indications for thought. He interrogates the gestures, voices, actions and customs of uncivilized and savage man, in various ages, and in the various psychical expressions, in the normal and the pathological state, under the influence of agents that excite or depress nervous activity. Nor does he only observe modes and forms; he also enumerates the causes of them and submits them to statistic calculation. He rejoices in a hieroglyph, a cipher, a monument,

a design, an implement, an instrument, an idol, or a temple. He discovers in a word that has traveled from age to age through thousands of years, the phonetic history, the inflections and the increments, and out of them he constructs their ideal history, which affords him valuable data for reconstructing the genesis of an idea. Nor does he stop with the study of man alone; he searches out and compares the organs in the various zoological forms, both living and fossil, and in their various degrees of embryonal development, but he scrutinizes more than any other the structure of the nervous apparatus of the periphery and the centers, the processes of physiological activity, and the intimate relations between the organism and coëxistences and exterior successions. He feels certain that the colors of the spectrum, the polarized bands, the iridescent tints due to the phenomena of interference, which we obtain by the prism of glass, Iceland spar and bubbles of soap, do not cease to be the proper light of the sun. Light is ever the same, and those bodies do no more than segregate the elements, presenting them under new aspects, and presenting to the physicist the opportunity of studying their laws and their nature. In like manner a gesture of an animal, an instrument of art, a word, an organ of sense, are most simple prisms fit to refract thought, and to decompose the elements of the psychical activity, which in them and through them, is manifested. But science goes further in its inquiries. It considers the phenomenon not alone in its present, its static state, but, ascending by induction and experiment, it would know what has been its rudiment, and through what successive gradations of development it has passed, that is to say, it would complete the cognition of it with the genetic data. To this sort of cognition only those comparative methods can lead, which, in physiology and the biological sciences, have furnished the richest contribution of discoveries and laws. And just as vegetable physiology, by descending to the mosses and the

confervæ, and unveiling the organic mechanism of the plant in the cells and fibres which are associated and disposed in a thousand ways, succeeds in constructing the organic structure of large cotyledonous trees, so the majestic tree of human thought can never be comprehended unless regard is had to the formless germule of the psychical life of the zoophyte, and ascending evolution is followed up in the animal series. The physiology of the organs of the senses, on the one part, throws much light on the origin and progressive development of individual consciousness, and on the other part, linguistics by the study of phonetic laws, making, as it were, of psychology a quasi moral geology, ushers us into the presence of the marvelous spectacle of the evolutionary history of human thought. Finally, that every doubt on the nature of the phenomena of mind may be removed, statistic computation intervenes, introducing those immutable rules by which, as Quetelet has said, human facts succeed one another in the same order as purely physical facts. (*Ardigo.*)

Thus psychology legitimately has recourse to exterior phenomena in order to obtain indications on psychical acts, which, however, do not cease to be different from such phenomena, and constitute a science by themselves, which is not physiology. *Ardigo* is, on this point, in accord with the great contemporary psychologists, *Stuart, Mill* and *Spencer*. *Herzen*, also, with that admirable clearness of conception which is peculiar to him, has signified the same opinion, that is, that psychology constitutes the point of contact of physiology with sociology; that it occupies between these two a vast neutral ground, where physiology, properly so-called, cannot follow it, and that though the observations on the development of psychical processes in space and time, be continued as far as we will, they can never furnish us the least idea of what a state of consciousness is. Beyond the tissues and the organs, beyond touch and sight, and weight, and measure, thought

cannot be interrogated but in the interior of human consciousness. Who could ever, by physiological postulates, by simple cerebral anatomy, solve the grand problem, whether the intellective acts and the sensitive are essentially identical or different? The intimate, profound, comparative study of the organs gives us some indications; but in order that we may arrive at the formulation of a law, the construction of a scientific hypothesis, we must have recourse to the comparison of sensations and ideas, which are psychical forces. Further, as Ardigo says, for what has been done and what is yet to be done, physiology has, not rarely, been obliged to draw its rules from psychological data. Thus, for example, the consciousness of vision and of the perception of the various colors, and the judgment which accompany vision, was the point of departure of the stupendous works on the structure and functions of that marvelous organ of sense, the eye. And thus, again, consciousness attests the psychological fact of the association of ideas, and offers to the physiologist the grave problem of studying in what way the texture of the nervous elements lends itself for the production of this supreme law of mental life. Could such researches, as have been made by microscopic anatomy, have been initiated if the fact of association had not been psychologically known?

Psychology and physiology, thus interpreted, become fecundated; they mutually compenetrate and indubitably attest the enduring, harmonious correspondence that exists between thought and organism. But how is this correspondence explained? By the distinct substantivation of two opposite terms? Then we would have the occasional causes, with miracle as the foundation of science; pre-established harmony, with the explicit negation of causality; the mysterious influence between the soul and the body, with discontinuity of the organic acts, that is, with the fallacious supposition of an immaterial ocean situate between the two opposite coasts of a

material world, or as Bain would say, a void occupied by a psychical substance, which is interposed in the middle of a series split into two parts; or, is it by conceding reality to one term and denying it to the other? But in this case also we should be accepting a solution that is repugnant to intelligence, and contradictory to the laws of things.

The continuous, perfect and unfailing correspondence between thought and the organism is explained by considering spirit and matter, psychical acts and physiological, as two different expressions of one and the same psycho-physical reality. (*Ardigo.*) The conception of the psycho-physical unity is certainly one of the grandest of modern psychology, which has imprinted, with the scientific seal, the divinations of ancient philosophy. Lewes, in his posthumous work, has cleared up and proved, with singular force of thought, that the wise foundation of psychological science consists in reducing the distinction of the states of consciousness and the states of the organism, that is, of the subjective and the objective, to a simple difference in the mode of apprehension. Every fact, every sensation, has a double aspect, objective and subjective, according to the mode in which it is apprehended. By abstraction we may consider but one of the two aspects, and we would, for example, say such a sensation is a flame, a color, or a sound outside of us, or that a change has been produced in our consciousness.

Let the law of gravitation, says Lewes, be considered: It is incontestably the law of object or matter, which contrasts in the clearest manner with the law of association, which is, in no doubtful manner, a law of subject or spirit. Whence comes this distinction? From this: that in the first case our mind turns to the objective relations, and then overlooking the subjective aspect of the knowledge, we affirm this law as independent of the spirit which conceived it; whilst in the second case, being intent with the greatest concentration on the subjective side, our mind sees nothing but the associate

states of consciousness, and thinks not of the exterior facts which states of consciousness presuppose, and of the nervous processes which constitute their correlative physical data. Nevertheless, Lewes concludes, nothing should prevent our considering the law of gravitation as a subjective law, and that of association as an objective law; it suffices merely to change the two points of view. According, also, to Ardigo, the distinction between what is called the interior world or spirit, and what is called the exterior world or matter, is a distinction not anterior and primitively formed by consciousness, but posterior and artificial. Man constructs an abstraction, renders it objective, and then reasons on this object fabricated by himself. In his consciousness the present and the past representations are united, but human consciousness is the *ensemble*, the compenetration, the fusion, of these representative images. If regarded attentively, every representation possesses its side of exteriority, and its side of interiority; the thing is one, but the aspects are two. Now if, in the mental process, all the so-called internal sides of our representations be brought into one sole idea, we have the conception of spirit, but if the external sides, we have the conception of matter. Matter and spirit, therefore, however different and contrary, are undivided in consciousness as the two opposite sides in the representation, and to think differently is a psychological deception, which proceeds from forgetting the subjective origin of the two objects.

The ideas of Taine are not less clear nor less explicit.

All repeat that the psychical phenomena, which in ultimate analysis are sensations more or less transformed, and the molecular movements of the grey substance of the brain, are between themselves irreducible. Let it, in fact, be supposed that histological analysis has infinitely progressed, that the theory of molecular motions has reached the same certainty as that of the ethereal undulations, that a mechanical formula can express the

mass, the celerity and the position of the nervous molecules in any instant whatever of their movement, let these and a hundred other things be supposed, and, notwithstanding, we shall ever find present to us the two conceptions, motion and matter, which cannot be converted the one into the other. But the incompatibility of the two phenomena is apparent, not real, that is, they proceed from ourselves, not from the nature which they have. It suffices that the same one fact may be known in two different ways, that different facts may be conceived in its place, and such is the case of objects which we cognize by means of the senses. The conception of specific heterogeneous agents rests on the sole and unique reason, that the perception of the various orders of phenomena reaches us by the operation of different organs, and that the exterior agents, directing themselves more particularly to each of our senses, excite special sensations. The heterogeneity should reside more in the functions of the physiological apparatus, which forms the sensations, than in the nature of the physical agent. Now the idea of a sensation and the idea of a molecular movement enter into us by ways not only different, but opposite; the one comes from within, the other from without. It may be then that the sensation and the cerebral motion are at the bottom, but one and the same fact, which, according to the modes in which we acquire cognition of it, is destined to appear double. This hypothesis is more legitimate than the dualistic, as all other theories, physical and psychological, it holds account of the influence of the subject which perceives and thinks, and of the special structure of the observing apparatus; it does not introduce any unknown cause, and, in fine, it demonstrates the necessity of the union of events, since from the moment that they are referred to a sole fact gifted with two aspects, it is clear that they represent the two faces of the same surface, the one mental, the other physical; the one accessible to consciousness, the other accessible to the senses.

Herzen also believes that the difficulty of explaining how the physical act becomes a moral act, how the modification of the cerebral cells is converted into a sentiment, a thought, a volition, would vanish at once, if, renouncing dualism, we should recognize in the physical and psychological phenomena the manifestation of but one reality, which we have been accustomed to study, from two different points of view, and by illusion, esteeming the two aspects of them as different entities. The substantial distinction, which we place between nature and the mind, is purely verbal. The psychical act, considered objectively, that is by way of the senses, is a functional molecular movement of the grey substance of the brain; but considered subjectively, by way of consciousness, to whose immediate responses metaphysics attributes the chief, nay, the unique scientific value, this molecular movement is a sentiment, a thought, a volition; or, better to say, according as we regard it from within, or from without, the phenomenon presents to us the right and wrong of the same surface—two things inseparably joined together in its being. In reality then, there is neither a physical fact nor a psychical fact, but a unique fact. And for demonstration of this, the psychological inductions serve better than anything else.

Our seeing red depends on the particular conformation of the retinal extremities of certain fibres of the optic nerve, and upon the corresponding cerebral organ to which they lead. The like may be said of all sensations whatever. The organs by their activity form sensation, just as the length, tension, form and nature of the cords of a cymbal form its sound. And this holds good as well for sensations properly termed, as for the remembrance of them. Now, all the psychical acts, as well those comprised in the category of cognitions, as those which we designate by the names affections and desires—(wishes)—as well the particular as the abstract, are either sensations, or remembrances of sensations, and

yet they depend throughout on the nature, form, and deportment of the organs.

Psychical activity is then subjected, neither more nor less than physical activity, to the laws of time and the law of the equivalence of forces; for, just as a certain time is required in the moving of a body, so is it in the formation of a thought, and in every thought whatever, a certain amount of physical force is expended, whether it may have been impressed by an external stimulus, by means of a sensible organ, or deposited in form of nervous substance, consequent on nutritive processes. The instincts and habits, which have so great a part in psychological operations, are founded in natural and artificial organic conditions; and certainly no one is ignorant of the fact, that the psychical properties, which are transmitted, propagated and attempered by means of generation, vary with races, age, sex, physical habits, climates, alimentary regimen, and so on. The whole of psychical life, in short, so different in the awake state from that of sleep, and in normal conditions from those of somnambulism and insanity, has its unique reason in determinate physiological conditions, which form the unfailing substratum of every mental manifestation. We might multiply indefinitely these relations for inducing the continual and perfect correspondence between the life of thought and that of organism, and Spencer, Bain, Maudsley, Wundt, Taine and the experimental school have luminously demonstrated it. And if to all this, as Ardigo says, we add that the distinction between spirit and matter is not an anterior and primitive datum of consciousness, but posterior and artificial, the induction named enjoys the character of full certainty, and from it, it is also possible to establish the continuity which, on the one side, extends from man to the entire grand family of animals; and on the other side, from conscient existences to the inscient, organic and inorganic. The psycho-physical inductions, therefore, which exhibit the merely logical separation of psychical

facts from the physical, and at the same time their effective indivisibility, lead us to an idea above the vulgar, of the body and the soul, by embracing both in a grander and vaster scheme; this is the idea of the psycho-physical reality. (*Ardigo.*)

By the fallacious dazzlings of abstract speculations and the deceiving faith in syllogisms, it is impossible to found a truly scientific psychology. Wherever the fact does not throw light on the idea, or experiment does not confirm the hypothesis, there we have metaphysics, and not science; and metaphysics, with its dogmatic definitions and its infallible revelations of consciousness, creates uninterpretable enigmas, such really are the corollaries of abstract psychology; a subject with a scheme of crystallized faculties, an imaginative system of facts, a logical structure, empty and absurd. *Ardigo* has delineated, with wondrous accuracy, the high position which science should hold in psychological inquiries. The positive philosopher does not outrun mental facts, when he would trace out their laws; he lingers over phenomena, even the most common one, sensation, and he studies it and analyzes it in a thousand ways, distinguishing in it, differently from the metaphysician, the initial and elementary datum from the habitual and complex, and noting the fact that there is no similarity between the thing and the corresponding sensation. He only sees that the sensation is the unailing natural product, the equivalent, of the physical action of the organs, and that it therefore enters into the order of nature, in which effects, under whatever form they may be presented, constitute a continuous series, in which the sequent is a simple transformation of the precedent. He admits sensation as a fact, the intimate nature of which he does not interrogate, as an indubitable reality, the laws of which are known; and in that he finds the key that enables him to interpret the cipher of human thought. If the physicist says: "Grant me matter and motion, and I will unfold all the phenomena of nature," the positive psychologist may, in

his turn, say, "Grant me sensations and their possible associations, and I will explain all the phenomena of psychical life." And just as the philosopher of nature has succeeded in freeing science from the fantastic incumbrance of the imponderable fluids, and the absurd congeries of other physical entities, so the philosopher of spirit has been able to demonstrate that what is called active and passive, sense and intellect, internal and external, knowing and willing, perceiving and remembering, and so on through all the faculties supposed concreate with human consciousness, is, in fine, if we study well the genesis of the mental powers, but a different process obtained from the same elementary data differently disposed.

The elementary datum is not perception, as the old psychology believed, for it is not a simple, but a complex fact. Sensation occurs after a sensation ordinarily produced by more senses than one, and in its formation there concur, not only the present sensation of one or more of the senses, but truly various and infinite sensations, once experimental, which, being aroused in more or less entirety, or more or less fused together, through excitation of the external stimulus, instantly associate themselves with the present sensation, equipping it with a thousand particulars, interweaving around it a series of judgments and reasonings, which pass unnoticed by the framer of them, but which, especially as regards visual perceptions have been traced out by scientific analysis. Perception is, therefore, a complex phenomenon, considering the innumerable component sensations as the elementary data of the psychological representation. Besides, the complexity increases immeasurably if we decompose the texture of the same sensation, for what is called the sensation of a sense, is an assemblage of innumerable most slender sensations, which are awakened by the excitement of the several nervous fibres of which an organ of sense is composed. I here repeat, with Taine, a grand simile—psychology stands to-day to sensations as chemistry once stood to the pretended

simple bodies. Penetrating into the knowledge of anatomical and psychological knowledge, Helmholtz has shown that every sensation is a compound of elementary sensations, which, in their turn, have been formed by sensations from more simple sensations, that is to say, less in intensity and duration and so onward. Within us there is accomplished an infinite subterranean labor, whose final products alone are perceptible to our inward sight. Consciousness cannot arrive at the elements, and the elements of elements of sensation; these stand to sensation as the secondary molecules and the primitive atoms do to bodies.

Association of ideas, then, in which is summarized the magistry of psychical acts, is not a particular law of thought, a special rule through which the thought becomes distinct from the rest of things. Between the things and thought there is a permanent continuity, and the law of association of psychical facts, to which Stuart Mill attributes the same value as to gravity in the mechanism of the universe, is no other, according to Ardigò, than a simple application of the two greater laws that govern the genesis and development of every natural phenomenon, that is to say, the law of the latency of forces, and that of the division of labor. In fact, the force by which the organ of sense is stimulated is not all exhausted in the conscient sensation which follows it; a part becomes latent, as does the heat of the solar rays in the tissues of plants, fixing itself in the form of a tendency or of a habit, and it is from this fact that we say, a sensation felt may be remembered or reproduced, without renewal of the excitement from the external sensible object. A remembered thought is not a creation out of nothing, of a thaumaturgic faculty called memory; to use the very effective phrase of Ardigò, that thought was no other than dissembled force, which reappears as the flame and the heat of a piece of wood when kindled. In fine, the law of the division of labor admirably explains the manner in which gathered force, received from without, or

accumulated within by means of physiological processes, or placed in reserve and conscripted into the latent forms of memory and habit, is transformed into the various, marvelous and infinite manifestations of thought. A physical simile clears the singular phenomenon. If, for example, in the falling of a mass of water, an hydraulic wheel is struck, to which a Jacquart loom is applied, we immediately see the simple weight of the water transformed into the interlacing of threads; the consistency of tissue; the beauty of design, and the charming display of the colors of a precious drapery. And to what is the prodigy due? To nothing but the forms and arrangements of the multiple and diverse organs of the loom, which divided among them the force lent by the falling water, and converted it into the various, skillfully co-ordinate labors. The same happens throughout all nature. That force which, in the zoophite, because of the imperfection of the arrangement, is transformed into only an obtuse and obscure sensation, may, in man, who presents a stupendous and harmonious variety of physiological mechanisms, be led over into the meditations of the philosopher; the imaginative flight of the artist; the heroic virtue of him who sacrifices his life for an idea. The analogy is perfect, and the law that governs the processes of formation is the same in the drapery given forth by the loom of Jacquart, the tenderest thread spun by the spider, and the grandest product of the human intellect.

II.

Having abolished the irreducible dualism between unextended thought and extended matter, and having filled up the apparent abyss between psychical fact and the molecular movements of the brain, with the legitimate data which the former makes a part of our being and its modifications, through which we obtain the subjective aspect which we cannot have of the second, and, consequently, we find ourselves unable to objectivate it as respects our understanding, of which it is at once the

object and the subject, Herzen proposes the following problem: Do the psychical phenomena constitute a part of the universal and continuous series of motion, which, from an anthromorphic view, we artificially divide into motion, mechanical, physical, chemical, organic, and psychic, also sub-dividing the last named into various species, as sentiments, thoughts, volitions, which in their order stand as do the vibrations violet, red, yellow, &c., to the order of luminous vibrations? Or, in other words, does scientific generalization, which reduces all the phenomena of nature to various forms of motion, comprehend also psychical phenomena?

The solution of this problem is reached by means of a logical and experimental cycle, with an inductive and a deductive phase, that is, by ascending from a great number of facts undoubtedly to a general conclusion, from which, by deduction, a corollary is extracted, which, being put to the test of experiment, becomes confirmed by another series of facts. (*Herzen.*)

The experimental facts (splendidly illustrated by Helmholtz, Donders, Wundt, Exner, Auerbach, &c., which we shall hereafter relate), from which it is necessary to set out have definitively established the fact that a psychical process, when all concomitant physiological phenomena have been abstracted, is not formed by any transcendent virtue in itself, but is subjected to determinate conditions of time; and this time, even in the more simple and elementary processes, as the discernment between two perceptions, has a duration longer than that which is required by the greater part of physical processes. On this experimental conclusion, which possesses all the character of certainty, Herzen constructs a very subtle argument.

The immediate effect of a causal complex cannot be separated from its cause by any interval of time, for an inert interval between the cause and the effect not only interrupts, but always and definitively breaks every bond of union between the one and the other; if, apparently,

the effect does not take place in the same moment as the cause, this depends either on our erroneously regarding such causal complex as sufficient for its production, which implies that its production requires an augmentation of the intensity of the agencies or the addition of one more, or it depends on our erroneously regarding such effect as the immediate effect of the given cause, which implies that it is, on the contrary, only the final effect of a series of changes of which the given cause is but the point of departure. In this case the apparently inert time, which passes between the first impulse and the ultimate effect, is in reality taken up in the transmission from one point to another of the extended resistant, and hence composite substratum of homogeneous and heterogeneous parts in the transmission, I say, of an effect sometimes concealed from our observance, but which becomes in its turn a cause, and is reproductive, until in a given point all the conditions of the expected final effect are found united; and then this effect is produced immediately.

Now, as the production of a psychical effect requires a time, *relatively* very long, which constitutes an interval apparently inert, between the cause and the effect, we must, in the first place, conclude that the psychical act takes place in an extended, resistant and composite substratum. As then, every interval between the first impulse and this ultimate effect is taken up in the transmission of the primitive impulse, which is eventually modified, and as, finally, every transmission or modification of an impulse can be no other than a form of motion, we must, in the second place, conclude that a psychical act is a form of motion. The inductive phase of the logical and experimental cycle is thus completed.

If this conclusion is true, every psychical act must be linked with the production of a certain quantity of heat, because every form of movement whatever is united to the production of that special form which is called heat; and the studies and most delicate

experiments of Schiff, on thermo-genesis, have clearly shown, that: 1st.—In an animal, having the nervous centres in a good state, all sensible impressions are conducted to the cerebral hemispheres and produce there, through the fact of their transmission, an augmentation of temperature. 2d.—Psychical activity, independently of the impressions it awakens, is itself accompanied by a proportional augmentation of temperature in the brain.

It is therefore proved, that those colligated series of reflex sensations which external impressions awaken in the grey cerebral substance, and which constitute psychical activity, are no other than the inter-cellular irradiations of a molecular movement initiated by those impressions. By thus completing the deductive phase, we are in a position to express, as a definitive formula, rather than as an hypothesis, the scientific conception that psychical phenomena enter into the universal harmony, by their reduction, in likeness to every other phenomenon, *to a special form of motion*, which is characteristic of the special substratum in which it takes place—that is, the substance of the central nervous elements.

This formula, which we might call mechanical, has been developed by Sergi, one of our ablest psychologists, whose name, on its first appearance, was greeted with the most lively sympathy. (*Messina*, 1878.) But his demonstrative process is somewhat different, or better to say, Sergi reaches the same corollary by the biological theory, demonstrating that the psychical functions in ultimate analysis are physiological functions, and that, as such, they are expressions of physico-chemical properties.

It is not inopportune to state that Herbert Spencer, between physical life and psychical life, physiology and psychology, draws the following line of distinction: That whilst the physical comprehends simultaneous and successive changes, the psychical includes only changes or manifestations successive. But from an attentive examination of the inferior animals, it is apparent that the two

orders of vital changes are contemporarily simultaneous and successive, and a clear, evident and precise distinction between physical life and psychical life is altogether wanting. In the vertebrates, also, the difference between the one form and the other is not complete; there is a *quasi* obscure passage, which is full of shadows, and by gradual evolutions, the changes which constitute the psychical life, from having been simultaneous and successive, become successive only, and go on evermore manifesting their characteristic tendency to assume the serial disposition. Besides, psychology recognizes, in every form of mental activity, a necessary physical basis, and sees in sensation, despite its non-simple nature, the primitive element which in its transformation generates the most complex conscient acts.

Sensation ought to be considered, and it is, the manifestation of sensibility, which now, at length, after the splendid analyses of Bernard, constitutes a general phenomenon of life. Sensibility is not the exclusive privilege of nervous tissue, but a property of every organic element; and what is more, it does not appertain to the dominion of animal organisms alone, but to plants also; whence, according to Bernard, sensibility is the aptitude which the living being has to respond with determinate modifications to exterior excitements. In animals, sensibility makes transparent an evolutive history, which, when well interrogated, enables us to comprehend the nature of sensibility itself, and its different gradations up to the consciousness of it.

In the lowest organism, as the cytoids, sensibility is not a function distinct from nutrition; here the specified elements are wanting, and hence all division of physiological labor is also wanting. The same cell, and the same protoplasm, fulfill in the silence of their extreme simplicity their complex duties.

And not alone in the *amœbæ*, but even in the plumula, which is a polycellular organism, sensibility may be found only under the form of irritability, which is inconscient,

and is, by Sergi, called trophic. But in the organisms in which the cells begin to be divided into external and internal, the division of functional labor and the differentiation of these cells also begin. The internal, constitute the trophic apparatus; and the external, the defensive or filatic apparatus. The trophic cells, which form the internal stratum—the primitive internal—conserve the trophic elementary and primitive sensibility; the filatic or defensive, which constitute the external stratum, evolve the sensibility of relation necessary for defence, and for adaptation to natural agents; and hence the cells of sensibility and of movement derive their origin—the *æsthefilatic* and the *æsthekinstic*.

Up to this, all is natural; the difficulties are now epitomized in the genesis of conscient sensibility. But at this point the evolutionary theory is more than ever supremely necessary. The biological law, so splendidly illustrated by Darwin, Haeckel and Gegenbauer, which holds that ontogenesis is an abbreviated filogenetic process, should conduct us to the solution of the problem. Without spending many words on the fecundation of the human ovule, on the various embryological phases, and reducing the phenomena to extreme simplicity, it is a fact that the dermal lamina of the embryo corresponds to the *æsthefilatic* cells of the gastrula, and the gastrointestinal to the trophic cells. From the exoderma (outside fold) proceed the nervous system, the organs of sense, the muscles and the skin; from the endoderma (inner fold) the vegetative system with its appendices and the apparatus of reproduction. Now, if we lay hold of the zoological chain at a far-distant point backwards, it will readily be conceived that the evolution and progress of sensibility correspond to the evolution and progress of the organs, and hence of the nervous system, which is its unailing substratum. The nervous system has its birth in the evolution processes of the external cells, and it advances differentiating histologically and physiologically—that is, not only in its divisions and structure, but also in

its functional attitudes. Afterwards, with slow progression, the nervous elements are brought together in the centres, whose formation in the interior of the organism, as Gegenbauer thinks, serves for the protection of tissues so very complex and delicate. The centres, however, by means of the conducting threads, continue in communication with the organs of external sensibility—with the external cells represented by the skin—which conserves its general primitive sensibility, and by the apparatus of the special senses, which are themselves a development of the external fold. In fact, the physico-chemical action of the external stimuli—as light and natural selection—have determined in the organisms the formation of the particular organs of sense, which have, even they, been developed from the external cells, and we may see their successive appearance, in running through the very numerous links in the animal chain.

The development of sensibility which, from trophic and inconscient, is transformed into conscient, runs parallelly with that of the nervous apparatus; the modifications of the sensitive cells in their highest degree of functionality, previously inconscient, carry with them, unless an unknown power disturbs the equilibrium of nature, the consciousness of these modifications. In the origin and development of consciousness there principally concur exterior nature and its physico-chemical agents. In like manner as the action of light on the sensible external cells, is able to cause some of them, through natural election, to become transformed, and adapted to the feeling of luminous vibrations, and the production of vision, so it is easy to conceive that the sensible elements, the constituent centres of sensibility, by concurrence and consensus of action, become conscient. Consciousness therefore comes forth with the unfolding of organism, and it ought to be regarded as the highest manifestation of life; but no substantial difference should be admitted between the conscient form and the inconscient, for, as Bernard says, they are different expressions

of a single fact—general sensibility—which is in its turn the most comprehensive signification of organic nervous matter. If the evolutive theory can rationally explain the genesis of nervous structure, it can also explain the origin of consciousness, and if it finds the embryo of the ganglion or of the brain in the elementary organisms, in which the nervous texture has not yet shown itself, it really ought to be seen in the unconscious sensibility, which is the manifestation of the activity of the protozoon, and the rudiment of conscious sensibility, which, unless we would introduce a miracle, cannot be interpreted in a different way.

Now, sensibility expresses itself in sensation, and if the former is a biological property, the latter is a physiological function. And since the other phenomena of mind descend from sensation, which is the psychological and fundamental momentum, so also these have been the imprint of physiological functions. In fact, perception is not a new psychical manifestation that, all at once, breaking the eurhythm and continuous order of life, introduces itself into the animal series; from the most homogeneous form of sensibility up to the most clear and distinct perception, there is a gradual and ascending passage, as from the gastrula h eckeliana to the greatest of the vertebrates. In the same manner volition is the equivalent of the progressive development of reflex action, which, in its turn, corresponds to a more vast representation of automatic motion in the cell or simple protoplasm. Therefore volition also stamps as a sensation a physiological fact, and it proceeds from a biological property, which is automatic motion.

If sensibility and motion are phenomenal expressions of life, and the psychical activities which branch out from each are comprehended in the physiological domain, it is evident that they should be accomplished by means of determinate physico-chemical conditions.

Every manifestation, however high, of sensibility, finds its efficient reason in the physical, chemical or

mechanical excitation of the external world. The luminous undulations of the ether, for example, which change the color of the retina from its own purple, and color it in correspondence with the images of objects; the ærial vibrations which strike against the drum of the ear; the thermal, mechanical, or dolorific stimuli which strike the skin, and so on, induce in the peripheral expansions and the conducting fibres of the nerves, and, in the nervous centres, modifications of a physical or physico-chemical nature, and hence, increase of temperature, a fuller blood current, negative variation of the cerebral electric current, temporary exhaustion and succeeding reintegration through the nutritive efficacy of the blood. These hyperthermic and hyperæmic conditions occur in psychical phenomena of extremely complex nature, as in medications and perceptions not directly evoked by real sensations; and it has been shown by the fact of a greater secretion of phosphates, that the cells of the cortex of the brain (as does every texture in functionary), consume, during mental work and in more than the usual quantity, the chemical elements which compose their organic web (*trama*). On the other part, the close connections between the sentiments and the nutritive acts are well known—as digestion, secretion of milk, circulation and respiration.

Alcohol, opium, haschish, chloroform and other extraneous substances, if introduced into the organism, will, by changing the nervous nutritive movement, change also the psychical functions. These aberrations from the normal type become permanent, when their pathogenic condition is exhibited in diseased organs. Further, the psychical phenomena, like those which take place in the bosom of human nature, are formed in space and time, and this signifies that they are not “extra-special,” or “extra-temporal.” In order that a psychical act may be accomplished, there is needed a certain number, or a certain quantity of nerve cells and fibres, which contribute their several energies in the functional momentum.

It is necessary that an excitation, in order to be capable of producing an efficient modification shall consist of a certain force, which is already a composite of measurable and calculable elements, and that it shall exhibit its efficacy on the nervous elements, which also are measurable as to composition and extension. The excitation does not operate on a mathematical point of the sensible surface of the organs, but over an extension, for the terminal fibres of the nerves ramify, subdivide and spread out, in different form, according to the diversity of the organs, into particles, or into most unstable clots of nervous protoplasm, or into cells, which, as Spencer says, might represent multipliers of excitement. Without these, the luminous or atmospheric waves, equivalents of the most slight and almost inappreciable force could not, in stimulating the expansion of the retina, or that of the acoustic nerve, awaken in the centres the correlative sensations. Finally, it having been demonstrated, as we shall presently see, that the psychical phenomena also are subjected to determinate relations of chronological succession, it seems a legitimate deduction, that they, being produced by physico-chemical conditions, may be reduced to motion, as the path is direct from physico-chemical conditions to the manifestations of force, and thence to motion.

III.

From these general ideas, derived inductively and experimentally, we are able to descend to ulterior consequences of the greatest moment. Modern psychology, in the instincts, sentiments, volition and intellect, which formerly stood to signify abstract types and substantial entities, sees a particular mode of those energies which circulate in the bosom of nature, and represent the disguises, and the most lively image of the solar heat. It is quite proper to say with Taine, that in the basis of all the sciences, whether they have as their object physical or biological, psychical or sociologi-

cal facts, there is transparent a common tendency to reduce every problem to a question of molecular physics, and to construct a vast system of laws, resting on the unity of universal mechanics. Therefore, in the mental order, the diverse nervous changes which call forth the various sensations, and thence, in ascending line, representative images and ideas, can be conceived only as systems of molecular dynamics. Sense is but the highest, the vastest, and most complex form of motion. Every breach of continuity between groups and mechanical vibrations, and groups and conscient vibration, is wanting, since sense is set in motion by the movement that contains it, and thought, which may be called the ultimate phrase of psychical life, is the greatest concentration of sensation. The grand idea of the ascending transformation of the energies, which are more largely displayed in proportion as the aggregated molecules assume more complicated forms, rests on legitimate inductions (*Maudsley*); in fact, as in the physical order, we are initiated from inorganic matter with its properties and laws into living matter, with the energies corresponding to it, so in the biological order, from imperfect species of living matter, we rise to the potential element, the supreme condensator of force, the nervous cell with its correlative dynamic modes. A unit of thought would equivaie many units of life, and a unit of life, many units of purely mechanical force; but whatever may be the expression of the force, whatever the organization, animal motion, thought and sentiment, must be interpreted as the effect of antecedent force. Hence is possible the law of metamorphosis between physical forces and mental forces, and the transmutability of the latter into one another (*Spencer*). If the molecular vibration represented by heat is transformed into motion, or into elastic energy, an idea also, or a sentiment, finds its equivalent in the combustion of the organic materials, burned in its production. The various forms of psychological life, as Herbert Spencer has said, are susceptible not only of

being converted into one another, but of resuming, by inverse transformation, the physical aspect.

Mantegazza, in the lively colors of his magic delineation, has written some beautiful pages on the transformation of the mental activities. Through the influence of modern science, he says, the imponderables that once moved the world have become the disguises of matter, which is eternally in action. The psychical forces also are disguises of matter, varieties of the form of that unique, universal energy, which may be provisionally styled motion, and which, therefore, differ from the physical forces only, because of the aspects in which they are manifested, and the special organs that produce them. They may, every one, be reduced to motion, to resistance overcome, to a given weight raised; they may be transformed into one another, and the amount of labor produced is always equal to the energy employed. Thus sensations may be transformed into other sensations, into sentiments, or into thoughts; sentiments may be changed into other sentiments, into sensations, or into intellectual phenomena; thoughts, in fine, may be transformed into other thoughts, into sensations, or into sentiments. They are new elementary forms of transformation, which do not exclude, but which signalize the general physics of the phenomenon, and they all take place through sympathy, contrast, or diffusion of intensity. From the numerous facts studied by Mantegazza with great acumen, we may deduce the more general laws which govern the transformation of the psychical forces, that is to say:

In psychology the work produced is always equal to the force employed, which is equivalent to saying that the forces are not created, but only transformed. Our thoughts and our affections; our books and our statues; our revolutions and our arts, are but the transformations of solar heat. We have to do with a series of equations. The calorific energy of the sun is equivalent to so much carbonic acid reduced, and to so many albuminoids formed in the animal and vegetable tissues; a given quantity of

organic nutritive material is equal to so much brain and so many nerves oxidized; so much oxidation of nervous cells is equal to so many thoughts and affections.

In psychology also, opposite forces are contrasted and elided, and the transformations occur the more rapidly the less resistance or attrition they encounter.

The effects are so much the greater the greater is the force accumulated in a part, and which may be liberated on occasion of the least peripheral excitement.

The same one quantity of forces gives results in appearance very different, according as it is set free slowly or rapidly. Thus, a piece of wood, whether it burns by little and little in the air by rotting, or in a melting furnace, or under a current of oxygen, evolves the same quantity of caloric; as the sentiment of love may be converted, in a few instants, into another of hatred, or slowly transformed into antipathy.

The transformations are so much the easier, the more natural is the course they follow; and in this case we have probably to do with only a different resistance of the nervous fibres or of the cerebral molecules. Sensation readily changes into sentiment, whilst transformation in the opposite direction is less easy, and is always verified in diseased conditions, or at least the condition of very great excitability of the nervous centres.

The rapidity of the transformations proceeds in accord with youthful age, the female sex, excitable temperament; slowness, on the contrary, accords with adult age, the stronger sex, and a less excitable constitution.

But here we reach the moment for speaking of the chief heads of a problem to which we have frequently alluded as if it had been already solved. Is it at all possible to treat experimentally mental manifestations, and to apply to them the criteria of measurement and calculation, by which it may be granted to us to arrive at the constants, that is, the fixed laws of the phenomena

and the formula that represent them? Now, experience clearly shows that if a psychical phenomenon is a process, it must be evolved in time, and if there are in this process successive phases, they must be subject to calculable measurement. (*Severini.*)

This may appear strange, absurd, rash; and yet, analyzing by the most delicate means the effects and the external conditions of psychological life, we are enabled to penetrate into the intimate laws of the facts which constitute it; for, by modifying the senses and movements which hold the psychical activity in continuous relation with co-existences and external sequences, and by observing their effects, we are able to draw conclusions as to the laws that regulate mental processes. Whatever may be the producing cause, as Wundt has said, or whatever the force producing movements, in nature, it can be measured only by its effects; and as the physicist measures motor forces by the movements produced, and from observance of these infers the laws, inaccessible to the senses, in accordance with which the forces operate, so the physiologist measures the psychical functions by the facts they produce, or which produce them,—that is, by movements, or by sensitive impressions. Two of the grandest applications of these principles have been those directed to make voluntary movements serve for the measuring of time, and the sensations for the measurement of quantity in psychical life.

In time we possess a sure measure of our thought, as in the moment we cease to think, which happens in some pathological conditions, time vanishes. As therefore thought is our natural measure of time, so a measure of time, conducted with an extreme degree of perfection, may guide us in experimental research as to the relation between the origin and the chronological succession, of our perceptions and the exterior excitations that call them forth.

The whole of the psychical process, whose duration is measured with special apparatus (the chronoscope of

Hipp, the revolving tambour of the chimograph, or neuro-amobimeter of Exner, or the psychodimeter of Obersteiner), is, according to Wundt, composed of the following single elements: 1st, the conduction of the impression from the organs of sense to the brain; 2nd, entrance into the visual field (Blickfeld) of consciousness, or perception; 3d, entrance into the visual point (Blickpunkt) of consciousness or apperception; 4th, the volitional time necessary for determining in the organ the registering movement; 5th, conduction of the motor excitation to the muscles, and the progressive augmentation of their energy.

The first and the last of these processes are of physiological nature; in each of them there lapses a time relatively short, needed by the excitement for conduction into the peripheral nerves, and a time probably a little longer, to complete the conduction to the central organ. The other processes, that is, perception, apperception and the development of the volitional impulse must be regarded as true psychological processes. Perception is, with very great probability, furnished by the excitement of the central sensory surfaces, as an impression, that acts with sufficient force on the centres, is, from this fact, found in the visive field of consciousness; hence the duration of the perception is included in the chronological course of the processes of sensitive conduction, or better, it includes the time required for exciting the centres and that for causing the entrance of the impression into the field of consciousness. The volitional act also is a psycho-physical process, as the time of a voluntary impulse is confounded with that of the motor excitation, and it is impossible to separate these two instants. There remains then the middle link of the whole series, that is, apperception; but this also is a psycho-physical act. Wundt regards apperception as a particular process, inserted between perception and volitive excitement, and it is accompanied by a feeling of tension or force, which has a physiological basis

corresponding to a process of central innervation. In many cases then, apperception and volitive impulse cannot be clearly sundered, and they pass included under the name of "time of reaction," because they consist in a central reaction to sensitive impressions which penetrate into the field of consciousness.

The whole process, therefore, is divided into four acts: two physiological, that is, the sensitive transmission, and the motor transmission; and two psycho-physical, that is, the duration of the perception and that of the reaction. The space of time which comprehends the several processes is called, by the expression introduced by astronomers, physiological time. Experiment shows that the psycho-physical processes consume much more of this time than do those of conduction, the duration of which in both the traject of the peripheral nerves and the course through the spinal cord, is now known. (*Helmholtz, Marey, Richet, Exner, &c.*)

And now we are in an immense field, fruitful in psychological researches, in which the names of many German experimentors have become illustrious; nay, it may be said that this vigorous branch of psychology was born and has grown up in Germany. But it is impossible in this place to relate the variety of experiments, to exhibit even briefly the methods of research, and to record the numbers that express the duration of mental phenomena in the most diverse circumstances. Many accidental conditions, studied in a particular manner by Exner, influence the duration of physiological time, which varies according to the degree of attention, the organ excited, the point on which the stimulus is caused to act, the intensity of the excitement, the age, exercise, seasons, &c., &c. Obersteiner has made some most important researches on the insane, and in the majority of the cases he found a retardation, more or less notable, in the period of re-action. This showing was manifested either in an augmentation of the medium and the minimum (that is the shortest time in which re-action

presents), or in augmentation of the medium, whilst the minimum remained in the normal limits. The increase of the minimum period corresponds always to some grave organic degeneration of the cerebral cells, and was therefore rarely met with in the primitive forms of insanity, but rather in dementia and general paralysis. Those cases in which the augmentation of the medium proceeded with the greatest differences between the several values of re-action, clearly manifest decadence in the volitive force necessary for concentration of the attention.

The series of experiments, by which the changes of physiological time have been followed up, and hence the duration, are manifold, and the different cases examined may be brought together in the following method:

(*a.*) When the impressions are known in their quality and intensity, but are not determined with respect to the time of their appearance.

(*b.*) When the impressions are known and determinate as regards time.

(*c.*) When the impressions are known in their nature, but the moment of their appearance and intensity is not determined, or (in a more complicate case), when the impression passes totally unheeded.

(*e.*) When with the principal impression that should be registered, another impression, similar or different, which may be simultaneous, anterior, or posterior, is brought into action.

(*f.*) When in a series of perceptions succeeding each other in regular order, another impression, whether homogeneous or heterogeneous, is introduced.

(*g.*) When it is desired to measure, not the duration of the actual perceptions, but the time necessary for reproducing in memory past perceptions.

(*h.*) When, finally (different from the preceding cases, in which trial is made to determine the variations of physiological time; that is, of the interval that elapses between the excitement and the sign of reaction, according to the different conditions in which the experiment is

made), we would seek for a more exact determination of the time needed for the discernment, or for the discriminative act, that is, for the most simple intellectual act.

Ribot, Sergi, and Severini, following in the footprints of Wundt, have made a résumé of these various cases, very precise, recording the minutest particulars of the experiments; but the last from its great importance, merits particular notice. Here it is sought to establish the duration necessary for a simple intellectual operation, for a dilemma, a discriminative act, as Bain would say. The basis for the chronometric determination of the mental process is given to us by the experiments on physiological time; for, if obtaining the mean of one series of experiments we vary the conditions with regard to the psychical factors only, and if in ulterior experiments we shall be able to discover that the time required for the reaction has been increased, we may without doubt say that this augmentation in the duration is due solely to the psychological fact added to the latter series. We shall have, as Herzen says, a surplus of time, which lengthens the physiological time, and has a good right to be called psychological time. Donders and Jaeger have conducted experiments in this method, determining, first, the normal duration of the time of reaction, that is the personal equation, and afterwards the duration of physiological time in which the act of discernment was included.

Kries and Auerbach have repeated more accurately these experiments on themselves, which we may designate as discriminative.

As a stimulus of the tactile sense they made use of a slit of induction. Two stimuli of almost equal intensity, were applied on two different points of the skin (the finger and the back of the hand), and they saw that the time necessary for the discernment (*Unterscheidung*) of the excited point was, for Auerbach 0.021 second, and for Kries 0.036. To ascertain whether the stimulus was stronger or weaker, a longer time was called for than

was required to recognize the simple location of the tactile excitement, and both in Auerbach and Kries the relation between the two numbers that express the duration of time was equal.

As regards hearing, the stimuli for which were the sound of a bell, the report of the electric spark, and the oscillations of small sheets of steel, the experiments show that musical tones and rumors were perceived as such in the same length of time: for Auerbach 0.023, and for Kries 0.046. The discernment of a high tone lasts less than that of a low one; thus, a high tone for Auerbach required 0.019, and for Kries 0.049, whilst a low tone for Auerbach 0.034 and for Kries 0.054. Localization of the sounds was represented by 0.015 for Auerbach, and 0.032 for Kries.

In the optical experiments the stimulus consisted of the electric spark in a dark place. It was necessary in the first place to determine the length of time necessary to recognize in the field of vision the place where the luminous phenomenon was presented (*optische Richtungslokalisation*). The numerical values were for Auerbach 0.011, for Kries 0.017. It was further necessary to establish the time necessary for the discernment of two colors (Auerbach 0.012, Kries 0.034,) and the duration of the discriminative act, or of the perception of the distance at which the spark exploded, for Auerbach 0.022, for Kries 0.030.

Reasoning now on the various psycho-physical experiments, which to him who does not attentively regard them, will reveal merely figures devoid of value, we reach a point at which we may formulate some general conclusions, which bear the efficient imprint of law. Ribot, with his wonted clearness, has given these conclusions in the following manner.—

The fact of consciousness, as every other phenomenon, has a precise duration, variable and measurable.

The fact of consciousness, has not an absolute duration, it varies with the external or internal conditions to which we have alluded.

Physiological time, in the most simple circumstances, varies, according to the diversity of sensations, between $\frac{1}{3}$ th and $\frac{1}{12}$ th of a second.

All conditions adapted to the complicating of a psychical act increase its duration.

The duration of the most simple intellectual act may be valued at $\frac{3}{100}$ ths of a second.

The order of internal facts does not always correspond to the order of internal [external (?) typographic error] facts. Objective simultaneity may be charged subjectively into a succession; a subjective simultaneity may respond to an objective succession. Finally, the order may be inverted in such a way, that an objective succession A. B., may become a subjective succession B. A.

The time necessary for the reproduction in memory is not the same as that necessary for the present production of a state of consciousness; it is in general longer.

But experimental researches have been directed not alone to the valuation of the time of duration of psychical acts, but also to the quantitative determination of them. Being incapable of application to complex phenomena, these researches have been turned to the elements—that is to sensation. What is sensation? Wundt says the most simple sensation is a logical process, a conclusion, whose premises are constituted of facts absolutely inconscient—of physiological facts, which is to say, of physico-chemical processes, of mutations of nervous substance. Between ordinary reasoning and simple sensation there is this difference: that in the former the premises have been physiological, and only the conclusion a state of consciousness. Every sensation is then a judgment of experience, whose basis is inconscient. But is it possible to measure the intensity of of this nervous process? No inquiry has attempted to determine, in a direct way, the relation between the force of a stimulus and the nervous process of the nerves of sense. As, however, with respect to the nerves of motion, we have succeeded in establishing a similar

relation, and as there is a harmony of excitative processes in both the species of nerves, we may, because more readily accessible to experiment, substitute for the relation between nervous process and sensation, that between stimulus and sensation, this signifies knowing in what proportion the quantity of the sensation changes in relation to a given change of stimulus, between the two extreme values (*Grenzwerthen*) of the same, within which it is susceptible of being changed. And as respects muscular contraction, there have been distinguished a minimum and a maximum, within which limits there have been found augmentations of contractions proportional to the intensity of stimuli, so as to sensation, a minimum and a maximum ought also to be fixed. The slightest sensation perceptible is called the "minimum perceptible," or "the limit of sensible stimulus;" the greater intensity of a stimulus, to which the maximum of sensation corresponds, is called "the height of a sensible stimulus," or the "perceptible maximum," or better to say, to the minimum limit, or door-step (*Reizschwelle*), corresponds the slightest perceivable sensation (*Empfindungsschwelle*), to the top or maximum limit of excitement corresponds the maximum sensation. Despite the immense difficulties which impede the finding of the zero of this ascending scale, physiologists have succeeded in establishing the approximative mean values of the limit of sensation, or the perceptible minimum. In fact, as to the sense of sight (Aubert) it is almost equal to the intensity of a light which at 5.5 metres off, a strip of white paper would have from a luminous source 300 times less than that of the full moon. As to auditory sensibility (Schafhautl) the weakest perceptible sound is produced by a globule of sugar of the weight of a milligram ($\frac{1}{44}$ th of a grain) falling from a height of 1 mm. [surely an error] at a distance of 91 millimeters ($3\frac{3}{5}$ th inch).

As to the sensibility from pressure (Aubert and Kamler), the limit of excitement is represented by the weight of

0.002 to 0.05 gramme (3-100th to 75-100th of a grain). For the sense of heat (Fechner) the limit is given by $1-10^{\circ}$ centigrade of the temperature of the body. The upper limit of this scale, or the maximum perceptible as respects the different senses, has been established with less approximation. Now, between these two limits of the scale, the relation between the sensations and the augmentation of the intensity of the stimulus, is not simple; on the contrary, from daily experiments it results that the intensity of the sensation does not increase in proportion to the intensity of the stimulus by which it is provoked. Three methods: (*a*) the mean of the smallest differences perceptible, (*b*) of the true and false cases, (*c*) of the errors, serve to formulate the fundamental psycho-physical law, according to which "the quantity of the sensation should augment in absolute equal values, when the relative augment of the stimulus is maintained constant,"—"or a difference between two stimuli will be felt as an equal quantity; provided the relation between the two remains unaltered." This law is applicable to all the senses, and it has been confirmed by pressure, the raising of weights, the sense of heat, of sound, and of light; it is expressed by a number which represents the relation of the additional stimulus to the primitive stimulus. The fraction which, for each species of sensation, indicates the degree of intensity (to which we must add the stimuli, because the sensations differ from each other), is called the "limit of the differences or the proportional constant." Thus the increase or decrease of any sort of pressure made on the skin will not be perceived if the added or subtracted weight is under the relation of $\frac{1}{3}$, the primitive weight; in like manner the constant for sensations of temperature and sound is $\frac{1}{3}$, and for light the limit of the differences has been put at the mean value of $\frac{1}{100}$.

Desiring to give to the fundamental psycho-physical law a mathematical garb, we shall say that this relation between stimulus and sensation is that which exists

between a numerical term and its logarithm. Hence the sensations increase as the logarithms, whilst the external excitements augment as ordinary numbers. And as every stimulus can be expressed by a determinate number, so the psycho-physical may be briefly formulated thus: "*the intensity of the sensation is proportional to the logarithm of the excitement.*"

A Year's Scientific Progress in Nervous and Mental Diseases.*

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THE records of the Nebraska State Medical Society show that the only report of progress on nervous and mental diseases ever made in the history of the society (sixteen years) was made by the writer last year, and expecting that those appointed to make a report this year would, judging by the history of the past, fail to prepare such a report, I have seen fit to prepare a brief volunteer report of such items of progress as have come to my notice during the last twelve months. I have not been able to learn that any original work has been done in our State during the past year, nor that those having charge of the insane hospital have utilized the material at their command to add to the sum of our knowledge of mental diseases.

Last year I said: "There is a growing sentiment that many diseases, not heretofore regarded as nervous (and perhaps all diseases), are of nervous origin." This truth, that all pathologico-histological changes in the tissues of the body are degenerative in character, and whether caused by a parasite, a poison or some unknown influence, are first brought about by or through a changed innervation, is one that is being accepted very largely by the best men in the profession, and the accumulation of facts is increasing rapidly, and the acceptance of this great truth will prove to be little short of revolutionary, in its influence on the treatment of the disease. This is the outgrowth of the study of disease from the standpoint

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of the evolution hypothesis. Derangements of function precede abnormalities of structure, hence the innervation must be at fault before the organ fails. Hence the art of healing should aim at grappling with the neuroses first, for the local trophic changes, perverted secretions and structural abnormalities "are the effects or symptoms, not the causes of the disease. Dr. J. L. Thudicum has studied the chemical constitution of the brain, and he holds that, "When the normal composition of the brain shall be known to the uttermost item, then pathology can begin its search for abnormal compounds or derangements of quantities." The great diseases of the brain and spine, such as general paralysis, acute and chronic mania and others, the author believes will all be shown to be connected with special chemical changes in neuroplasm, and that a knowledge of the composition and properties of this tissue and of its constituents will materially aid in devising modes of radical treatment in cases in which, at present, only tentative symptomatic measures are taken.

The whole drift of recent brain inquiry sets towards the notion that the brain always acts as a whole, and that no part of it can be discharging without altering the tensions of all the other parts; for an identical feeling cannot recur, for it would have to recur in an unmodified brain, which is an impossibility since the structure of the brain itself is continually growing different under the pressure of experience.

Insanity is a disease of the most highly differentiated parts of the nervous system, in which the psychical functions, as thought, feeling and volition are seriously impaired, revealing itself in a series of mental phenomena. Institutions for the insane were at first founded for public relief and not to benefit the insane; but this idea has changed in the past and there is a growing feeling that a natural and domestic abode, adapted to the varying severity of the different degrees of insanity, should be the place for the insane with some reference to their wants and necessities, and that many patients (not all,) could

be better treated in a domestic or segregate asylum, than in the prison-like structures that so often exist, and that the asylum should be as much house-like and home-like in character as the nature of the insanity would permit, while exercise and feeding are accounted as among the best remedies in some cases of insanity, particularly in acute mania.

The new disease called *morbis Thomsenii*, of which I wrote in my report last year, has been carefully studied by several men of eminence, and the following conclusions have been reached as to its pathology: The weight of the evidence seems to prove that it is of a neuropathic rather than a myopathic nature, and that it depends on an exaggerated activity of the nervous apparatus which produces muscular tone, and that it has much analogy to the muscular phenomena of hysterical hypnosis, the genesis of which is precisely explained by a functional hyperactivity of the nervous centers of muscular activity. Until quite recently it was supposed that the rhythmical action of the heart was entirely due to the periodical and orderly discharge of motor nerve force in the nerve ganglia which are scattered through the organ, but recent physiological observations, more especially the brilliant researches of Gaskell, seem to show that the influence of the cardiac ganglia is not indispensable, and that the muscular fibre itself, in some of the lower animals, at all events possesses the power of rhythmical contraction.

Several valuable additions to our knowledge of the anatomy of the nervous system have been made by Huschke, Exner, Fuchs and Tuzek.

Tuzek and Fuchs have confirmed the discoveries of Exner, that there are no medullated nerve fibres in the convolutions of the infant, and Flechsig has developed this law, "that medullated nerve fibres appear first in the region of the pyramidal tracts and corona radiata, and extend from them to the convolutions and periphery of the brain," being practically completed about the eighth

year. This fact is of practical importance in nervous and mental diseases, since it is becoming an admitted truth that the histological changes in disease follow in an inverse order the developmental processes taking place in the embryo. Hence the recent physiological division of the nervous system by Dr. Hughlings Jackson into highest, middle and lowest centers, and the evolution of the cerebro-spinal functions from the most automatic to the least automatic, from the most simple to the most complex, from the most organized to the least organized. In the recognition of this division we have the promise of a steadier and more scientific advance, both in the physiology and in the pathology of the nervous system.

Mr. Victor Horsley has recently demonstrated the existence of true sensory nerves supplying the nerve trunks of *nervi-nervorum*.

Prof. Hamilton, of Aberdeen, claims that the corpus callosum is not a commissure, but the decussation of cortical fibres on their way down to enter the internal and external capsules of the opposite side.

Profs. Burt. G. Wilder, of Ithica, and T. Jefrie Parker, of New Zealand Institute, have proposed a new nomenclature for macroscopic encephalic anatomy, which, while seemingly imperfect in many respects, has, at least, the merit of stimulating thought, and has given an impulse to a reform which will not cease until something has been actually accomplished in this direction. The object being to substitute for many of the polynomial terms, technical and vernacular, now in use, technical names which are brief and consist of a single word. This has already been adopted by several neurologists, of whom we may mention Spitzka, Ramsey, Wright and H. T. Osborn.

Luis holds that the brain, as a whole, changes its position in the cranial cavity according to different attitudes of the body, the free spaces on the upper side being occupied by cerebro-spinal fluid, which, obeying the laws of gravity, is displaced by the heavier brain substance

in different positions of the body. Luys claims that momentary vertigo, often produced by changing from a horizontal to a vertical position, sea-sickness, pain in movement in cases of meningitis, epileptic attacks at night, etc., may be by this explained. These views of Luys are accepted as true, but to a less extent than taught by Luys. The prevalent idea that a lesion of one hemisphere produces a paralysis upon the opposite side of the body alone is no longer tenable, for each hemisphere is connected with both sides of the body by motor tracts, the larger of the motor tracts decussating and the smaller not decussating in the medulla. Hence a lesion of one hemisphere produces paralysis upon the opposite side of the body, and a certain amount of weakness upon the same side of the body. It has recently been established that a lesion of one hemisphere in the visual area produces not blindness in the opposite eye, as was formerly supposed, but a certain degree of blindness in both eyes, that in the opposite eye being greater in extent than that in the eye of the same side. Analogy would indicate that other sensations follow the same law, hence the probability is that all the sensations from one side of the body do not pass to the parietal cortex of the opposite side, but that while the majority so pass, a portion go up to the cortex of the same side from which they come.

Dr. Hammond says that the chief feature of the new Siberian disease called miryachit is, that the victims are obliged to mimic and execute movements that they see in others, and which motions they are ordered to execute.

Dr. Beard, in June, 1880, observed the same condition when traveling among the Maine hunters, near Moosehead Lake. These men are called jumpers, or jumping Frenchmen. Those subject to it start when any sudden noise reaches the ears. It appears to be due to the fact that motor impulse is excited by perceptions without the necessary concurrence of the volition of the individual

to cause the discharge, and are analogous to epileptiform paroxysms due to reflex action.

The term spiritualism has come to signify more than has usually been ascribed to it, for some recent authors are now using the term to denote a neurosis or nervous affection peculiar to that class of people who claim to be able to commune with the spirits of the dead.

Evidence obtained from clinical observations has tended of late to locate the pathological lesions of chorea in the cerebral cortex.

Dr. Godlee's operation of removing a tumor from the brain marks an important step in cerebral localization, and cerebral surgery bids fair to take a prominent place in the treatment of mental diseases.

Wernicke has observed that the size of the occipital lobes is in proportion to the size of the optic tracts, and that the occipital lobes are the centers of vision.

Hughlings Jackson has observed that limited and general convulsions were often produced by disease in the cortex of the so-called motor convolutions. The sense of smell has been localized by Munk in the gyri hippocampi, while the center of hearing has been demonstrated to be in the temporal lobes. The center for the muscles of the face and tongue is in the inferior part of the central convolution; that for the arm, in the central part; that for the leg, in the superior part of the same convolution; the center for the muscles and for general sensibility in the angular gyrus, and the center for the muscles of the trunk in the frontal lobes. In pure motor aphasia the lesion is in the posterior part of the left third frontal convolution; in cases of pure sensory aphasia the lesion is in the left first temporal convolution.

The relation of the cerebrum to cutaneous diseases has been studied much of late, and it is now held that the cutaneous eruptions are mainly due to the degree of inhibiting effect exerted upon the vaso-motor center.

The relation of the spinal cord to skin eruptions has been more thoroughly investigated, and more abundant

evidence supplied to demonstrate the influence degeneration of the spinal cord has in causing skin diseases, notably zoster, urticaria and eczema.

That rheumatism, pneumonia, diabetes and some kidney diseases and liver affections are often the result of persistent nervous disturbance is now held. That a high temperature (the highest recorded) has resulted from injuries of the spinal cord, and where the influence of microzymes is excluded, is not a matter of question. In one instance the temperature reached 122° F., and remained for seven weeks between 108° and 118° F. The patient was a lady; the result was recovery. Hence it cannot be fever which kills or produces rapid softening of the heart and other organs in fatal cases of typhoid. Fever, so far as it consists in elevation of temperature, can be a simple neurosis.

Many other items of progress might be presented did time permit, particularly in the treatment of nervous affections, but this I leave for another occasion.

Report on the Asylum Treatment of the Insane.

CONCLUDED.

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THE use of drugs in the treatment of the insane will now claim only a general consideration. The administration of medicines to the insane for the purpose of restraint, or to control their mental and motor activities, constitutes the only difference in the objects of the administration of medicines from the object of the use of medicines in the treatment of any other form of disease. When medicines have been used to restrain the morbid activities of the insane, they have been, I think, improperly termed chemical restraints. The medical treatment of other diseases could with as much propriety be termed chemical treatment. Any substances, when injected, that has the influence to inhibit, alter or suspend the sensorial motor functions, are to the extent of their action in this direction restraining substances. How they elect the direction of their action upon any special function, and how they influence psychological and pathological processes is not known, but ample evidence establishes the power of many drugs, both to stimulate and paralyze the motor and sensory organs. The medicines mostly used for that purpose by asylum physicians are the narcotics, hypnotics and stimulants. The most efficient of these are opium, chloral, hyoscyamus, conium, cannabis indica, bromides and alcohol. When given to conserve vital energies, by limiting motor and sensory activities, the quantity administered should be sufficient to control the morbid activities. If given in insufficient quantities, they increase rather than diminish the excessive abnormal

action and even increase irritability. The conditions requiring the administration of this class of drugs are relapsing, violent and destructive paroxysms of mania, accompanied by intolerable and exhausting vociferations, incessant voluntary motion, insomnia and somnambulistic states. As a simple paralyzer of muscular action, hyoscyamus or conium have no equals, but administered in safe physiological doses, they do not combine with this action the desired hypnotic effect; opium and its preparations are the only drugs the writer is familiar with that can be relied upon to inhibit abnormal activities and safely induce hypnotism. It is largely relied upon by asylum physicians when these two effects are desired. Hydrate of chloral is preferable to all other medicines in uncomplicated insomnia. Chloral, however, if long continued, induces cerebral and spinal anæmia, and increased sensitiveness and irritability and feebleness of will power. The bromides are not hypnotics, except so far as they tend to soothe the abnormal sensitive cerebral and spinal ganglia. In this manner, in combination with opium, chloral and other positive hypnotics increase their efficiency. The bromides have been considered defibrinators and depressants when their use is long continued, but a discriminating analysis of clinical evidence, as presented in epilepsy and other diseases where it has been persistently used in large doses, will create a doubt in the belief of the deteriorating effects of the bromides. Alcohol acts like opium in so far as it is first a stimulant, then a hypnotic, and when taken in large doses is an efficient paralyzer of psychical and motor energies. In enfeebled and impoverished cerebro-spinal states it stimulates the circulation and aids in re-establishing nutrient processes. It is a valuable remedy when limited to physiological therapeutic uses. It accomplishes certain restraining indications in constructive and destructive activities that no other agent can accomplish.

The object of the administration of drugs and the use of other remedial agents for the purpose of

effecting a return from abnormal mental states to normal state, as before stated, does not differ in theory or practice from the objects sought to be attained in the administration of remedies for the relief of other diseases. In both instances there are two chief purposes to accomplish to arrest diseased and destructive processes, and to assist in reëstablishing healthy function and organs. The purpose of vital forces, when acting in physiological directions, is to maintain normal functions and to conserve organic elementary structure.

The forces which direct pathological courses tend to subvert physiological purposes and the expression of pathological domination may, in the one case, be manifested by functional or organic derangement of the liver or lungs, or, in the other case, by disease of the cerebral tissue or by mental derangement. The principles of treatment, in either disordered manifestation, is the same, which may be briefly stated to be to supplement with artificial aid the vital forces to reëstablish healthy function and structure, and, also, to antagonize, with constructive agents, pathological processes tending and progressing to disintegration and dissolution. It is without the limits of the report to dwell on the special application of drugs to the treatment of the insane. The psychiatrist's special efforts are directed to the purpose of removing the remote and immediate causes which restrain the organs from performing their functions, and in which originate pathogenetic, functional and organic changes.

Therefore it is that a searching investigation of the causes determining the disordered mental state is first entered into on the admission of the person. An influential remote cause that often determines functional mental disturbance and, also, organic disease, is that influence called hereditary, which Ribot defines to be that biological law by which all beings endowed with life, tend to repeat themselves in their descendants.

The exact quantity and quality of this influence or potential is unknown and must ever remain so; therefore,

efforts to oppose the operation of this generally accepted influential cause of insanity must continue to be inefficient. Yet the knowledge of its existence may determine the prognosis and influence the treatment. Innate structural incompetency and imperfections of elementary structures rendering the individual inherently incapable of sustaining the conflict of life is a remote factor in disease which cannot be ignored, and which may be entirely removed by limiting the activities of life within the structural and functional capabilities, also by increasing the vital powers and developing structural elements by means of proper nutrition and increasing the capacity for the consumption of constructive elements. The immediate factors in producing functional derangements and organic disease for the present purpose may be termed toxic, and the agents used to combat their influence upon the system and to further crush disordered processes and restore physiological dominion may be classed as external and internal agents. Water as an external remedial agent is highly prized by asylum physicians, and so is the hot air bath as applied by the Turkish and Russian baths. He who does not know or value the uses of water, possibly can be a Christian, but it is impossible for him to be a clean one. The Romans and other nations may have induced enfeebling, luxacious and even immoral customs by establishing an improper use of public baths, but I question, if the quantity and quality of the evil could be estimated, that their misuse of baths created would compare with the injury produced by contagious and infectious diseases caused by the neglect of the (hygienic) use of water by the people of this age.

The profession are culpable for not educating the the people in the inestimable virtues of water, medicated and simple, used for bathing. There is no substitute for the detergent, depurating, deobstruent, invigorating bath, without the use of which persons cannot maintain health, or be properly or successfully treated for disease. More

than this the individual who neglects its proper use can never attain to the physical, mental or moral perfection of his capabilities. The dormant state of the secretory and excretory organs, especially of the skin in the insane, demands the use of baths to a much greater extent than is necessary for the sane. In addition to its use for its detergent effect, no remedy is often so efficient in calming the excited nerves, and in inducing sleep in the maniacal, as a prolonged hot bath, with or without cold effusions to the head.

The Russian and Turkish baths are especially serviceable. In acute and chronic melancholia and in other forms of insanity, where the emunctory organs are inactive, where the liver, kidneys, and other large glands are laboring under nervous or other inhibiting influences, and where the cutaneous organs are inactive, the skin is cold and clammy; and where exercise and motion does not increase its warmth and vitality, many of such cases will improve rapidly and make satisfactory recoveries, with appropriate medicinal treatment and the frequent use of these hot air and water baths.

The unlimited inhalation of pure fresh air, and the frequent exposure of the entire person to the influence of the sun (nature's restorative elements), which art has no substitute for, are reliable means of cure.

The various muscular movements necessary in exercising the entire body, within physiological endowments, are valuable means of increasing the nutritive capacities, and imparting energy to the motory and psychical powers. The mental exercise attendant upon the various employments, when suitably adopted to the individual, is notably restorative. The same object is aided by the use of the many and varied amusements in common asylum use.

Any substance, administered in the treatment of a disease, is a remedy or a medicine, therefore medicines are not confined to substances known as drugs. The

abnormal physical conditions, of which mental derangement may be a resultant manifestation, are various and numerous. They are conditions associated either with constructive or destructive processes or tendencies. It is important, as a guide to treatment and prognoses, that the two conditions should be differentiated. The former condition always precedes the latter, and, unless arrested, terminates in it, and thus the two conditions may exist at the same time in the same person.

The constructive processes embrace all the disorders dependent upon derangement of digestion, assimilation and nutrition, by which the balance between the nutritive elements, structure and function is disturbed. The typical destructive process embrace the cachexies, cancers, syphilitic tuberculosis, and other degenerations and inflammations. These several conditions indicate the proper treatment which does not differ in the insane from the treatment of other persons with like cachexies resulting in other derangements.

The remedies indicated to correct constructive diseases are chiefly depurators and nutrients, and those indicated in the treatment of destructive processes are especially alteratives supplemented by tonics and stimulants. When these two conditions co-exist in the same person, a combination of the two classes of remedies is indicated. The depurating medicines excite the emunctory organs to increased functional activity, which is essentially necessary to the removal of the effete materials of assimilation and disintegration. The alienist neglects no remedy of this class to restore functional activity to all the depurating glands, especially the kidneys, liver, and the intestinal and cutaneous glands. After the system has been depurated of the retained effete materials, nutritious substances are the proper and, in truth, the only agents to assist the vital forces in the restoration of constructive processes. Drugs are in no sense nutrients, but food is a remedial agent when administered in the treatment of disease. In these conditions

the asylum alienist administers food, in such quantity and quality, that will most surely nourish the entire organism.

It is one of the frequent occurrences in inassimilation that the organism is not uniformly well nourished; one organ being sufficiently nourished, while others are defectively nourished. Alienists, in consequence of this state of nutrition, resort to a variety of nutrient foods to meet these peculiarities of inassimilation. It appears to the writer that sometimes the organs are possessed with perceptive powers which enable them to select such elements of nutrition as is best adapted to their structures and wants. All physicians should study food as a remedial agent. He should not only understand its elementary constitution and chemical construction, but should be familiar with its vito-chemical relations, and its various physiological and pathological adaptabilities. The physician, therefore, who would excel in therapeutic skill must not only know what to cook, but how to cook.

The various stimulants, alcohol, coffee, tea, cocoa and the spices may not be efficiently nutrients, but they promote nutrition by increasing functional activities, and are, therefore, valuable remedial agents. It is proper to note that asylum physicians also prescribed many, if not all, of the drugs that are supposed to sustain, strengthen, and even to nourish the organism. Among these may be mentioned quinine, iron and its preparations, the bitter tonics, phosphorous and its many compounds, all and many more are used to meet certain indications, but apart from their stimulating effect, not one of them can sustain their reputation as nutrients. Electricity may also be classed as a valuable stimulating remedial agent.

The remedies indicated and chiefly used in the treatment of the destructive or disintegrating processes which are caused by the cachexies are the alteratives, deobstruents and tonics. The mercurial preparations, iodine and its potasic and ferric combinations, stand at the head of this class, and do not disappoint the prescriber when

wisely used. These and other alteratives are efficient eliminators administered conjointly with evacuants. They increase the functional activities of the emunctories and the evacuants eliminate the excretions from the system. Many other eliminating drugs are prescribed, which have supposed elective affinities for certain organs. The list of tonics far surpasses in number and supposed virtues all other remedial agents, and it is fortunate for the prescriber that it is so large, as he needs the almost endless variety to draw upon in his emergency to find one that will sustain his efforts to support and strengthen the feeble. A few of the ferric and the arsenical preparations, quinine, the bitter tonics, and preparations of phosphorous, complete the list of drugs which apparently aid in separative processes in conditions of the system of respondent capabilities. The asylum alienist, properly estimating the importance of classification of the insane as an important aid to successful treatment, endeavors to make accurate diagnosis of cases when admitted, so that the person can be assigned to the department where other inmates reside whose form of insanity and whose conduct is least calculated to make unfavorable impressions, and to retard the recovery of associates. The effect of the intimate daily association of the insane upon each other, as they are now maintained in all asylums, is an unsettled question with alienists, and the general physician coincides with the public in the feeling of fear and incredulity at even the possibility of beneficial treatment being attainable under such forced intimate association of the insane. It must be admitted that the subject is environed with difficulties of explanation, which would be satisfactory even to scientists. My experience leads me to the conclusion that, in exceptional and rare instances, curable cases are injured and their recovery retarded by being associated with the insane, but I do not remember a single instance in which I thought such association prevented ultimate recovery. I think I have seen instances in which the impressions made by such asso-

ciation influenced initiatory steps which led to recovery.

There are two explanations in my opinion why association of the insane has not the retarding and obstructing effect upon recovery that is generally attributed to it. First, insanity is an expression only of functional and organic disorder; remove the disorder upon which the insanity depends, and the return to mental soundness is secured. Therefore, the teachings of science hardly prepares our minds to admit that the immaterial influences of association are capable of creating any changes in function or structure; secondly, the insane generally are peculiarly incapable of exercising that rarely well-developed faculty, even in the sane, of introspection, or of analyzing their own internal states. It is, therefore, the exception when the insane recognize their own disordered mental state. Many who are incapable of conceiving their own mental delusions, are capable of determining with more or less accuracy the disordered intellect in their associates. This peculiarity may be preventive of injurious influences asserted to be the effect of the association of the insane. No matter how near the truth this explanation may be, wise classification of the curable insane in asylums secures whatever benefits there may be, and limits whatever evils that are asserted to be produced by indiscriminate association.

Some forms of insanity also have certain tolerably uniform affiliations with physical disordered states, which have been observed and may indicate and direct the diagnosis and treatment. Derangements of the function of the liver has uniformly been associated with hypochondriacal and melancholic mental states. The two conditions have for ages been associated together, and the hepatic derangement has likewise for ages been charged with producing the mental condition. Again, who has not observed the effect of depressing emotions to weaken the constitution and engender hæmatic changes, resulting in dangerous anæmia? It is not an uncommon observation

that "Sorrow and grief make the cheek grow pale," and gnaw at our life and health. Daily clinical experience establishes the effect of depressing emotions in producing anæmia; but still we are ignorant of the way in which they act upon the blood, whether by interfering with sanguification, or by increased consumption of its elements. Alienists carefully examine into the history of the insane. They try to obtain a correct and complete "pedigree of the disease," as Mr. Jonathan Hutchison appropriately designates the history of disease. Alienists, more than the general physician, recognize the influence of inherited predisposition to disease, and, also, the proclivities of inherited physical peculiarities and mental eccentricities. The constant clinical conformation of the above assertion conforms to a general physiological law of genesis, that the more complex and highly organized the structure, the more certainly will the vital forces prove faithful to their office of reproduction or perpetuation of exact resemblances, both of structure and function. This law of genesis is constantly observed in the descent of intellectual force and direction and of nervous activities, not only to one generation, but through many generations. Did the limits of this report permit, it would be interesting and instructive to trace the descent of the temperaments and idiosyncrasies and their legitimate or accidental influence upon pathological conditions of nervous structure and functions.

The alienist, with educated perception of such influences, observes in the individual accumulated activities of descent in the phlegmatic temperament, with its tendency to the accumulation and deposit of fat, and with the increased liabilities to certain diseases. He sees also, in the sanguine temperament, the excessive activity of the circulation, and the large and active digestive capabilities, which, likewise, determine pathological states. Eccentricities are more potent inherited properties than the former and convey with them more potent forces, which are more certainly determined abnormal

states of structure and function, and, therefore, must always constitute an important factor in the diagnosis, prognosis and treatment. The subject of diathesis, or the bodily conditions that predispose to disease, is one of too great interest to pass entirely without notice. Diathesis may come by descent from ancestry or may be contracted. In either case it is the existing proclivity to disease that interests the physician. It is asserted by eminent pathologists that all persons inherit constitutions or conditions of the system that constitutes a diathesis, which gives them a proclivity to diseases of descent. If time permitted, numerous examples of disease manifestations could be traced back for many generations, showing the great importance of searching back for the pedigree of disease. The effect of diathesis, however induced, is to enfeeble the organic and functional powers, and to lower the tone of the vital forces. It thus becomes a most important subject of consideration to the alienist. If the nervous tone is low, the power of evolving nervous energy will be correspondingly diminished, and the capacity to resist irritation and disturbing influences will also be limited. Nervous energy depends upon the nutrition of the nerve cells. When the nervous system fails to regulate the supply of blood to various parts and maintain the normal balance of circulation, the various causes of disease act with increased effect. Loss of tone may depend upon degeneration of nerve cells. Not only may loss of tone aggravate a diathesis, but diathesis may create loss of tone. This report has occupied but little space in considering either special forms of insanity, or the especial virtues of individual drugs in the treatment of insanity. It was deemed more profitable to submit the general principles of asylum treatment, guided as we believe it to be by the teachings of science, than to discuss the action of drugs; since their effect upon a disease organism, with disordered mental manifestations, does not differ from their action upon the system under the operation of other organic and functional disorders.

Finally, the reporter, more than one-third of a century ago, received his medical education in the University of Pennsylvania, in the Blockly and Pennsylvania Hospitals. The educators of these institutions, namely: Chapman, Gibson, Jackson, Wood, Horner, Hodge, and others, believed in the power and efficiency of drugs to cure disease. The writer has had opportunities, seldom surpassed, embracing military, hospital and selected private opportunities to test the efficiency of drugs in the treatment of disease. These clinical tests have embraced in design the theory of medication of the experimentalist and rationalist, of the potentialist and the nihilist; and now the teachings of these years of experience, nearly twelve of which have been devoted to the treatment of insane persons, justifies him in asserting that the physician who administers drugs or other remedies with the object and expectation that they will, of their own inherent virtues and powers, cure insanity or other disease, will reap the reward of complete disappointment. The physician who administers remedies with capabilities to antagonize destructive pathological processes, and also remedies possessing energies capable of aiding vital activities, to displace abnormal conditions with normal ones, will not be dissatisfied, but will fulfill the mission of a physician. To come within the limits of this report I fear I have been too concise to be intelligently clear. It is said that "When giants build, men bring the stones." Giants have erected the temple of treatment for the insane. The report attempted to present only one imperfect outline of this magnificent temple to your view. It becomes the duty of physicians of this and succeeding generations to examine any stone of this structure, not with a censorious intention, but with the true spirit of a scientist and a lover of his fellow-man, that they may add other stones to the knowledge that will increase the protecting and the restorative capacity of the grand structure.

How Shall the Student of Psychiatry Examine the Nerve Centers Post- Mortem?

By E. C. SPITZKA, M. D., New York.

THERE are a number of excellent manuals on histological and pathological *technique*, to which the student naturally turns for guidance, and which, in regard to the ordinary methods of the post-mortem room and the preservation and preparation of visceral specimens, are accurate and satisfactory. But those organs with which the alienist is chiefly concerned are either neglected in these treatises, or dealt with from the standpoint of the general pathologist. The articles contributed to neurological periodicals are scattered and often inaccessible to the asylum resident. In consequence, much valuable time is lost in fruitless attempts, and the novice either becomes discouraged or attains his end at a disproportionate expense of time and thought; having to discover for himself what he might naturally expect to have found in the writings of his masters and predecessors. In connection with my position as a teacher of neuro-anatomy and pathology, and as referee in a number of pathological examinations, some of them of a medico-legal nature, I have frequently had my attention called to these facts, and it is but in fulfillment of a promise made to the successive classes, to whom I have taught "theoretical neurology," that I undertake the enumeration of some of the practical methods used in my laboratory. They do not differ in any fundamental respect from those ordinarily in vogue; but I believe what is useful in them can be conveyed more emphatically than has yet been done. Indeed there is no working neuro-anatomist who has not these methods at his fingers ends, consequently, if any merit attaches to these lines,

it is that the writer has not been too proud to speak of very simple and apparently trivial subjects.

I.—REMOVAL OF THE BRAIN AND CORD.

In most autopsies conducted in public institutions, both the brain and cord are permitted to be removed. In asylums it is desirable to previously make measurements or tracings, or even casts of the skull, if not of the entire head. When possible the body should be placed face down shortly after death, the head being somewhat elevated. The features can be protected either by means of a sawdust or cotton cushioned box. The object of placing the body in this position is to avoid excessive hypostasis to the dorso-cephalic region. The venous channels may be made to distend greatly after death, and at the pauper asylum on Hart's Island, I repeatedly produced "congestion of the frontal lobes," or "congestion of the occipital lobes," according as Dr. Kiernan, who then catered for me, had the body placed prone or supine. In addition, the accumulation of a large quantity of dark blood in the cerebral sinuses and vertebral veins leads to a continuous inundation of the operating field by an obscuring fluid, if the body has long lain on its back.

The best method for removing the cerebro-spinal axis is the one which permits the retaining of its different segments together. By the ordinary method the brain is removed separately, and the cord separately. It is true that if the spinal cord be previously loosened, it may be dragged through the foramen magnum when the brain is lifted up, through the verticalar opening. But in its simplicity, readiness of execution, and for other reasons, the following, which I have repeatedly demonstrated, has proven the most advantageous:

1st. *Position of the Body.*—The body lies on its ventral aspect, the head being permitted to hang free over the edge of the table.

2nd. *Incision.*—Only one incision is required. This

should run in the median line, beginning about an inch or two behind the hair line, running along the sagittal suture, the middle of the neck and the dorsal furrow. It should end at about the fourth lumbar vertebra, unless a suspicion of disease of the cauda equina necessitates its prolongation to the sacrum. The knife used should be strong-bladed, and the incision carried at once down to the bone. Then two flaps are made, the fleshy parts (scalp and nucho-dorsal muscles) being cleanly separated from the parietal, occipital and post auricular region, and the spines and laminæ of the vertebræ. The flaps are easily managed, particularly, if a block be placed under the neck, pushing the cervical and occipital bony shell through the gap in the soft parts. If the operator will bear in mind that his aim is to remove with the least possible injury a soft pulpy organ, enclosed in an accurately fitting bony shell, which in turn is covered by a fleshy rind, he will recognize the importance of having a clean bony surface before him everywhere. The more attention is given to these preliminaries, the easier, and hence the more gratifying, is the examination of the important organs within.

3rd. *Opening of the Bony Shell.*—Either the cranium or the spinal canal may be first opened. My usual plan is to make the saw lines of the cranium first, then to remove the vertebral arches, and finally to pull off the cranial cap.

(a.) *The Sawing of the Cranium.*—The formation of the two lateral flaps exposed the posterior segment of the skull. The saw should be passed around in the direction of a string running around in a frontal plane, behind the ears. It is possible to make a single continuous circular incision with the saw, but for purposes of greater security, its lateral halves may be allowed to meet at an angle in the middle line. Below, it should run through the mastoid protuberance. Its continuation towards the middle of the foramen magnum may be made by a short saw, or by a few taps of a chisel, as the basilar bone is very thin. The usual procedure for loosening the bony

cap is then gone through with, but it is left in place for the present.

(b.) *The Opening of the Spinal Canal.*—The posterior half-ring of the Atlas is intimately bound to the occipital bone by the obturator membrane. This being incised, a quantity of venous blood usually escapes. As each vertebral arch is broken (as far lateral as possible) by blows directed inwards and downwards, its ligamentous attachments are divided in the line of the fracture and the arch forced up. In this way the approach to the next vertebral arch is made easy and injury to the cord is avoided.*

The connections of the arches with each other are not disturbed, so that the entire vertebral shell is removed in one piece.

The calvarium is pulled off by means of the blunt hook, as in the ordinary method, traction being made from the parietal end, and countertraction in the neighborhood.

The observer has now lying exposed, in its continuity, the sac of the *dura mater spinalis* and *cerebralis*.†

4th. *Opening of the Dura.*—Over the cauda equina the dura is lifted by the forceps and nicked, the blunt end of a scissors being then run underneath. It is ripped up by an easy, steady, upward movement, care being taken to press upward (dorsad) with the blunt pointed blade. Arrived at the junction of the spinal with the cerebral sac, the incision is made to branch into two, each of which follows the cranial saw line about an inch distant.‡ The convex part of the dura between the tentorium and great median falx, is next incised, the incision being started by puckering it and capping off the puckered portion.

* I am informed that Dr. Leuf, of Brooklyn, removes the spinal cord uninjured in seven minutes, illustrating that perfection and confidence are to be obtained only by considerable practice, and that natural tact which this expert dissector possesses in so eminent a degree.

† It is apt to be torn at the part corresponding to the occipital fossæ. But usually this accident, which is of no moment, can be avoided by grading the traction.

‡ The object of this is to allow of a part of the dura to be reflected on the bone section, to protect the brain in case it overhangs (which, by the by, is not necessary nor desirable) from the action of its rough apiculae.

The median falx is then explored and cut, the scissors being directed towards the base of the skull and a little forwards. In like manner, the part of the tentorium on each side intervening between the cerebellar and epicerebral dura is divided. The dura should not be removed by a rude pull, as I have often seen done, but the finger should be carefully passed around to separate the normal and abnormal adhesions existing with the leptomeninges, and the entry point of the Vena Galeni into the straight sinus being exposed, these are cut off at the opening of the sinus. Then the great fibrous membrane is removed, and the observer sees the cerebral hemispheres, the cerebellum, medulla oblongata and spinal cord in their continuity; *in their proper mutual position*, and without having had to subject these parts to the squeezing, lifting and gouging inseparable from the ordinary method.

5th. *Removal of the Nervous Axis.*—The cauda equina is divided transversely a short distance below the conus terminalis. The nerves are separated at their foraminal exit, the cord being lifted in this process so as to expose them and to facilitate the division of the ligamenta denticulata. That by *lifting* I do not mean “*tugging*,” no one who is acquainted with the consistency of the spinal tissues will need to be told. The roots of the four last cranial pairs being *quasi* continuations of the spinal nerves are divided in this stage of operations. By rolling the body and chiefly the head a little to one side or the other, the seventh, eighth and fifth pairs are readily exposed and separated. A cloth covered with oil-silk or other smooth non-adherent material is then run in between the frontal region of the skull and the frontal lobes, the fingers having previously explored this recess as far as possible without crowding, and, now the head being depressed, the pituitary infundibulum is brought into view. This being cut across, the optic chiasm is seen, whose nerve portions are divided.

The brain is now merely connected with the stationary part of the skull by a few arachnoidal and vascular

filaments and the olfactory bulbs. On rolling the head around they break, the brain (with the attached cord) falls out by its own weight. A vessel filled with either a saline solution or the preservative fluid is held underneath at this moment, and supporting the dropping organ by means of the cloth aforementioned, the transfer is easily accomplished.

The object of transferring the organ to a fluid is that it is not as apt to become distorted. If allowed to rest on a flat surface its soft substance would flatten out; the consequence has been that with few exceptions the base of the brain in most of the specimens sent me for examination was almost unrecognizable, the beautiful sculpturing of this region being replaced by a level sameness. Probably the old discussion between Huxley and Owen as to whether the cerebellum was uncovered in the anthropoid apes, would never have reached the dimensions it did, had such a method as the one described been employed. The specimens (I except those preserved most recently,) of brains of anthropoid apes in Scotch and English collections must have been lamentably deficient in this respect, if I am to judge as to their condition from an expression of Professor Calderwood, who, when he examined my collection, stated that the bold prominence of the crura, the pons and the olive in the orang-outang and chimpanzee struck him as remarkable, and that he had seen nothing to indicate so close a human resemblance in the specimens preserved in the numerous collections he had visited at home.

Before proceeding to describe the method of preservation and segmentation of the nervous axis, I will detail the advantages of the method as instanced in the observations to be made in the progress of the dissecting procedure briefly detailed above.

1st. A better view of important and ordinarily inaccessible parts of the skull is obtained. The external relations of certain fractures of the base may be studied. The section of the mastoid bone by the saw paves the

way for an examination into, if it does not reveal, the existence of ear disease, so frequently associated with cerebral trouble. Disease and injury of the upper cervical vertebra are also most readily demonstrable in this way.

2nd. The sac of the dura is exposed simultaneously and clearly in three of its divisions, the cerebral, cerebellar and spinal. The three great encephalic sacs are visible in their natural relationship, and the confluences of important sinuses, with those portions of the latter most liable to thrombosis, are accessible to examination. The different processes, falx and tentorium, are readily manipulated, and the attachment of important structures, particularly the *tela*, may be separated without that preliminary dragging, which in the ordinary method proves fatal to the attachment of the pineal gland and *diatela*.

3rd. The great fissures may be demonstrated and explored while the brain is *in situ*. These are the great *inter hemispherical cleft*, and the *transverse encephalic cleft*. In the former the splenium of the corpus callosum, in the latter, the arachnoidal connection of the cerebellum with the mesencephalon, and the extraventricular surface of the thalamus may be explored. Meningitic exudation in the former has important relations to certain ocular disturbances whose pathological cause might escape us if the brain were examined by the ordinary means.

4th. The beautiful arachnoidal lamella, which bridges the gap between the cerebellum and the medulla, is clearly brought into view; on dividing it, the posterior half of the fourth ventricle, covered by its atrophic membranous roof, is seen. At the same time, the inquiring mind may attempt to solve the doubts about that *ignis-fatuus*, the foramen of Magendie, and familiarize itself with the appearance of the choroid plexus for the fourth ventricle, which rolling out of the "cornucopia," was demonstrated to me as a syphiloma by an enthusiastic bacteriologist and hospital pathologist, not very many years ago.

I do not insert this remark for the purpose of varying

the dull enumeration of technical details. I have a large collection of curiosities culled from cerebral pathological literature, particularly "case" records, which sadly illustrate the necessity of the pathologist familiarizing himself with the normal anatomy of the organ, self-evident as this would seem. "Peculiar white streaks running across the floor of the fourth ventricle" are recorded as lesions in two instances, though the normal stria acustici are obviously intended; "pathological enlargement" of nerve cells "in the parietal lobe" was heralded as an important discovery, at an asylum laboratory, several years after, the nests of giant pyramid had been proven to be essential ingredients of the healthy cortex, their absence not their presence being morbid. Dark "triangular patches near the calamus scriptorius" sounds suspiciously like a paraphrase of the vagus nuclei; and the pigmentation of nerve cells in the nuclei of the pneumogastric nerves" discovered in epileptics, is known to be a rather constant occurrence in persons dying of ordinary diseases. But for the vagueness of the topographical description, I would be able to identify the red nuclei of the tegmentum in a case of alleged symmetrical red softening of the "thalami;" and gray degeneration of the pons Varolii has had for its basis the gray intercalations of that body, which in some individuals are strikingly well-marked as to color. The errors made by beginners are always instructive. I remember how I was staggered (when a novice) by certain grayish patches in the white substance of the cerebrum, till following up, by further sections, I discovered that they were the most posterior serrations of the lenticular nucleus.

5th. No part of the oblongata or cord is lost. In the ordinary method, a segment of that important region including the upper part of the cord and the pyramidal decussation is divided obliquely or crushed beyond recognition.* Renewed attention having been of late

* Even with the ordinary method this may be obviated by dividing the cord within the spinal canal by a transverse incision between the upper two cervical vertebrae.

directed to the question of the variability of the decussation of the voluntary motor tract, the importance of preserving this region must be evident.*

6th. The parts are not strained, crowded, and subjected to traction to anything like the extent necessitated by the ordinary method.

7th. The roots of several of the most important cranial nerves which are dragged out into pultaceous strands, or torn in the ordinary method, are seen *in situ*. Nothing in neuro-anatomy is more beautifully demonstrable than the roots of the ninth, tenth and eleventh pairs, by the procedure described. The student will satisfy himself that the diagrams of Cruveilhier, Burdach and Rudinger are not fancy sketches nor unattainable ideals, as those following the old method are apt to think.

8th. Tumors at the base of the brain, whether connected with the bone or *dura*, are better explorable by this method, which exposes the *clivus* to ready access of the examining finger, than by the other. Tumors and other focal lesions of the frontal lobes are alone difficult of access while *in situ*; but the difficulties are not as great as those connected with the examination of the base of the brain (which is of far greater importance) by the ordinary method. I was enabled to determine the nature and location of a growth on the *genu* of the *corpus callosum* before the removal of the brain and by a simple exploration of the interhemispherical cleft. The brain is now in my collection and perfectly intact.†

II.—DISSECTION OF THE BRAIN AND CORD.

I assume that all recent appearances, such as the degree of injection of the blood-vessels, color and consistency of the membranes and tissues, have been made

* In over two hundred examinations of normal and pathological brains, I failed to find any such conditions as described by Flechsig, namely: absence or gross asymmetry of the decussation.

† The case was published by Dr. F. A. McGuire, in *The American Journal of Neurology and Psychiatry*, for 1884. I first demonstrated this method in private autopsies at Ferrytown, in a case of Dr. McCleery's, in 1877, having made preliminary dissections in hospital cases.

in the progress of removal, that they have been verified after removal, and that the interior of the skull has been carefully explored. The pituitary body, which was separated at its infundibular attachment, may now be removed from its nest and examined. It is sometimes the site of neoplasms, playing no other part in the economy except the demonstration of certain evolutionary hypotheses and the occasionally providing the substratum for disease, a position it shares with the pineal "gland" and the appendix vermiformis.

‡A part of the fourth ventricle was visible before removal; the lateral ventricles may be explored by dividing the corpus callosum and cutting the fornix. In this way the anterior horn and body of the ventricle are exposed. At the base of the brain, the membranous attachment of the hippocampal edge may be easily recognized by its vicinity to the optic tract which it follows, and then torn by forceps and scissors; this exposes the inferior horn. In the latter situation, the choroid plexus may be seized and dragged out. Most, if not all, the features of the ventricular cavities can be studied in the course of the later segmentation of the brain. I have been frequently amused by the routine procedure of endeavoring to measure the amount of fluid in the ventricles, by catching it in a vessel, as it flows out of various incisions. In the ordinary method, most of the fluid is forced out by the gouging to which the brain is subjected. A drawing with measurements showing the degree of dilatation of the ventricles, in cross section, is a far better record than the number of ounces or cubic centimeters of fluid, which never can be accurately obtained. It is advantageous to collect the fluid for analytical purposes.

The cerebellum, being attached by the three peduncles and *valvula* to the isthmus, must be removed in order to admit the hardening fluid to the floor of the fourth ventricle, as this is one of the most important parts to examine and preserve. In fact, the rhomboidal expanse of

this region may be called a "landscape of the cranial nerve nuclei," set in the frame-work of the cerebellar peduncles. To preserve the relations of the latter, I divide the peduncular mass high up in the cerebellar substance. The valvule is first perforated, the velum cerebelli torn, and now a bistouri (or thin-bladed scissors) is passed through both openings, and passed, as my friend Professor Wilder would call it, ecto-ventrad, so that it would emerge just below the flocculus. It is to be borne in mind that the cerebellar attachment is a semicircular one, the concavity of the semicircle corresponding to the anterior half of the fourth ventricle, the posterior ends of the attachment being swollen, the middle portion being thinned out into the valvula.

The axial part of the brain left behind is to be separated from the cerebral hemisphere in different ways, according to the requirements of the case. We often know before hand whether a focal lesion is present, or we are directed by certain indications to suspect the existence of such. If we suppose that the lesion is in the internal capsule, the thalamus, subthalamic region or the intra-hemispherical ganglia, it will be desirable to maintain a continuity of the thalamo-cerebral region with the cerebrum. In this case I separate the axis by a transverse section through the anterior third of the anterior pair of the corpora quadrigemina (optic lobes), and by dividing the corpus callosum, if it has not been divided before, the anterior, middle and posterior commissures, the tectum, chiasm *lura** and interpeduncular lamina, symmetrically separate the fore-brain.

All surface appearances should be carefully noted, and it is particularly necessary to examine the cut surface of the peduncular mass (tegmentum and pes) to see if there be any shrinkage or discoloration of a special area, that may point to the existence of a secondary degeneration. Where such is found, all other considerations become subservient to tracing out a process which, more than any

* "*Lura*" is a term given to the neck of the infundibulum by Wilder. Some may regard it as a superfluous addition to our synonyms, but it has the advantage of brevity.

other, is destined to prove the Ariadne thread of the cerebral fibre-labyrinth.

The halves of the fore-brain may be segmented according to any principle of topography with which the student is familiar. The frame-work of Bitot is advantageous, but not absolutely necessary. A good anatomist can hold the parts in their natural relations, or sufficiently so, while he makes the sections. These may be made in the frontal or horizontal plane. The latter shows the topography of the capsule best; the former is best studied for the peduncular and thalamic region.

The sections may be as thin as the observer can make them as long as the parts appear structurally healthy, but as soon as a diseased spot is encountered on the face of a section, the next section should be made at least a half an inch, if not an inch, further, in order that enough tissue may be left to permit of the making of sections in the microtome.

The peduncular tracts are best preserved whole, unless special reasons exist to the contrary.

The spinal cord should be divided into as many segments as there are pairs of spinal nerves, each segment to include the origin of a single pair. The division is best made under the surface of a saline solution or preservative fluid. The segments being examined by the naked eye, and such small scraps removed as suffice for examination under the microscope in the fresh state, each is divided transversely, the lower half of each being preserved in alcohol, the upper half in Müller's fluid or a simple bi-chromate solution. I shall give the reasons for this in the second part of the article. I am frequently asked by those who send specimens to my laboratory for examination, what preservative fluid they shall use. I have uniformly replied, that where the state of the cortex was in question, three pieces should be taken from each important gyrus or lobule; one being preserved in strong alcohol, one in Müller's fluid, and the third in chromic acid. The advantage of using different hardening

re-agents is, that artificial appearances, due to the use of one or the other fluids are readily discovered and gauged. It was to this precaution that I owed the discovery of the artificial nature of the *corpora Grayii*. I have also subjected the cortex to the action of glycerine, with more remarkable results in the way of shrinkage.

Where a focal lesion is discovered, which has led to secondary degeneration, it may be that the observer is narrowed down to the use of one preservative fluid; the one with the least attendant evils is bi-chromate of potash. Gudden has recently objected to this preparation, but I propose to deal with the involved questions later on. If any important histological question is to be determined, the one or the other segment, including the lesion, may be preserved in alcohol.

My object in the present communication being particularly to refer to those points which interest the beginner, or to have the necessary directions for transportation reach those who are in the habit of sending or have sent specimens for examination to my laboratory, I will postpone the consideration of some details connected with preservation and dissection to the second part of this paper, and limit myself to essential preliminaries at present.

Transportation.—Tissues should be at least partially hardened before transportation. They should be, if the distance is great, sent in tin cans carefully soldered, and having a cubic capacity of at least five times the bulk of the specimen. The fluid should fill the can as full as is compatible with soldering, and the brain or part of the brain wrapped up in cotton wadding, thoroughly soaked in the preservative fluid, and so packed as to render violent shaking of the specimen impossible. I have received brains packed in this way from St. Louis, Chicago and the Eastern States, in as good condition as if they had been prepared in my own laboratory.*

* I am willing to make or have made at my laboratory pathological examinations, in case the interest attaching to the particular specimen warrants it. Cases of organic disease of the spinal cord and oblongata, secondary degenerations, focal disease of the hemisphere, asymmetry, anomalies of the gyri and corpus callosum,

The rules to be followed in hardening are here subjoined:

1st. The specimen should be surrounded by the fluid on all sides.

2nd. The fluid should be at least twelve times the bulk of the specimen—more, if possible.

3rd. The temperature should be low, but never reach nor run below the freezing point.*

4th. If the preservative fluid be chromic acid or a chromic salt, its strength should vary with the temperature. If the later is high, this should be greater; if low, less. Most of the solutions recommended are too weak or too strong. Müller's fluid about corresponds to the average requirements. The smaller the specimen, the sooner after death it was removed, the larger the quantity of fluid, the more frequently the later is changed and the cooler the weather, the less concentrated the solution may be.

5th. The preservative fluid should be changed after the first twenty-four hours after the first four days and after the first fortnight. After the first six weeks it may be gradually reduced in strength, if it is intended to delay work on it. This applies to solutions other than alcohol. Alcohol should be of the best quality, changed after the first hour, the first two days, the first week and the first month, in order to secure good results.

6th. The specimen should not come in contact with the bottom or sides of the vessel, cotton wadding should intervene. The later should be weighted and thoroughly soaked before being used, as in the ordinary (oily) condition it does not saturate readily in aqueous solutions. Antiseptic cotton is an excellent article for this purpose.

7th. The natural and other cavities of organs should be filled with the preservative fluid at the time of dissection. This applies particularly to the ventricles.

brains of monstrosities, etc., are in particular request. A complete report of the findings and duplicate specimens, where sections are made, will be sent to the one submitting the specimen.

*Cracks similar to those figured in Mann's "Psychological Medicine" are produced by frost.

When the whole brain is to be preserved, its vessels should be injected under slow pressure till the fluid comes out of the veins. Wilder has perfected and described an apparatus for making such injections slowly and surely, in a communication to the American Neurological Association.

There are a number of details relating to the further preservation of specimens which I will refer to in their proper place. The above are intended simply for the preliminary preservation of tissues intended to be sent or carried a distance.

The details of cutting, staining and mounting specimens, properly belong under the consideration of the various methods to be enumerated in a later portion of this paper. Before proceeding to describe these, I desire to call attention to a few general features involved in the manipulation of sections already cut. Their enumeration at this point will do once for all and render tiresome repetition unnecessary. He who, in going through the laboratory routine, forgets that the work he does is simply a means to an end, and comes to regard the squareness of a cover-glass, the polished edge of a slide and the neatness of the specimen case as of primary importance, was never intended for an investigator. While he who goes through the same routine mechanically, with his wits a wool-gathering, who requires a servant at either hand to hand him the next re-agent necessary in his work, who has to consult a book or his teacher at every step, instead of devising some simple contrivance himself, had better delegate the entire work to the servant, if he has one, on whom he can lay the *onus* of his labors. He may be a man of philosophical tendencies, who, with the specimens lying before him, perhaps, shines in debate or original composition, but he never was intended by nature to be a laboratory worker. There is a species of psychical indolence which is at the bottom of the mechanical helplessness of such individuals, and, in my experience, it is utterly hopeless for them to struggle against their constitutional infirmity.

In manipulating sections exposed to the action of fluids, let the student remember that they are delicate affairs at best, but that, with due precaution and a slight exercise of judgment, the thinnest and most brittle section may be preserved through all the vicissitudes of staining, washing, dehydration and mounting. As to sections properly hardened, and cut from tissue having the rubber consistency, the amount of abuse they will sometimes survive is something remarkable.

The most important rule, for self-evident reasons, is never to insert a ladle in an opaque fluid; as well try to fish out lace work floating in ink with the expectation of not tearing it. Where the sections are small and of good consistency, the vessel may be given a twist, which may float sections so near the surface that one of them can be seen and caught in the ladle. As the object of fishing out individual sections can only be to test the degree of staining, this and analogous procedures are really unnecessary, as scraps, or duplicate sections, can be subjected to the action of the same staining fluid in another vessel and examined from time to time; or one section may be permitted to attach itself by drying with a part of its area above the fluid level, the remainder will exhibit the action of the staining fluid. But any procedure involving work in the dark is to be condemned.

The transfer of sections from one fluid to another is best effected without touching the sections. If, for example, I desire to wash sections exposed to the action of carmine or hæmatoxylin in water, I slowly tilt the vessel containing them in a larger one, and permit the fluid to run off at the top in a steady, small stream. A steady hand is required in this procedure, as a tremor will cause the sections to become agitated, to roll over, or even to be carried away by the stream. Smokers are, therefore, clumsy workers, and their habit of smoking while at work, is most detestable, as the ashes of their weed are apt to be found covering the sections, slides or fluids. It is possible to perform the act described without materially

changing the position which the sections occupied at the bottom of the vessel beforehand. Two washings, or more, are required in the case of most staining fluids. If no precipitate has formed at the bottom of the dish, these washings may be all carried on in the latter. A funnel is fixed in a stand, in such a way that its lower end touches the bottom of the dish at its side, a stream of filtered water is then allowed to run into the funnel; the smaller and steadier this stream is, the better. The fluid rises so slowly in the dish that the sections are scarcely disturbed, and at all events escape being torn, an accident liable to happen if water is poured in too rapidly, or in irregular spurts. The same procedure is repeated with subsequent washing. I have, in order to economize time, and to illustrate the applicability of this method, succeeded in keeping a set of thirty sections in the same dish, from the moment they were cut, through all the stages of staining, washing, dehydrating in alcohol, and rendering transparent in clove oil.

When precipitates are found to have formed at the bottom of the dish—which is apt to be associated with a corresponding precipitation in and deterioration of the sections—the above procedure is to be varied as follows: The staining fluid having been drained off to the last drop, the dish is held so that its bottom is vertical, and then the entire dish, with the sections adhering to the bottom, is slowly and by a steady movement submerged in a large second one filled with filtered water. The sections will float off in the latter; those still adhering are easily loosened, either by time or slightly agitating the dish. If the precipitate is very recent and the sections properly cut, the precipitate is easily removed by producing gentle currents in the water.

The advanced worker will devise any number of labor-saving contrivances, analogous to the wholesale disposal of sections, in staining fluid above mentioned. The beginner, however, will be grateful for the detailing of some of these. It is a well known fact that a larger

number of skilled movements, which are repetitions of each other, can be performed in a given time, than of movements which differ in character. Thus I can successively fish out twenty-four sections from clove oil and transfer them to glass slides, in the same time that I can fish out one section, drain off the clove oil, select a cover glass, look for the Canada balsam, put a drop on the specimen, put back the dropping rod, clean the cover glass, put it in the section, and lay it to one side. For this reason, if I have twenty-four sections to mount—assuming that my laboratory is not dusty, which no laboratory need be—I do as follows: 1st, I place long tin boxes, half-an-inch wide, half-an-inch deep and twelve inches long, parallel with the wall and insert a wedge under one end of each, so that they decline at an angle of about five degrees. 2d, I lay twenty-four cleaned slides, in a row, before me. 3d, I transfer a section to a slide, allow the mass of the clove oil to flow off, the section being prevented from floating off by any simple contrivance—a brush, the ladle or the finger.* Each slide is then placed in the tin box, end down, until the whole twenty-four are provided for. Meanwhile, those first mounted have had all the remaining clove oil drained away by gravity—no more remains than is necessary to prevent the specimen from drying. They are then laid in groups of six, side by side, and the necessary amount of balsam dropped on each. Then the cover glasses, which should be lying in corresponding order near at hand, are applied. The advantage of this routine is, first, that one movement is necessary where six would be necessary if each section was treated separately, as for example in dropping the Canada balsam, and in draining off the clove oil. In this way I have mounted thousands of sections of the isthmus of various human and animal brains. The tin trays were devised by my assistant Dr. Mollenhauer, in order to use the vessels which were pre

* The best of instruments when endowed with the *tactus eruditus*. Of course it is intended that the finger should rest in the slide, in contact with the edge of, but not on the specimen.

vously devoted to the draining procedure. The clove oil which formerly was removed by blotting paper, at the risk of leaving its fibres adherent to the specimen, is economized by the above routine. It is unnecessary to add that before tilting a slide upright, the section in it should be allowed to cleave to it, which it will do if the inclining is done gradually, or the section prevented from sliding by a camel's-hair brush.

In handling very large sections, the various transfers may be made on paper, or, better still, on a large perforated ladle with a raised edge. The fluid runs off through the perforations, which should be near the edge. After the section has reached the clove oil, the slide on which it is to be mounted is run under the section while it floats. The latter in sinking is directed so as to settle on it. Cautiously raising the slide the section retains its place, and the same procedure is gone through with as with smaller sections. The perforated tins used as ladles in this method have another advantage: where large sections overlie each other in staining fluid, they prevent each other from absorbing the dye properly. By placing them in the caged ladle they are uncovered, and stain properly in all parts, and a large number may be superimposed in such cages. In addition, if a precipitate forms, it is less apt to settle on the sections, being usually found at the deepest part of the vessel, with which later they are not in contact.

[*To be Continued.*]

Note on a Form of Post-Neuralgic Encephalotropic or Cerebrasthenic Insanity.

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

DURING the year 1884 there came under the writer's personal observation two cases of this character, possessing features of such interest and instruction as to entitle them to be placed on record. Cases of this kind have heretofore occurred in the writer's experience, but he has not viewed them in the same light as now, or differentiated them from those not infrequent forms of mental aberration which are seen concomitantly with that general neuratrophia which reveals itself in synchronous neuralgia and insanity; the general break down of the brain and certain nerve centers being simultaneous phenomena; the organic cause of the insanity being also the cause of the neuralgia, especially when the neuralgia is the active manifestation of a latent hereditary family neurosis, which has previously appeared in similar or allied neuropathic forms. Neither Anstie, nor any other authority, has recorded these cases. They add another confirmatory fact, to the point so often insisted upon by practical and distinguished alienists, that insanity itself is quite as often a symptomatic expression of cerebral exhaustion as of overstimulation, of general cerebral anæmia as of cerebral hyperæmia.

In the cases we here record, the cure of the precedent neuralgia in one case and the marked amelioration of the symptoms in the other, seem to have furnished the exciting cause precipitating the mental sequence; and in this regard they appear unique in the records of psychiatry, though, probably, more apparently than really so, since such an exciting cause of insanity, as the sudden cessation of an influence so realistic and

forcibly diverting to the mind, as neuralgic pain, is not unreasonable from what we know, clinically, of the nature of insanity and its prodromal conditions; the tendency to self-introversion, so universal in the beginning of mental derangement, being constantly interfered with by the oft recurring pain and the repeatedly induced vascular cerebral excitations, especially when the neural pain implicates the seventh pair of nerves, as it did in one of our cases in the characteristic convulsive *tic doulereaux*, serving to postpone and, for the time, to prevent that degree of failure of cerebral cell nutrition and consequent exhaustion which makes mental derangement a possibility when no organic brain degeneration exists. In very many cases of prolonged neuralgia, mental derangement, as a sequel, is doubtless usually averted by the prolonged and recuperating sleep which follows cessation of the overtaxing seige and anodynes employed for the relief of the neuralgia, but it is possible for the molecular arrangements of the brain to have become so disturbed by the prolonged neuralgic seige or the conditions which have caused the neuralgia, as to make insomnia, for a time, a resistless feature, when its often inseparable ally, insanity, follows.

On the 3rd of June, 1884, there came under treatment from Illinois, a married lady, aged about forty, suffering with trifacial neuralgia of nine years' duration. She had been under gynecological treatment most of this time in St. Louis, New York and Philadelphia, upon the erroneous hypothesis that the trouble was a reflected uterine irritation. A vaginal examination, made with her family physician, revealed no uterine lesion. She had previously had some slight uterine catarrh, some insignificant flexion and some abrasion of the uterine neck, but all had disappeared at the time when she came under the writer's observation, and she had probably never had more local trouble than might have reasonably coëxisted with the relaxed and exhausted state of her general health, from the combined causes of pain and the neural mal-nutrition, which had caused the persistent and resistant neuralgia.

Her husband told me that the repeated local treatments and examinations, to which she had been subjected, had been a severe moral and mental shock to her, and under the treatments she had grown steadily worse.

All branches of the seventh pair were implicated, and the convulsive paroxysms of pain would recur incessantly at the time we first saw her, causing now a flow of tears, and now a watery nasal discharge, passing from thence, as the galvanic current would cause its cessation there, to the supraorbital, thence to the infraorbital, thence to the posterior auricular and other capital branches. After being thus driven from one *puncta dolorosa* to another by galvanism, local etherizations, etc., and internal treatment daily, from the third of June to the last of July, the pain finally almost ceased to recur. Thirty days before this the opiates, to which she had become habituated, had all been withdrawn.

Between the first and the seventh of August symptoms of intellectual aberration, like those of acute delirious mania, set in and continued for some six weeks, but under a persistent plan of iron and arsenic, galvanism, and the chloral hydrate, when required at night, she recovered her mental equilibrium with the return of her physical strength, which had become much impaired. The neuralgia recurred in milder form at times, but was easily controlled by galvanism, in the hands of her home physicians, to whose care she had been re-committed.

On December 27th and 29th, Captain ——, received office treatment for hyperæmic vertigo. The next record of his treatment began January 2nd, 1883, and continued almost daily to February 28th, and at longer intervals to March 31st, when he was discharged apparently well.

During his illness, incidental troubles of other organs appeared, chiefly in weakening of the renal and hepatic functions. His bowels showed obstinate inclination to constipation and he became quite jaundiced in appearance.

Hard and active service in the Federal Navy, during the late American war, entailed a tendency to jaundice

and to other malarial sequellæ. He had "chills and fever" for six months while serving on the Yazoo river, some of them of severely congestive type, which laid the the foundation for his subsequent head trouble in paralysis of the cerebral vaso-motor system.

He is a man of large means and active and numerous business engagements, and on his recovery resumed business and continued it without much medical discretion. He came again under treatment in April and so continued, almost uninterruptedly "attending only to necessary business," through May and June, with an interval of comparative freedom from trouble during July, August and September, with a return to active treatment in September and October, a respite in November and December, 1883, and January, February and March, 1884, having seen me but twelve times during this interval.

In May he returned with no head symptoms, but a jaundiced skin and a malarial complication. These were promptly overcome by a calomel purge and ten-grain doses of quinine, *ter die*, but an intense left sciatica of non-periodic, though of characteristic neuralgic paroxysmal form, appeared.

The whole of the great sciatic with its branches were implicated, but the most excruciating and often recurring pain was at the point of emergence of the nerve from the cavity of the pelvis. The malaria was only a solitary factor in the development of this trouble, and was eliminated by the vigorous employment of adequate anti-malarial treatment kept up for ten days, after evidences of malarial trouble had disappeared.

The real determining cause was anxiety and broken rest, superadded to business demands on account of long continued illness in the gentleman's family, and the exciting or local determining cause was a lumbo-sacral strain and bruise caused by lifting and carrying the wife, after her convalescence. In partial confirmation of which may be mentioned the fact that an extensive sacral abscess was soon discovered, which extended to the sacrosciatic foramen.

The prompt lancing and evacuation of this abscess gave no relief to the neuralgia however. Its relief was finally accomplished, after four weeks, mainly by twice or thrice daily repeated and prolonged galvanizations, with a strong thirty-six cell descending galvanic current.

But with the relief came not cerebral rest, but restless insomnia and psychical agitation, resistive to galvanism, ether lotions and hypnotics. Treatment of this kind curtailed and modified, but did not, for any lengthened period of time, diminish the inordinate and irregular cerebral excitement. The usual course of those cases of exhaustive acute delirious mania, which are destined to recover, was run by this case (with daily intervals of chemically induced cerebral rest), for five weeks, convalescence being complete by the end of the seventh.

The condition of this patient at the time the psychical symptoms appeared was one of *neuratrophic or neurasthenic* typhoid, the family physician, a discriminating practitioner of large experience and good judgment, was at this stage associated with me in the management of the case, recognizing the typhoid character of the prostration; but there was an absence of the blood contamination evidences, intestinal complications, and temperature peculiarities, of true typhoid. The case is another clinical confirmation of what the writer has termed, and he thinks with good evidence and reason, *neuratrophic* typhoid, in contradistinction from the *neuratrophia* and consequent *neurasthenia* of true typhoid fever, the latter being a signal of blood empoisonment, the former being a primary condition of the nervous system due to neural mal-assimilation and mal-nutrition.

As the purpose of this paper is only to record the clinical fact that psychical aberration may succeed to recovered neuralgia successfully managed, without even the excessive use of narcotics to give a basis for another conclusion, a fact not hitherto clinically recognized, this record may, with propriety, end here.

PROCEEDINGS

OF THE

THIRTY-NINTH ANNUAL MEETING OF THE ASSOCIATION OF MEDICAL SUPERINTEN- DENTS OF AMERICAN INSTITUTIONS FOR THE INSANE.

The Thirty-ninth Annual Meeting of the Association was called to order by the President, Dr. Pliny Earle, at 10 o'clock A. M., June 16th, 1885, at the United States Hotel, Saratoga, New York.

In the absence of the Secretary, Dr. C. F. MacDonald was appointed Secretary *pro tem*.

The reading of the minutes was postponed for the present.

Dr. Gray, from the Committee on Business, made a verbal report.

At this point the Secretary entered and took his place.

On motion of Dr. Gray the physicians of Saratoga were invited to attend the sessions of the Association.

The following members were present during the sessions of the Association:

- J. B. Andrews, M. D., Buffalo State Asylum for the Insane, Buffalo, New York.
- J. P. Bancroft, M. D., Concord, New Hampshire.
- J. W. Barstow, M. D., Sanford Hall, Flushing, New York.
- W. J. Bland, M. D., Hospital for the Insane, Weston, West Virginia.
- J. E. Bowers, M. D., Hospital for the Insane, Rochester, Minnesota.
- J. P. Brown, M. D., Taunton Lunatic Hospital, Taunton, Massachusetts.
- P. Bryce, M. D., Hospital for the Insane, Tuscaloosa, Alabama.
- H. A. Buttolph, M. D., Short Hills, Essex Co., New Jersey.
- J. H. Callender, M. D., Hospital for the Insane, Nashville, Tennessee.
- John B. Chapin, M. D., Pennsylvania Hospital for the Insane, Philadelphia, Pennsylvania.
- R. C. Chenault, M. D., Eastern Lunatic Asylum, Lexington, Kentucky.
- Walter Channing, M. D., Brookline, Massachusetts.
- Daniel Clark, M. D., Asylum for the Insane, Toronto, Ontario.

- Edward Cowles, M. D., McLean Asylum, Somerville, Massachusetts.
 John Curwen, M. D., State Hospital for the Insane, Warren, Pennsylvania.
 A. N. Denton, M. D., Hospital for the Insane, Austin, Texas.
 Joseph Draper, M. D., Asylum for the Insane, Brattleboro, Vermont.
 Pliny Earle, M. D., Northampton Lunatic Hospital, Northampton, Massachusetts.
 O. Everts, M. D., Cincinnati Sanitarium, College Hill, Ohio.
 A. M. Fauntleroy, M. D., Western Lunatic Asylum, Staunton, Virginia.
 C. M. Finch, M. D., Asylum for the Insane, Columbus, Ohio.
 Theo. W. Fisher, M. D., Boston Lunatic Hospital, Boston, Massachusetts.
 T. M. Franklin, M. D., New York City Lunatic Asylum, Blackwell's Island.
 J. Z. Gerhard, M. D., Pennsylvania State Lunatic Hospital, Harrisburg, Pennsylvania.
 H. A. Gilman, M. D., Hospital for the Insane, Mt. Pleasant, Iowa.
 W. B. Goldsmith, M. D., Danvers Lunatic Hospital, Danvers, Massachusetts.
 John P. Gray, M. D., State Lunatic Asylum, Utica, New York.
 W. B. Hallock, M. D., Cromwell Hall, Cromwell, Connecticut.
 G. H. Hill, M. D., Hospital for the Insane, Independence, Iowa.
 Edwin A. Kilbourne, M. D., Northern Illinois Hospital for the Insane, Elgin, Illinois.
 C. W. King, M. D., Asylum for the Insane, Dayton, Ohio.
 J. D. Lomax, M. D., Marshall Infirmary, Troy, New York.
 S. B. Lyon, M. D., Assistant Physician, Government Hospital for the Insane, Washington, D. C.
 Carlos F. MacDonald, M. D., State Lunatic Asylum, Auburn, New York.
 H. P. Mathewson, M. D., Hospital for the Insane, Lincoln, Nebraska.
 C. A. Miller, M. D., Longview Asylum, Carthage, Ohio.
 T. J. Mitchell, M. D., Lunatic Asylum, Jackson, Mississippi.
 James D. Munson, M. D., Assistant Physician, Eastern Michigan Asylum, Pontiac, Michigan.
 P. L. Murphy, M. D., Lunatic Asylum, Morganton, North Carolina.
 C. H. Nichols, M. D., Bloomingdale Asylum, New York City.
 Geo. C. Palmer, M. D., Asylum for the Insane, Kalamazoo, Michigan.
 H. K. Pusey, M. D., Central Lunatic Asylum, Anchorage, Kentucky.
 C. A. Rice, M. D., Lunatic Asylum, Meridian, Mississippi.
 A. B. Richardson, M. D., Asylum for the Insane, Athens, Ohio.
 S. H. Rogers, M. D., Assistant Physician, Insane Asylum, Raleigh, North Carolina.
 F. E. Roy, M. D., Lunatic Asylum, Quebec, Canada.
 Ira Russell, M. D., Winchendon Highlands, Massachusetts.
 B. T. Sanborn, M. D., Hospital for the Insane, Augusta, Maine.
 John W. Sawyer, M. D., Butler Hospital, Providence, Rhode Island.
 S. S. Schultz, M. D., State Hospital for the Insane, Danville, Pennsylvania.
 A. M. Shew, M. D., Hospital for the Insane, Middletown, Connecticut.
 Henry P. Stearns, M. D., Retreat for the Insane, Hartford, Connecticut.
 J. T. Steeves, M. D., Provincial Lunatic Asylum, St. John, New Brunswick.
 W. H. Stokes, M. D., Mount Hope Retreat, Baltimore, Maryland.
 J. Strong, M. D., Asylum for the Insane, Cleveland, Ohio.

- Selden H. Talcott, M. D., State Homœopathic Asylum for the Insane, Middletown, New York.
- A. J. Thomas, M. D., Assistant Physician, Hospital for the Insane, Indianapolis, Indiana.
- H. Wardner, M. D., Southern Illinois Hospital for the Insane, Anna, Illinois.
- J. W. Waughop, M. D., Hospital for the Insane, Fort Steilacoom, Washington Territory.
- P. M. Wise, M. D., Willard Asylum for the Insane, Willard, New York.

Dr. Shew introduced to the Association Rev. Samuel G. Willard, Secretary of the Board of Trustees of the Connecticut Hospital for the Insane.

Dr. Palmer introduced to the Association Dr. Foster Pratt, Trustee of the Asylum for the Insane at Kalamazoo, and Mr. W. G. Vinton of Detroit, President of the Board of Trustees of the Eastern Michigan Asylum.

All of these gentlemen were invited to take seats with the Association.

On motion of Dr. Gray, Dr. Foster Pratt was elected an Honorary Member of the Association.

On motion of Dr. C. F. MacDonald, Dr. Stephen Smith, Commissioner of Lunacy of New York, was elected an Honorary member of the Association.

The Secretary read a letter from Dr. Hurd, regretting his inability to attend this meeting and stating that Dr. James D. Munson would represent the Institution.

The Secretary also read the following letter received by the President, Dr. Earle, from Dr. D. Hack Tuke:

LYNDON LODGE, HANWELL W., June 2, 1885.

DEAR MR. PRESIDENT:—A distinguished member of your Association, in writing to me the other day, expresses a hope that I and some other English alienists may be present at your meeting. I can only speak for myself in saying that, had it been possible, it would have afforded me the greatest pleasure to comply with the kind wish so expressed. I cannot, however, do less than express on paper what, had I been present, I should have endeavored (however inadequately) to convey to my American friends my sense of their most kind and hospitable welcome during my visit last year to the Hospitals for the Insane in the United States. Some may have read my impressions of what I saw in your country, and will have recognized how much I appreciated many of the features of those institutions, and the services rendered to humanity by the medical superintendents of asylums. Allow me to repeat here my

good wishes for the success of the endeavors made to advance the interests of the insane, and to assure you that I shall always retain a grateful sense of the kindness of my American confrères. Wishing you a very successful meeting, I remain, Yours, very truly,

D. HACK TUKE.

The Secretary then read a letter from the Board of Trustees of Eastern Kentucky Lunatic Asylum, inviting the Association to meet in Lexington, Kentucky, which was referred to the Committee on Time and Place of Next Meeting.

DR. KILBOURNE: Mr. President—If this is the proper time I would like to extend a very cordial invitation to this Association to hold its next annual meeting at the city of Chicago. Elgin is distant but thirty-five miles from Chicago, about an hour's run; and Kankakee only a little farther removed. I hope the Association will look favorably upon this request, and in advance of their action, I promise the members, should their choice be Chicago, that we will give them a cordial western welcome. I move, sir, that this invitation be referred to the appropriate committee for consideration and report.

The motion was adopted.

On motion of Dr. Schultz, the courtesies of the Association were extended to Dr. A. J. Ourt, Secretary of the Committee on Lunacy of Pennsylvania.

The Secretary then read the minutes of the last meeting, which were adopted.

The Secretary read letters from Drs. Carriel and Godding expressing their regret that they could not attend this meeting.

The President announced the following Standing Committees:

ON NOMINATIONS: Drs. Gray, Schultz and Bryce.

ON TIME AND PLACE OF NEXT MEETING: Drs. Draper, Mitchell and Kilbourne.

TO AUDIT THE ACCOUNTS OF THE TREASURER: Drs. Clark, Franklin and Chenault.

ON RESOLUTIONS: Drs. Chapin, Fauntleroy and Shew.

On motion, a recess was taken for fifteen minutes.

On re-assembling, the Secretary read the following report:

The Committee on Business respectfully report that the sessions of

Tuesday and Wednesday be devoted to the reading of papers. On Thursday, an excursion to Ticonderoga and down Lake George; in the evening, hold a meeting for business. On Friday, that the sessions be devoted to the reading of papers.

On motion, the report was adopted.

The Committee on Nominations made the following report: They would recommend for President, Dr. O. Everts; for Vice President, Dr. H. A. Buttolph; and for Secretary, Dr. John Curwen.

On motion of Dr. Nichols, it was

Resolved, That the report of the Committee be accepted, and that its acceptance carry with it the nomination just made.

DR. KILBOURNE: Inasmuch as I preferred the request to have the Association hold its next annual meeting at Chicago, and Dr. Chenault on behalf of his Board of Trustees has preferred a similar request for the Association to go south to Lexington, I think I could not do less in courtesy to him than to ask that my name be withdrawn from the Committee on Time and Place of next meeting, and some disinterested member appointed in my place. I now, therefore, ask that this action be taken by the Association.

DR. EARLE: Dr. Kilbourne requests to be excused from the committee named, and gives a very proper reason for it. I will therefore appoint Dr. Catlett, of Missouri, on the committee in Dr. Kilbourne's place.

The President then read his address, at the conclusion of which he introduced to the Association, Dr. O. Everts, President-Elect, who said:

Gentlemen, I have but a word of thanks. To be appointed to this honorable position is more than I have aspired to. To be worthy of it is as high as any of us can aspire. I thank you sincerely for the honor conferred.

On motion, the Association adjourned to 3 o'clock P. M.

The Association was called to order at 3:30 P. M., by the President, Dr. Everts.

Dr. Curwen stated that he had a copy of the notices of the original thirteen members with photographs of each member, and if any one wished a copy he would please notify him of his wish.

Dr. Curwen then read the biographical memoir of Dr. Kirkbride, prepared by direction of the Association.

DR. EVERTS: The next business in order will be the report of the Committee of Necrology.

DR. RICHARDSON: Mr. President—I am not chairman of the committee, but I was informed about three weeks ago by Dr. Grissom, that he would not be present, and that I would be expected to make a report for the committee. Dr. Cowles is on the committee with me, and in the length of time previous to my departure from home, I was not able to consult with him. From what I can gather from the members, there was only one death during the year, Dr. Reed of Dixmont. If I had had the time to consult on the subject, I would have pursued a different course, and had some one more intimate with Dr. Reed, write a memoir of him. I secured what I could from the family, and have written a short memorial. But I would make this request: that members of the Association who knew him better than myself, and who have been connected with the Association for many years, supplement this by further remarks, particularly those long acquainted with his relations to the Association, of which I comparatively know nothing.

Dr. Richardson then read the memoir:

Joseph Allison Reed, M. D., of Dixmont, Allegheny County, Penn., was born in Washington, Penn., December 31st, 1823. He died November 6th, 1884. Dr. Reed's grand-parents were among the early settlers of Pennsylvania. His father, Mr. James Reed, of Washington, Penn., was of Scotch descent, a silversmith by occupation, and developed a remarkable talent for mechanics.

Dr. Reed was the third son of a family of ten children. In 1849, his father removed to Pittsburgh, where he resided till his death in 1878. He was much beloved for his piety and many estimable qualities, and gave to his children careful and valuable training, the results of which are seen in the high character and noble purpose of the subject of this sketch.

At the early age of thirteen Dr. Reed entered Washington College, from which he graduated with the degree of Bachelor of Arts at the age of nineteen, receiving the degree of Master of Arts, in course, three years later. He was a diligent student. In his twentieth year he commenced the study of medicine, under the tutorship of Dr. Julius Le Moynes, of Washington, Penn. He attended a course of lectures at the University of Pennsylvania, Philadelphia, and a three years' course at the Jefferson Medical College, from which he graduated in the year 1847, being then twenty-four years of age. He removed to Allegheny City the same year and commenced the practice of his favorite profession, which he pursued in that city for ten years. He speedily developed an excellent reputation in the treatment of nervous and mental diseases, for which he appears to have had an especial taste from the commencement of his professional career. During his residence in Allegheny City he was, for three years, physician to the Western Pennsylvania House of Refuge, and for two years, visiting physician to the Insane Department of the Western Pennsylvania Hospital, at Pittsburgh. Here the qualities which have characterized him through all the years of his connection with the insane became early prominent. His sympathetic nature was touched by the condition in which he found the unfortunate beings confined in that department, and he set to work with his usual energy to assist them.

His interest, and the success following it, caused him to be elected by the Board of Managers, in 1857, to take charge of the institution. He found the hospital with but twenty-three inmates and eight thousand dollars in debt. He induced a number of leading business men to take an interest in the institution; secured from them liberal contributions, and was enabled within a short time to put it on a sound financial footing.

He was also one of the leading spirits in the movement to induce the legislature to build another hospital, especially for the insane, and on an improved basis. The result of his efforts in this direction was the opening, in 1862, of the Hospital for the Insane at Dixmont. He was placed in charge and remained as its worthy head until death. This hospital is his monument, and its success and high standing are the evidence of his assiduous care and thorough attention to every feature of its welfare.

Dr. Reed was a member of the American Medical Association, the Association of Medical Superintendents of American Institutions for the Insane, the American Academy of Medicine, and the State and County Medical Societies.

He was consulted by the State authorities on all subjects relating to the care of the insane; was a member of the commission to build the State Hospital for the Insane at Danville, and was appointed by Governor Hoyt, a commissioner to investigate and report upon the laws of the State relating to the insane and assisted in framing the present lunacy law. He was the delegate from the State to the National Conference of Charities and Correction, held at Madison, Wisconsin, in 1882.

He was a member of the Presbyterian Church, presided at the Board of Deacons of the church to which he belonged and an earnest and conscientious Christian. His life was an example of the Christian virtues. His respect for the Sabbath and his implicit confidence in the wisdom of an All-Wise Providence were characteristics of his religious experience. These were impressed upon all about him by the sincerity with which he lived them. For many years he conducted religious services in the chapel of the institution, until authorized by the Legislature to employ a minister, and was a firm believer in the value of religious instruction in the care of the insane.

Dr. Reed was married October 3, 1848, to Miss Eliza J. Hay, of Troy, New York, who died August 11, 1858, leaving two children, James H. Reed and Mrs. Clara E. Hengst. On November 13, 1860, he was again married to Miss Mary, F. Fahnestock, daughter of Dr. W. M. Fahnestock of Bordentown, New Jersey, who survives him with four children: Sarah F., Fanny H., Joseph Allison and William F. Reed. In his domestic relations he was a faithful exponent of the principles which controlled him in all things. Kind and loving, indulgent as a father, and faithful to all trusts his situation imposed. His chief characteristics were patient devotion and indomitable energy. He was controlled by high and unswerving principles, and let nothing influence him to step aside from the path of duty which he had marked out for himself. He had a wonderful executive capacity, and was possessed of a peculiarly fascinating presence, by which all who met him were drawn toward him irresistibly. In his administration of the trust imposed upon him, he was particularly noted

for his faithful attention to details and the zeal he displayed in looking after the interests of his patients. Helplessness and misfortune always excited his warmest sympathy, and he was untiring and wholly unselfish in his efforts to relieve the unfortunate objects of his care. He was devoted, body and mind, to the interests of his helpless wards and his institution was a model of hospital administration. His sympathetic nature gave him a wonderful control over the insane, for they recognized in him a faithful and kind protector and friend.

He did not, however, escape the shafts of unfeeling and unjust public criticism. Yet, though sensitive to its stings, he did not waver in his course, and as a consequence of his faithful adherence to duty, stands to-day among the first in the land in our chosen specialty. Amid all the trials and perplexities of his responsible position he had an abiding faith in the rulings of his Divine Guide and a quiet confidence in the justice of his course. Could the unthinking public but realize the anguish of spirit that their careless and rash expressions, founded upon the most uncertain and unworthy testimony, caused in the helpless object of their malignancy, we would be spared many a heart-ache we must now endure.

Uncomplaining and with quiet devotion Dr. Reed pursued his way, and has left behind him an enduring fame in the noble institution of which he was the father and constant protector; and in the strong and faithful love of his grateful patients, the evidences of which constantly cheered him on his way, and can to-day be found in almost every hamlet in Western Pennsylvania.

His faith was strong to the last, and in the fullness of a ripe experience and with the calm confidence of a work well done, he fell asleep in the quiet repose of the Saint to awaken in the Great Hereafter to the enjoyment of a rich reward.

On motion of Dr. Nichols, it was

Resolved, That the memoirs which have been read be published, and the fact, that they have been read, be entered on the minutes.

On motion of Dr. Chapin, Mr. G. W. Jones and Judge Mason, Trustees of the Willard Asylum for the Insane, were invited to take seats with the Association.

On motion of Dr. Nichols, it was

Resolved, That it is the judgment, the rule, and the fixed principle of the Association, that the opinions in papers or reports, read by members, shall not be considered as deliverances of the Association unless formally endorsed by a vote of the Association.

Dr. D. Clark, of Ontario, read a report on "The Progress in Cerebro-Spinal Pathology for the last Forty Years," prepared for the meeting of 1884, but which he was prevented from presenting. The President then called for the report of the Committee on Therapeutics of Insanity and New Remedies.

DR. ANDREWS: Mr. President and Gentlemen—I have a short paper that was presented by Dr. Hurd, as a member of the committee. He was unable to be present and send it to me to be read. I will preface my own paper with this short paper of the Doctor's. I suppose most of the members of the Association know that Dr. Hurd spent a short time in California during the last winter for his health, and while there his attention was directed to this plant.

After reading the paper of Dr. Hurd's, on "The Peculiar Properties of the Loco or California Rattle-weed," Dr. Andrews read the report of the Committee on Therapeutics of Insanity and New Remedies.

DR. GRAY: I would like to say a word in regard to the therapeutic use of tea, and the extract made by Dr. Squibb. Dr. Andrews has referred to the administration of a strong infusion of tea prescribed by me in certain cases when he was an assistant at Utica. I have given it to children in conditions of partial collapse after exhaustion, the result of diarrhœa and in semi-coma from over-heating, where the action of the heart was feeble, and to adults after prostration by the heat of the sun. I have found nothing more useful in such cases than tea as strong as it could be made, giving two or three teaspoonfuls every hour or more if required. I have given it also to old people with weak heart in combination with a little whiskey or brandy. Either added to the infusion will preserve it for a few days while being taken, though it is quite as well to make it fresh each day. Some sixteen years ago I tried also very strong coffee for the same conditions, one case being that of a young man who had almost constant headache from meningeal hyperæmia, following the sunstroke, and whose heart was irregular and feeble in action. I had a druggist in the city procure the very best quality of coffee, carefully browned and ground very fine, and the infusion made by filtering until he had as strong an infusion of coffee as could be obtained. I used this in combination with elixir of gentian, giving ergotin night and morning, and with good results. I have used it since frequently for a similar class of cases, especially with disturbed and feeble heart. I have administered an infusion of coffee in connection with elixir of cinchona, or combined with whiskey, with great benefit. I took the infusion of tea myself experimentally at the first time spoken of in very large doses.

In respect to the camellia, some time ago, when it first came out, I procured some of Dr. Squibb's extract, and took a teaspoonful at a dose in a little cream about ten in the morning and at two and five in the afternoon. After continuing this three days I took two teaspoonfuls one day at the same hours, and afterwards three at a dose. I found the first day that there was no diminution in the number of respirations, but that they were fuller and the pulse was lowered in frequency, but increased in fullness. It gave me no sensation of discomfort in the head, and was rather stimulating. It induced slight perspiration the first day, but did not then or afterwards increase or diminish the action of the kidneys. On the second and third days it produced greater perspiration, and at times a sort of bounding of

the pulse and reduced its frequency. The fourth day, after three teaspoonfuls were taken at a time, profuse perspiration was induced with a sense of lightness of the head and a little uncomfortable feeling when sitting up. I was not drowsy or any thing of that kind, but, on the contrary, felt stimulation, but also a little swaying when standing or walking, and I did not pursue further the investigation. At no time did I take beyond three teaspoonfuls of Squibb's extract at a dose. At one time the pulse fell to 56. It will be observed I kept the use of the tea continuously through the day, and the pulse did not resume its normal standard, which with me is from 69 to 74, until 9 or 10 o'clock in the evening. When taking the large doses the breathing was slower, but the inspirations were full. It produced neither headache nor nausea. A week afterwards I tried a pitcher of strong tea taken in large doses in the afternoon and evening, aiming to get as much as would equal a teaspoonful dose of the extract each time. Whether I got that much or not, I certainly did not get the same effects as from the extract; simply the stimulating effect of tea with a little fullness of the head and, after going to bed, profuse perspiration.

DR. NICHOLS: Did you sleep on the strong tea?

DR. GRAY: Yes; I went very quickly to sleep on going to bed. My idea was that it would keep me awake, but it did not. I not only went to sleep, but slept very soundly.

DR. CHAPIN: Referring to that portion of Dr. Andrew's report which relates his experience in the use of hyoscine, I think we are under obligations to him for bringing to our notice this new remedy and for the care with which he has made his observations. All experimental results fairly obtained have a great value. For several weeks I have had an opportunity of observing somewhat carefully the effects of hyoscine, and am able to confirm, to a great extent, the results with its use which he has reported. Some of the unsatisfactory results which have been noticed, not only in the use of hyoscine, but hyoscyamine, may have been owing to the character of the leaves from which the alkaloids are obtained, as it is well known that the physiological effects of the tincture of hyoscyamous leaves differ according to the habit of the plant. Two classes of patients have taken the drug—one made up of maniacal, noisy, excitable persons, with more or less motor activity, and the other, melancholic patients including those who were passive, suffering from nervous prostration and insomnia. The doses in the first class have rarely exceeded 1-100 of a grain hypodermically, and in the later 1-240 of a grain by the mouth. These doses it will be observed are not as large as Dr. Andrews has used, and I would not be disposed to prescribe a fiftieth of a grain, without trying a smaller dose first, and then only, when great motor excitement was present. The effect is to depress the pulse, lower the respiration, reduce the muscular activity, and when sleep is produced it continues for eight or nine hours. I have observed its administration in insomniac patients whose strength was impaired, in doses of 1-240 of a grain by mouth, with excellent results. There has been no unpleasant complication, no dysuria, headache or nausea, attending its administration as stated.

In comparing the effects of hyoscine and hyoscyamine, it has been observed that patients do not acquire a toleration of the former as readily

as the latter, and in proper cases the same dose may be relied upon for a longer time without an increase.

I cannot but hope that in this new remedy, the hydro-bromate of hyoscine (Merc) we may have a valuable medicine for the relief of those insomniac conditions we have so often to deal with, as well as in the treatment of those maniacal cases which come to our asylums, and as such I add my commendation of its value.

An invitation was received from the New York Pharmaceutical Association to attend their sessions, which was referred to the Committee on Business.

A note was also received from Miss Dix tendering her kindest regards to the Association.

On motion the Association adjourned to meet at 10 A. M. Wednesday.

The Association was called to order on Wednesday, June 17th, at 10 A. M., by the President.

Dr. Earle, from the committee appointed last year in reference to the admission of assistant physicians as members of the Association, made the following report:

The committee to which was referred the question of opening the doors of membership of the Association to assistant physicians in the institutions for the insane, have given the subject their careful and thoughtful consideration and hereby respectfully present their report.

This Association was formed in the comparative infancy of the great enterprise for the amelioration of the insane in the United States, and was called into existence by one of the shortest and simplest organic laws that ever gave vitality to the specific aims, actions and ends of a body of men united in a common and worthy purpose. Both, psychology and psychiatry, not only among the people at large, but to the profession outside of the institutions, were matters of almost universal ignorance. Even in the specialty there was, if we are not mistaken, but one physician who had had an experience of ten years at the head of a public institution, and but five others whose similar experience exceeded five years. That of a majority of the superintendents ranged from two to four years. Of the eleven original members of the Association who were at the head of public institutions, the aggregate time of service in that capacity was about fifty-three years, or an average of less than five years each.

But small as was the united term of practical work of the medical

superintendents of the hospitals, still those superintendents were the possessors of the greater part of the knowledge, by Americans, of the care and treatment of the insane, and hence, as well as from their position and their prospects of continuing in the specialty, they and they alone were the persons especially conspicuous as the proper candidates for membership of a society for the promotion of the cause. Prior to that time there were few assistant physicians and their experience was very limited. The position had previously been sought less frequently than of late years with an intention of continuing long in the specialty; and of all the physicians, who then occupied that position, only two, so far as we can learn, were subsequently promoted to the office of superintendent.

It is unnecessary for us to attempt a detailed exposition of the wonderful changes in the psychopathic enterprise during the existence of the Association and minutely to contrast the circumstances of the present with those of the past of forty years ago. You are already sufficiently familiar with the subject in general. In order, however, to bring it to your attention in perhaps a new and certainly a striking aspect, as well as to adduce one of the strongest arguments in favor of the opinion to which your committee has arrived, permit us to present you with a few facts.

A little more than two weeks ago, letters were addressed to the superintendents of nearly one hundred public institutions in the United States and the British Provinces, requesting the names of their assistant physicians, and the time of service of each of them respectively. Notwithstanding the brevity of the intervening time, replies have been received from eighty-four of them and the results of the inquiry are as follow:

In these eighty-four institutions no less than two hundred and nine assistant physicians are employed, and their terms of service are indicated in the subjoined schedule. Less than one year in thirty-five instances; from one to two years in thirty-eight; from two to three years in twenty-eight; from three to four years in twenty; from four to five years in fifteen; from five to six years in fourteen; from six to seven years in sixteen; from seven to eight years in thirteen; from eight to nine years in seven; from nine to ten years in four; from ten to eleven years in five; from eleven to twelve years in three; from fourteen to fifteen years in one; from fifteen to sixteen years in three; from sixteen to seventeen years in one; from nineteen to twenty years in one; from twenty to twenty-one years in two; twenty-six years in one; twenty-eight years in one, and thirty-two years in one. Should the officer last mentioned retain his position but two years longer, his term of service in the specialty will exceed the united terms, at the origin of the Association, of Drs. Bell, Awl, Butler, Brigham, Kirkbride, Ray, Galt, Stedman and Earle; nine of the eleven original members who were at the heads of public institutions. These two hundred and nine assistants have performed their duties as such officers during an aggregate period of nine hundred and eighteen years or an average of four years, four months and twenty-one days each. Such then, so far as relates to personal experience, are the claims of this large number of physicians to membership in this Association, and thus to be co-workers with us here as they are at home. Aside from this are many and diverse considerations which enlarge and strengthen that claim.

Many of the assistants have come from the medical schools at a recent or comparatively recent date, bringing with them the advantages of the most advanced knowledge of the profession and not a few have been trained in the general hospitals before their entrance into the specialty. As the boy is father to the man, so the assistant is father to the future superintendent, and, in the time to come still more than in the past, the offices of physician-in-chief will be filled by men selected from the ranks of the assistants, because, primarily of their superior qualifications for the most responsible and important office. When we regard, on the one hand, the actual members of the Association, and find, as we do at all times among them, a number, greater or less, whose practical knowledge of the specialty does not extend over a period of two years, and, on the other, a body of more than seventy assistant physicians whose similar knowledge embraces the acquisitions of from five to thirty-two years, it is with no disparagement of either party that we are led to ask if there is not a very easily perceptible trace of incongruity and inconsistency in the aspect.

It is a well-known fact that discoveries in science, improvements in art, and striking achievement in many of the spheres of human activity have been very largely made in comparatively early manhood; the period of enthusiasm and of ambition, when toil is a pleasure and investigation and research, even if they are devoid of more important fruitage, furnish their own reward. Shall we then, if sincere in our desire for the attainment of the ends which ostensibly we seek, still continue to keep a bolted door against this large mass of activity, energy and intellectual vigor, which stands in patient expectance without, awaiting that bidding to our companionship, the results of which will be beneficial, not alone to its possessors, but to us as well, and ultimately, as we have abundant reason to believe, to the beneficent enterprise in which we are engaged?

Your committee offer the following as an addition to the organic law of the Association:

Five years continuous service as assistant medical officer in one or more of the institutions, the superintendents of which are members of this Association, shall entitle said assistant to membership so long as he shall continue in the specialty.

PLINY EARLE.

ORPHEUS EVERTS.

JOHN CURWEN.

DR. GILMAN: Mr. President—I have been very much interested in the report submitted by Dr. Earle, and confess that I am surprised at the large number of assistant physicians who have been in continuous service for five years or more. It seems to me that there should be but one voice in this matter, and that a cordial invitation be extended to these assistant physicians to join us in the work of this Association.

For nearly twenty years I was engaged as an assistant physician, commencing in hospital work as an attendant with my friend Dr. Bancroft, of Concord, New Hampshire, and after graduation, for sixteen years with Drs. McFarland and Carriell, of Jacksonville, Illinois; and I confess that during the last fifteen years in that service, I felt the need of meeting you gentlemen for the purpose of exchanging views and obtaining that benefit

which is to be desired from such a meeting. I remember that at one time the question was agitated of forming an association of assistants, as we were debarred from becoming members of this Association and participating in its work. I felt that something of that kind would be decidedly beneficial in carrying forward our part of the work. But this covers the ground, and I feel the time has come when we certainly ought to invite these men to become a part of us. Besides what I have said, they are fresh from the medical schools, and with the vigor of young manhood are entering into that scientific research which we so much need.

There is another point in this connection, which seems to me, is patent to us, and that is the selection, from assistants, of superintendents for new institutions throughout the country. By admitting to this Association the assistant physicians as proposed, they are brought to the front, and make up a list of men who have had actual experience in the work, from whom may be selected proper candidates for such positions; thus helping to avoid what we know to have happened in the past—many disastrous failures in institutions from the selecting of material without any actual experience in the work. I feel that this is an important matter, and that in the presentation of these names material will be selected to be placed in institutions, to carry forward the work, as they may be constructed from time to time, hereafter.

On motion of Drs. Denton and Nichols, the report was unanimously adopted.

The President next announced a paper by Dr. Buttolph.

DR. BUTTOLPH: Mr. President and Members of the Association—I desire, by way of introduction, to express regret that during the last few years circumstances have been unfavorable to my attending the meetings of the Association, also, to express my pleasure that I am able to be present on this occasion.

Mr. President—The subject of the paper I have to present is the Physiology of the Brain and its Relations in Health and Disease to the Faculties of the Mind.

Before commencing the reading, I have to apologize for the great length of my paper. The subject I have chosen, in its different aspects, embraces so much ground, that it was impossible to do less. The paper was prepared very hastily and from the course of the discussion adopted, is composed, to a considerable extent, of selected material.

I will, also, make allusion to one other matter, which is, that for some time past, I have been troubled with hoarseness, from a slight chronic affection of the vocal chords, but which sometimes renders it impossible for me to continue speaking. For this I must beg your indulgence.

During the reading of his address, Dr. Buttolph said at one place:

It is understood that the brain is developed from all parts together, and that there is no practical mystery, in fact, of its development in the

way explained by Spurzheim. The reason why one man's brain is developed, relatively, long or short (measured from a central point, that is, the Medulla Oblongata) upward, forward and backward, we cannot explain.

This accounts, however, largely for the different mental characters of individuals of the same family, as well as of minds in general; giving rise to practical genius in various directions, according to the greater or less development of a region or part of the brain, in a given case. It will also be seen that the differences in mental manifestation in individuals, can be better accounted for on the principles of this system than by those of any other.

I am now to speak of the bearing of the physiology, or the healthy state of the brain, on mental philosophy, one branch of my subject.

At the close of his address, Dr. Buttolph said :

I desire to say, gentlemen, before resuming my seat, that in another and the closing part of my paper, I have prepared biographical sketches of Gall and Spurzheim, the founders of the system set forth, which I consider as highly important, and which I desire to present to the Association, and all the more, because many of the facts and incidents to be mentioned relate to a past age and century even, and therefore, are not accessible to all.

DR. GRAY: I desire, Mr. President, at this point, to make some remarks in reference to the report of the committee on the expediency of the admission of assistant physicians, as fellows or members of this Association. I was in favor of the measure, but not of the resolution, but voted for it with the intention of moving a reconsideration. I intended to move as a substitute for the resolution, that all assistant physicians of regularly constituted institutions for the insane, be considered members of the Association while in service. The question has occurred to me also, whether the committee by giving five years as a period, at the end of which assistant physicians could be received into membership, might not have some effect in preventing assistant physicians from coming as representatives of institutions, who had not been five years in service. I have thought they might feel some delicacy about it. The intention of the report and the resolution was not, I suppose, to have any such influence on the rule of representation, which has hitherto been adopted, but rather to leave that practice undisturbed; it has been the custom for any institution to send an assistant when the superintendent could not attend, whether he had been in the asylum one or twenty years; and any assistant thus delegated would be as acceptable a representative and member during the time, as one who was five years in the service, or the superintendent himself. As all the committee are here, I would like to know whether such is the full understanding.

DR. EARLE: So far as I am concerned, Dr. Gray's interpretation is correct. Authority to send delegates still remains as before. It rests upon the institution. Whether, under the circumstances, it would be better to give expression to that fact is a matter to be thought of. It may be that the authorities of the institutions will suppose that, inasmuch

as the older assistants are members, the junior assistants might not be received as delegates. I am very glad that the doctor mentioned the matter, and it seems to me that it would be better to announce it, in some way, in the report of the proceedings.

DR. GRAY: If you will permit me, I would suggest that the committee, before any further action, ask to withdraw their report and amend or change their resolution to this proposed, and report back to the Association, if that is expedient.

DR. EVERTS: I do not see that anything is necessary. The practice of the Association will continue, just as it has been, and these gentlemen will not become members of the Association, until they signify a disposition to do so.

DR. GRAY: Still without some action or recognition they will feel some delicacy in taking part in the discussion, in view of the fact that the Association had fixed as the length of service before membership five years.

DR. EVERTS: When an assistant was delegated to come under the old rules, notice was given by the Secretary, that such was the rule. I do not think any assistant will become a member until he presents himself under this new order. I see no use in any motion, but still I have no objection.

DR. STEEVES: The action of the committee has suggested a question to my mind, whether the Association will change its name or not. It will not now be definitely an Association of Superintendents of Asylums, but Superintendents and Assistants. I would like to ask the Committee whether they contemplated any change? It seems to suggest such a question.

DR. EARLE: I am glad the gentleman has mentioned the subject. There was no conference between the members of the committee in regard to it. But, while drawing up the report, it struck me that, if this resolution was adopted, the name of the Association would no longer be correct. I generally endeavor to come to the point as soon as practicable, and consequently assert that, in my opinion, the name of the Association should be changed. I think it is the best policy to change it. I think that, unless the change be made, another society will spring up, with a more appropriate name, and this will be obliged to retain its present title. I think this should be a "Psychological Society," or a "Medico-psychological Society," that the title should be based upon the objects of the society, and not upon a name which simply signifies the official position of its members.

DR. GRAY: Mr. President—I would offer a resolution that the name of the Association shall hereafter be the Association of Medical Superintendents and Assistant Physicians of American Institutions for the Insane.

DR. CURWEN: Why not follow the English rule and make it the American Medico-Psychological Association.

DR. EARLE: I believe that the name of this Association should be the American Psychological Association.

DR. GRAY: There is such an association now.

DR. EARLE: There is the Neurological Association or Society in

New York, and there is the New England Psychological Society, and this Association should be for America what the New England Society is for New England. I think it would be a step in advance if this change should be made. Probably all of you know that the Association has been accused of being a close corporation. The name signifies as much. Under a different title that impression might be removed. The name itself is an unwieldy one. It is a long name. In order to use economy of words it is easier to speak of it as "the Association with a long name." I remember the history of the origin of the name very well. It was compounded in the chamber, at Jones' Hotel, and it took some time to make the compound satisfactory. It was written out, at first, in one shape, and I remember that Dr. Bell added one word which still remains in it. It was the word "American," suggested for the purpose of including the Canadian superintendents. I added the word "Medical," because Dr. Butler and I were not, technically, superintendents of the institutions with which we were connected. My title was "Resident Physician," but I was the principal medical officer. The institution was then under the administration of three officers, each independent of the other—the physician, the warden and the matron. The name was finally brought into a shape that was satisfactory so far as all these matters were concerned. It was truthful. I have nothing more to say, other than again to express my belief that it is the best policy of this Association to change its name.

DR. CHAPIN: If it is proposed to change the name of this Association, it is an important question for us to consider what its title shall be. It appears the composition of this body is about to be changed, but I am not in favor of a change in our name, if, by so doing, we are to surrender any of the traditions or associations which attach to our present title. It may be an easy matter to adapt a name to the newly established composition of this Association. It may be called the American Association of Physicians, or, Association of Physicians of American Institutions of the Insane.

DR. GRAY: Wouldn't you say medical officers?

DR. CHAPIN: I do not think it advisable to use two words where one may answer, as the physicians are medical officers. Neither do we desire to become exactly a psychological association as there are many questions coming before us that are not psychological. We ought not to limit the range of subjects. I would be glad to have the subject referred again to the committee for a report.

DR. CHANNING: It strikes me that the suggestion of Dr. Curwen is a very good one, that is, to call this Association the American Medico-Psychological Association, if that was exactly Dr. Curwen's suggestion. That is, to be sure, following the English precedent, and we certainly could not follow a better one. I do not think, Mr. President, that we should be limited to the discussion of psychological matter by adopting that name. We want a name covering the proceedings of the Association. The present name in the past has been the best; the question now is what will be the best one for the future. It strikes me, we could do no better than follow the example of the British Association, because, as Dr. Earle has said, if not adopted by this Association the chances are it

will be done somewhere else; it is a thing, I feel certain, as one of the members of this Society, and having seen outside societies, is going to come. We have an American Neurological Association and we have an New England Psychological Association, but we have no general society with the name "psychological" in it. I think the word "Medico" an important one, as it more exactly defines the scope of the Association. I would therefore move to amend Dr. Gray's resolution by declaring that the name of the society shall be "The American Medico-Psychological Association."

DR. BRYCE: The proposition to change the name of the Association, which has been so suddenly sprung upon us is a very important one, and should be considered with much care and deliberation. My present impressions are that no such change is either necessary or desirable. I have no objection to the formation of an American Psychological Society, but the functions of such a body would be entirely different from ours, and the name would be neither distinctive nor appropriate. We have a specific work to do, and our present name designates, perhaps better than any other that we could adopt, the true nature and extent of that work. Change that name to the American Psychological Society, as has been proposed, and you destroy the distinctive character of the Association.

I know it has been objected that we are at present a sort of close corporation, but that is inevitable in view of the specific character of the work we have in hand; and I have no hesitation in saying that much of our present influence, and the good we have done in the past, are due to the close character of our organization. The incongruity of admitting assistant physicians to membership of the Association, under its present name, can be remedied, I think, by a slight change in the wording of the resolution offered by the committee. It would be better, for many reasons other than those we are now discussing, that there should be no restrictions placed upon the membership of assistant physicians to this Association. They are as much interested in the work as we are, and are presumably well qualified to take part in our proceedings. I should, therefore, prefer to see a resolution passed, making them *ex-officio* members of this body, without reference to their time of service. When their official connection with hospitals and institutions for the insane terminated, their membership of this Association should also cease. They should be members by courtesy, so to speak; and the term *ex-officio*, it seems to me, sufficiently expresses that relation and limitation.

I hope the Association will move cautiously and deliberately in this matter, and that, for the present at least, no change will be made in the title of the Association.

DR. CLARK: The suggestion of Dr. Bryce is a very good one. The old name is the best for the society. It covers all the ground. To call our Association Psychological, or any other purely scientific name would include, as members, many who take little interest and may have no experience in the executive work, construction and every-day life in asylums. It is well to confine our membership to asylum officers, and let our designation only cover such. We do not wish to make it possible for professional arabs to become members, and thereby bring our society into

disrepute. [A member: "Such as cranks."] The name American covers the whole ground. In one sense, we are all Americans, although in a geographical and political sense we are Canadians. Seeing we (Canadians) possess the largest part of North America, as we extend to the North Pole, let me suggest the name of Americo-Canadians.

DR EARLE: It is a very serious matter. I have only expressed my opinion, and I do not pretend that my opinion is better than that of any other man. If it is best to take the subject into consideration at all, I would refer it to a committee to report a year hence; and if it is referred to a committee, I would refer to the same committee one or two other things. We profess to have a constitution. It is a very brief one. It is sufficiently long, however, for our purpose, so far as I know, but part of it is in the shape of resolutions, and this, that you have just adopted, is not in the shape of a resolution. I think it would be better to put it into a little more organic form. Then again, it is not definite in respect to the requisitions for membership. It declares that "the medical superintendents of the various incorporated or other legally constituted institutions for the insane" shall be eligible; shall be members. But what is a legally constituted institution?

When the society was organized, it was thought that no institution that was not incorporated by an act of the legislature was legally constituted, that the proprietor or director of no private institution had a right to membership. Until within a few years, the private institutions in Massachusetts could in no way be considered as legally constituted. In one sense they now are, because no one can open a private institution, without a license through a legal channel.

DR. GRAY: I would like to say one word here on this question. I voted for the resolution with the intention of moving its reconsideration. I should have done so at the time, but the pressure of the immediate business of the Association induced me to delay it.

My intention was to move that assistant physicians, without respect to period of service, while connected with institutions and when attending meetings, be considered members and have a voice and vote in the deliberations. I think that is the wisest thing now. I should not be afraid of a word. I do not think there is anything so attractive in "psychological," as to induce us to drop out the word "American" in favor of it. As Dr. Chapin suggested, this Association has a history. No one can claim that it is a weak association in any respect. It has been one of steadily increasing strength and vigor in every direction, whether relating to membership, character, progress in management, quality of papers, or their discussion, or its organization. I should certainly insist on retaining our distinctive title, as the Association of Medical Superintendents of American Institutions for the Insane, though a hundred other societies were to appropriate the word "psychological."

Touching a question which Dr. Earle has raised, I have always been under the impression that Drs. Cutter and White were men connected with private institutions. Whether Dr. Cutter's asylum was a "legally constituted" institution or not, I do not know. Dr. White's, I know, was

simply a private establishment, opened without license. Dr. White was the first vice-president elected in the Association. My understanding has always been that superintendents or medical heads of institutions, of whatever character, public or private, devoted to the care of the insane, were included as members. This has certainly been the practice. There was a discussion in the Association at Baltimore a number of years ago, arising out of a letter written by the late Dr. Wilbur, of Syracuse, requesting the admission of superintendents of idiot schools. The rejection of the proposition created some bitterness on his part at the time and afterwards, which he never overcame. I remember Dr. Ray very distinctly, then maintaining the position that this Association was for the promotion of all interests relating to the insane, and that to gather in other institutions would be, after a while, to multiply membership and multiply institutions represented to such a degree that the Association would become unwieldy and break down of itself.

I sincerely hope that, whatever we do, we shall maintain our distinctive title, and without postponement, determine the question here and now. We shall not be any wiser a year hence than we are now. I trust that any action taken towards admitting assistant physicians to membership in the Association, will not involve a change of the title or name of the Association. The introduction of the words "and assistant physicians," after "superintendents," would not alter the title of the Association.

DR. GILMAN: I am in entire sympathy with the remark that have been made in regard to the retaining of our distinctive name as an Association; and I do not think it is necessary that any radical change be made on account of the resolution which we have adopted this morning. It seems to me that the work we have in view, as superintendents of these institutions throughout the country, is a specific one, and to change the name to Psychological Association, or to Medico-Psychological Association, would be a misnomer. The Association has been attacked by so-called reformers, who would gladly see its name extinguished. I am not in favor of yielding to cranks, either long-haired or short-haired; and I trust that some such proposition, as has been presented by Dr. Gray, will be adopted, and will be sufficient to cover the ground.

DR. NICOLS: I desire to express my sympathy in the main, with the views which that have fallen from Dr. Chapin, Dr. Bryce, Dr. Clark, Dr. Gilman and others, and to express the strong desire I feel that no material change shall be made in the name of this Association. There is much in the point made by Dr. Chapin, as to holding to the traditions of the Association. As Dr. Clark remarked, there is a great deal in a name. The name is known and honored and the usefulness of this Association has without doubt depended largely upon the sphere of activity described by its name.

It was originally organized to promote the treatment of the insane with reference to the amelioration of their condition, in institutions of whatever kind, and a great many of the questions that have been discussed and occupied whole sessions of this Association—and very properly—have not been psychological questions; but they have been proper ques-

tions for it to discuss under its name, and in view of the purpose of its organization; questions in relation to sites, water supply, construction and the details of fitting up and furnishing, which, in the early years of the Association, when these things were less understood than they are now, occupied whole sessions of the Association, and parts of many sessions. It seems to me that the charge is not of the slightest importance. It was organized for a purpose, has kept strictly to it, and I think it better, by all means, to continue to do so. If it is necessary to change the name of the Association to make it consistent with the admission of assistant physicians, it might be done, because it will be small, but there should not be any change that will admit people or subjects that are foreign to the purposes of this Association, nor that will exclude any subjects that come within the purposes of this Association. If this is called a Psychological association, the name will seem to exclude subjects within the purview, and that should be within the purview of this Association.

DR. EARLE: Is it not psychological?

DR. NICHOLS: Yes, and of course, a psychological society could discuss water closets and ventilation, but I think there is a great deal in holding on to sacred associations, and I cannot see the slightest reason for changing our name, given to it by its founders more than forty years ago; by which it is known wherever in all the world any attempt is made to give the insane an enlightened humane treatment and under which it has done a work of incalculable benefit to mankind, and had a membership that has given it high character and honor. I do not think it is necessary to alter the name and I hope it will not be done, except possibly, to substitute the word officers for superintendents, so that the title of the Association will be, *The Association of the Medical Officers of American Institutions for the Insane*.

DR. GOLDSMITH: To take up a matter that has been passed over, concerning which Dr. Gray spoke, it seems to be the opinion of many members, as it was mine, that it is rather unfortunate to make the duration of service the criterion for admission to the Association. Of course, the duration of service is no criterion of ability, and a person who has been less than five years in service and has a desire to attend the meetings of the Association, ought certainly to have, it seems to me, the same privilege as he who has been in the service five years and has no desire to attend. I, therefore, if it is in order, to test the feeling of the Association, move that the action of the Association, in accepting the report of the committee appointed to consider the question of the admission of assistant medical officers of asylums, be reconsidered. I do this with the supposition that, in case it shall be reconsidered, a motion will be offered similar to that which Dr. Gray suggested—constituting all assistant medical officers as members. Of course it will be recognized immediately that this will not so enlarge the Association, practically, as to make it unwieldy, because not more than one medical officer aside from the superintendent can leave a hospital at the same time with the superintendent.

DR. CHAPIN. I would ask Dr. Goldsmith to withdraw his motion a moment, and I will offer an amendment to the resolution proposed by

Dr. Gray that the title of this Association be so amended as to include superintendents and physicians. It is now "The American Association of Medical Superintendents of Institutions for the Insane." With the amendment proposed the title will be in full, "The American Association of Medical Superintendents and Physicians of Institutions for the Insane," the words "and Physicians" being added.

DR. GRAY. I accept that amendment.

DR. NICHOLS. You would insert the word "medical" before "superintendents," the same as before?

DR. GRAY. Certainly; I would not change one word in the title, but simply add "and physicians," or better "assistant physicians" after "superintendents."

DR. CHAPIN. The amendment would be the insertion of the words "and physicians," which I think would cover assistant physicians and all medical officers.

DR. BRYCE. I do not think it is necessary to do that. The matter can be arranged satisfactorily by reconsidering the resolution offered by the committee, and adopting as a substitute "that all assistant physicians of American institutions be considered *ex-officio* members of this Association." It seems to me that the substitution of this resolution, for the one offered by the committee, will cover the whole ground and obviate the necessity of any change in the present name of the Association.

DR. EARLE: There is no objection to that, if you would limit it as this resolution is limited—as long as they continue in connection with asylums.

DR. BRYCE. The word "*ex-officio*" sufficiently expresses that limitation.

DR. EARLE: Very well. Would it not be a shorter way for the Committee to adopt that amendment in their resolution?

DR. BRYCE: That would be entirely satisfactory.

DR. EVERTS: The question before the Association now is on Dr. Gray's motion to change the title or name of this Association in the way he has proposed to amend: that it shall be known as "The Association of Medical Superintendents and Physicians of American Institutions for the Insane."

DR. SCHULTZ: The theory on which this discussion appears to proceed, on the one side, that the title of an organization, or society, ought to express the character or qualifications of its members, I do not think is tenable. Practically it would probably be found that that work is done by some part of the constitution or by-laws; and I think that, if any change is to be made in view of the admission of a new class of members, it should be done in this way. I am in sympathy with Dr. Bryce's remarks that the old name be adhered to, and I would do it more tenaciously because it has been unfavorably commented upon by unfriendly critics.

DR. ANDREWS: I would like to have the resolution read that was adopted in regard to assistant physicians.

The resolution was again read by the Secretary.

DR. PRATT: As one of the honorary members, I believe I am entitled to say a word, I shall certainly not presume to vote upon the question. I wish to ask a question which perhaps contains a suggestion: Does not your very organization imply, although your constitution does not, perhaps, clearly and distinctly express it, that the asylum is the unit of organization, and that your object is not to include any other than those medically employed in insane hospitals? If it be the fundamental idea that asylums are represented here, it seems to me that you do not need to change your name very much, in order to provide in your constitution that all medical officers of asylums will be admitted as your brethren.

DR. FRANKLIN: May I throw out one suggestion before the vote is taken? There is one point bearing upon some institutions, which should be thought of in reference to the word "physicians" in the resolution. Is it contemplated to take into this Association all consulting boards and visiting boards that may be connected with any of our institutions? In the city of New York the inclination is towards appointment of visiting boards and consulting boards. We already have a consulting board for our institutions for the insane. Should we have a visiting board, we would have men of all complexions, and we might have some men who have maligned this Association, and who ought not to be in it.

The question being put to the Association it was decided in the negative.

Dr. Andrews moved for a reconsideration of the first resolution, which was agreed to.

Dr. Bryce offered the following resolution as a substitute for the previous one:

Resolved, That all assistant physicians connected with regularly constituted institutions for the insane in America be considered *ex-officio* members of this Association.

This resolution was unanimously adopted.

The Secretary then read the report of the Committee to audit the accounts of the Treasurer, which was:

Resolved, That they had performed that duty, had found the accounts correct, and recommended an assessment of five dollars on each member to meet the expenses of the Association.

After considerable discussion, it was on motion of Dr. Kilbourne,

Resolved, That all matters in reference to assessment be referred to a Committee of three, to be appointed by the President.

The President appointed on said Committee, Drs. Kilbourne, Nichols and Clark.

On motion, the Association adjourned to 4 P. M.

The Association was called to order at 4 P. M., by the Vice-President, Dr. Buttolph.

The Secretary read a letter from Dr. John C. Hall, regretting his inability to attend this meeting.

DR. CURWEN: While I am up I wish to make a statement in regard to reporting the proceedings of the Association. In 1867, at a meeting in Philadelphia, this Association passed a resolution relative to the reporting of the proceedings of this Association. This resolution is definite and distinct, and as offered by Dr. Earle, it reads that the Secretary shall employ a phonographer to make the reports of the proceedings of the Association. Those reports, when so made, were to be copied, and the remarks of each member sent to him for correction; when corrected, the Secretary should put them in shape and publish them over his signature, as the official proceedings of the Association. Several reporters were employed by the Secretary, who did not give accurate reports. Finally I employed Colonel Demming to make the reports. His reports have been in the main correct; as correct as it was possible to make under the circumstances. Gentlemen will remember, who have attended the meetings of the Association, that they have complained oftentimes of the impossibility of hearing what was going on. Discussions were interrupted and remarks drowned by the noises in the streets, and consequently it was impossible during those times to have entirely perfect reports; but the reports were first corrected by the members themselves before being printed—for certain gentlemen would not be satisfied with the report the way others would correct their remarks,—the rule being, however, under this resolution that no new matter was to be added. A gentleman might abridge his remarks, or remove part, under the rules of the Association, but he could not add any new matter; but gentlemen often wished to add new matter which could not be inserted under the rule, and the Secretary was in duty bound always to prevent the report being changed in that way.

Transcripts of last year's report of the phonographer, employed by Dr. Gray, were sent out to the different members. That report was not as correct in many particulars as the one made by Colonel Demming; that is, so far as it came under my notice, and I saw the greater part but not the whole of it.

I say this simply in justice to Colonel Demming himself.

Dr. Strong read his report on Cerebro-Spinal Physiology, taking for his subject: "Is Education a Factor in the Prevention of Insanity?"

Dr. Channing read the report of the Committee on Bibliography of Insanity.

Dr. Draper, from the Committee on Time and Place of Next Meeting, reported in favor of Lexington, Kentucky, as the place, and the first Tuesday in June,

1886, as the time; which was, on motion, received and adopted.

Dr. Kilbourne, from the Committee on Assessments, reported: That the Committee on Assessments would respectfully recommend that all Medical Superintendents of American Institutions for the Insane be assessed three dollars, to meet the expenses of the Association for the current year.

On motion the Association adjourned to 8 o'clock P. M.

The Association was called to order, at 8:30 o'clock P. M., by the President.

DR. RICHARDSON: As a member of the Committee on Necrology of the Association, I would like to ask leave to have Dr. Fisher make a report of a death that was overlooked by the Committee, on which he has prepared a short memorial.

DR. EVERTS: The additional report of the Committee on Necrology is in order and Dr. Fisher will proceed to read his paper.

DR. FISHER: It is not a paper, Mr. President, but at Dr. Earle's request I collected a few facts in the life of Dr. Edward Jarvis, recently deceased, to be furnished for publication at the request of Dr. Tuke, editor of the *Journal of Mental Science*. As a statistician he was perhaps better known abroad than at home. I have prepared a short sketch of his life and character, leaving a detailed account of his labors for Dr. Earle. In the absence of any other memorial notice, I will read to you that which I have prepared.

Dr. Edward Jarvis was born in Concord, Massachusetts, January 9th, 1802. He graduated at Harvard in 1826 and took his degree in Medicine in 1830. He practiced medicine two years in Northfield, Massachusetts; five in Concord, Massachusetts; and five in Louisville, Kentucky, with but moderate success. His tastes inclined to the study of mental science and anthropology and he lacked confidence in the effects of his remedies. He was early interested in the cause of education and started public libraries in Concord and Louisville. In 1836, while at Concord, he received an insane young man from Cambridge into his house for treatment and in a few months he was well. Several other patients were afterwards received and he then became interested in the treatment of insanity, which specialty he resumed at his home in Dorchester and continued for many years successfully. Dr. Jarvis was disappointed several times in obtaining the superintendency of certain insane asylums in Massachusetts, for which positions he brought the highest recommendations, and for which his

tastes strongly inclined him. He felt these disappointments keenly, but was not deterred from pursuing his favorite studies, as far as possible, in the community at large. He removed to Dorchester, Massachusetts, in 1843, where he remained until his death. In 1840 his attention had been directed to the apparently excessive amount of insanity among the free colored population of the North. This excess had been used by Southern Statesmen in Congress, to show the probable effect of emancipation upon the negro. Dr. Jarvis showed that the census of 1840 was grossly in error in this respect. His aid was solicited in preparation for the census of 1850 and, without official authority, he gave one-third of his time for three years to perfecting the reports. In 1874, the government acknowledged his claim by paying for his services. He was again employed on the censuses of 1860 and 1870, and became the leading authority on vital statistics, and was recognized as such at home and abroad. In 1854 he was made a member of the Lunacy Commission to inquire into the number and condition of the insane in Massachusetts, and the Northampton Hospital was erected in consequence of their recommendation.

In 1843, he became a member of the corporation of the School for Idiots, in Boston, and in 1849, was appointed physician to the Institution for the Blind. He continued to be associated with Dr. S. G. Howe in the supervision and care of these two institutions; for many years, his services being largely gratuitous.

In 1860, Dr. Jarvis visited Europe, where he traveled extensively in charge of an insane gentleman of wealth, who was accompanied by his family. He was commissioned a delegate to the International Statistical Congress in London, where he made the acquaintance of many distinguished foreign physicians and scientists. He was chosen one of the two vice-presidents on that occasion. He visited a large number of the hospitals, insane asylums and prisons in England, forming an acquaintance with Sir James Clark, Florence Nightingale and other philanthropists of the period. The private insane asylums, of which there were one hundred and thirteen, especially interested him, on account of the comparative absence of restraint and the home-like appearance of the old mansion-houses which had been remodelled for the care of the insane. On his return from Europe, he opened correspondence and established exchanges with many foreign institutions. In 1874, his labors were suddenly arrested by a stroke of paralysis. He remained in comfortable health, however, till October 20th, 1884, when a second attack occurred, which terminated fatally, October 31st. His wife died the second day after, and they were both buried the same day in their native town of Concord.

Dr. Jarvis' writings were voluminous and embraced a wide range of subjects. His papers on vital statistics, hygiene and insanity number over one hundred and fifty. He wrote, also, a school physiology which was translated into Japanese, and is in use in Japan. His library was extensive and unique, of its kind. It was donated with all his books, works and pamphlets, to the American Statistical Association of Boston, of which he was, for thirty-one years, President, except certain special donations of Books to Harvard College, the Concord Public Library, and the N. E. Hospital for Women and Children.

Dr. Jarvis was a fellow of the American Academy of Arts and Sciences; member of the Association of Medical Superintendents of American Institutions for the Insane; of the American Social Science Association; of the British Medico-Psychological Association, etc., etc. I am indebted to Dr. Robert Wood, of Boston, for many of the above facts. He was a connection of Dr. Jarvis, and wrote a memorial of him for the American Statistical Association. I was somewhat acquainted with Dr. Jarvis and knew him to be an earnest and life-long seeker after the exact truth with reference to man in his highest interests and relations. He was painstaking and industrious in the extreme as his statistical labors proved. He was not only an anthropologist and a pioneer in this country in statistical science, but a philanthropist also, having deeply at heart the welfare of all the helpless and dependent classes of society.

Dr. Gray then read a paper on "Some of the Preventable Causes of Insanity."

Dr. Goldsmith next read a paper on "The Relation of Syphilis to Insanity."

DR. GRAY: Gentlemen—I crave your indulgence for a moment to make a few remarks in reference to that part of my paper treating of maternity. The Women's Christian Association, of Utica, has undertaken the matter of organizing a Maternity Branch of the Association, with a view to supplying help to all poor and indigent persons, who might apply through a physician. They created this as a special branch, calling it "The Maternity Branch of the Women's Christian Association," and stated that their experience fully justified my suggestion of a special branch, and the employment of persons in the house of the mother to do the general labor and ordinary household duties; a person of the same social class. In this way the responsibility, and especially the worry and care of the household, would be taken off the sick woman, and she would recover far more favorably, having this relief, and her health as well as the better nourishment and care of the child would be better secured. Trained nurses in such cases would not be advisable or needed: the patient would be under the direction of the physician, and the aid proposed is all that would be necessary with such visitation as members of this Association would give. In a large proportion of such cases the professional work would be voluntary and unremunerative. Such rules could be printed and promulgated for the use and guidance of those undertaking the work, that there would be no difficulty in carrying out the object of the Association—the care of this class of poor mothers.

Dr. Draper, from the Committee on Time and Place of Next Meeting, reported that the Committee desired to amend their report by changing the time to the third Tuesday in May, 1886, which was accepted.

DR. GOLDSMITH: Mr. President—I want to take time for one moment, as I am not sure that I shall have another opportunity to speak

to the Association, to make a communication. Some members of the Association may remember that two years ago, at Newport, I read a paper on what I called "A Case of Moral Insanity," or what might perhaps more properly be called "Hysterical Insanity."

The case was one of a girl who, from nine to nineteen years of age, had been continually in hospitals where she had been considered the most troublesome patient in each of the hospitals where she had been. She had on several occasions been tried at home, but without success. I stated that her attacks frequently occurred at the periods of menstruation, and that she usually had some disturbance then. There was some tenderness about the ovaries, and I asked the opinion of the society about double ovariectomy, and although there was not a great deal of encouragement then given, and I did not have any great hope of the success of the operation, as she was such an excessively uncomfortable individual, I decided to try it. Dr. John Homans, of Boston, kindly performed the operation in July, 1883, and pronounced the ovaries perfectly normal, after having examined them microscopically. About one month after the operation she appeared well and was taken to her home, where she has since lived in precisely the same way as the other members of the family without disclosing the slightest evidence of mental unsoundness. She had never shown the least loss of self-control, or unusual excitement, and says that she seems to herself "entirely another person," because she before felt herself continually in danger from slight irritations, which do not now disturb her in the least. Her mother and another friend confirm this statement, and say that she is not at all "nervous or peculiar," but helpful, dutiful and judicious in the family and in her social and church duties. I could observe no loss of femininity in voice, appearance or manner, and her friends tell me that there has been none. She has not menstruated since the operation. I have waited two years before reporting the result in this case, but think that now sufficient time has elapsed to prove the value of the operation.

On motion, the Association adjourned to 8 o'clock P. M., Thursday.

The Association spent Thursday in an excursion on Lake George.

The Association was called to order on Thursday, June 18th, at 8 o'clock P. M., by the President.

On motion of Dr. Curwen, it was

Resolved, That the necessary certificate as delegate to the British Medico-Psychological Association be given to Dr. Sawyer, and any other member intending to visit England during the summer.

The President announced as the Committee on Arrangements of the next meeting: Drs. Chenault, Rodman, Callender, A. B. Richardson and Curwen.

DR. CLARK: Mr. President—If I am in order at this stage of the proceedings, I would just ask your attention for a minute to a practical fact. I refer to the possibility of the physicians of this Association being able to tabulate, from year to year, all the post-mortems made by members of this Association. It has been charged, but without truth, that we never take up pathological and histological subjects, and other subjects of great practical importance. If we could form a committee through which we could get the different results of post-mortems, in a crude way, even if not from microscopic examinations, and then tabulate them in conjunction with the mental symptoms of those who died, we could possibly be able to secure from the seven or eight hundred post-mortems examinations of the more than three thousand deaths a year (I estimate the number at about three thousand,) much information of great value. I ask the Association to appoint a committee of gentlemen to utilize to the best of their power the results of post-mortems, even, as I have said, of the most crude forms, held in the different institutions in North America. I think it would bring before the Association, in a practical way, results, by classification, that we possibly could not get in any other way. That would also be the means of inducing and stimulating physicians to make post-mortems, and with good results. I throw out the suggestion as a subject of importance.

DR. EVERTS: Has any gentleman any remark to make upon this subject, or any motion?

DR. HILL: I am heartily in favor of such an attempt. I hope such a committee will be appointed and that that committee will prepare a blank or form stating what *data* they would like to have recorded of post-mortems, so that the points of importance will not be omitted in making them, but put down properly on paper and that there may be some uniformity in the records if they should be brought together for comparison.

On motion of Dr. Curwen, it was

Resolved. That a committee of three be appointed to take into consideration the whole subject of making autopsies and prepare the proper form of blank for the tabulation of such records.

The President appointed on said committee: Drs. Clark, Andrews and Schultz.

The President announced as the next thing in order, the report of the Committee on the Treatment of Insanity, by Dr. Shew of Connecticut.

DR. SHEW: Mr. President and Gentlemen—About three weeks ago I received a letter from Dr. Carriel, chairman of this Committee, stating that he could not be present and that he had prepared no report for the Association. A few days later Dr. Burrell, of Canandaigua, wrote me to the

same effect. Dr. Carriel requested that I should furnish something. It was too late in the day to prepare a regular report, but I, just previous to that date, had been engaged in the reading of the annual reports of Insane Hospitals for 1884, and had taken some notes in regard to points of interest and thoughts from most of the reports, and it occurred to me that it might possibly cover the ground or fulfill the object of such a committee; and in my paper I shall only try to show what has been done by American superintendents during the past year, as shown by their reports.

Dr. Shew then proceeded to read his paper, after which Dr. Cowles read a paper on "The Insanity of Fixed or Insistent Ideas."

On motion the Association adjourned to 9:30 A. M., Friday.

The Association was called to order on Friday, June 19th, at 9:30 A. M., by the President.

The minutes of the preceding session were read and approved.

The Secretary then read the following letter from Dr. Dewey:

ILLINOIS EASTERN HOSPITAL FOR THE INSANE, }
KANKAKEE, June 15th, 1885. }

JOHN CURWEN, M. D., Secretary, etc.

MY DEAR SIR:—To my great regret I find it will be impossible for me to attend the meeting of our Association this year.

The labor of occupying the twelve new buildings, which bring the capacity of the institution up to 1500, is not quite completed (we have 1369 patients to-day,) and the internal organization will require closest attention for some time to come, as, owing to the detached system of construction, there are many questions coming up of which previous experience does not furnish a ready solution. For the above reasons it is out of my power to be absent from home at this time.

One of the things which I suppose will engage attention during the meeting is the subject of fire protection, and the question of how far buildings for the insane should and can be built fire-proof.

Three things impress themselves on my mind in this connection. First: All three-story buildings, which have hundreds of insane under one roof, should, if possible, be thoroughly fire-proof in their construction.

Second: Owing to the greater expense of this method of construction one of two things must happen, either a larger amount than heretofore must be appropriated or a less number provided for, if it is adopted.

Finally: In constructing two-story buildings in the detached form it

will be possible, so far as such buildings are feasible, to build more cheaply and secure the advantage that at least not more than one building will suffer from fire at a time.

With regard to the method of heating all buildings for the insane, it would seem very clear that steam heating was preferable to any other form.

Now, if I may be permitted, a word with reference to the fire which occurred at Kankakee in January last, in which seventeen lives were lost. I will say first that the building in which the fire occurred, was one of the twelve put up under the following conditions. An appropriation of \$400,000 was made in 1883 requiring this institution to provide for one thousand additional patients within that amount, including the heating of the buildings, furniture, and all else involved in the accommodation for the above number, completed and in use. It was found that the smallness of the amount, per capita, absolutely precluded heating with steam, and at the same time building in the detached form as the law required. This was the reason for the adoption of warm air furnaces.

The fire originated in such a way as to point with reasonable probability to the furnaces as the source from which it sprung, although no evidence could be obtained making it positively certain that the fire commenced in this way, and in fact the exact origin of the fire still remains a mystery.

In regard to the rescue of patients, it may be said, that almost without exception the patients who lost their lives were in dormitories on the second floor, that they were physically able-bodied patients, that the second floor was immediately filled with a dense smoke, in which no person could breathe, before the fire was discovered on the first floor, where the watchman was stationed. The patients sleeping soundly at 4 A. M., were rendered unconscious and suffocated, with the exception of a few who made their escape or were rescued. There were no iron guards or bars on any of the windows, and there were no patients, who might not readily have been rescued from the outside who possessed sufficient presence of mind and intelligence to break out a light of glass and let their whereabouts be known.

There was but one stairway in the building—another economy, which it was found necessary to practice in order to build the buildings at all within the amount appropriated.

Unfortunately, up to the time of the fire, the appropriations for fire apparatus had only been sufficient to put up the hydrants and bring the water to them, and in doing this, a considerable amount had been used from the ordinary fund. Furthermore, these buildings having been occupied but a short time, the equipment and organization of fire service had not yet been possible.

There was a watchman or night-nurse constantly employed in this building, and on the night of the fire, his record in the electric watch-clock shows, that he had registered within fifteen minutes of the time when the fire broke out. To sum up: The loss of life which occurred is accounted for by the fact that at 4 A. M., almost all patients were soundly sleeping, many with their heads covered up, as is so common

with the insane; that the rooms on the second floor, where nearly the whole of the loss of life occurred were immediately filled with smoke, owing to size and situation of flues, before anything amiss was apparent to the watchman on the first floor; that there was but one stairway, and that was situated directly over the fire and immediately rendered impassable; that fire apparatus was lacking owing to insufficient appropriations; finally, the building itself, though a substantial stone structure, with slate roof, had wooden floors and stairway, which were consumed with astonishing rapidity. Several of the above difficulties resolve themselves into the all-pervading one of lack of funds, from which there seems to be no escape.

I desire in this connection to express to the many members of the Association, who advised me at the time of the fire of their kindly sympathy, my heartfelt thanks, and to explain that I have never since that time seen an interval of sufficient leisure to allow me to write to each of them personally, as I would have been glad to do.

I may add that the building, which was damaged by the fire, will probably be at once rebuilt, as the bill introduced in the legislature for an appropriation for that purpose meets with no opposition.

Another subject upon which I wish it might be my privilege to hear the views of the members of the Association is the better training of attendants. I would say in this connection, that I have asked for and received the authority of the Board of Trustees of this Institution to establish for each sex a training ward, in which I expect to make arrangements for giving more thorough and ample instruction to as many as possible of the newly engaged attendants, by means of having a head attendant of much more than usual qualifications in charge, and a trained nurse from whom the details of the proper and skillful care of the patients can be learned. In this ward a more than ordinary range and variety of cases of insanity and physical complications will be placed, not only for the better care of the patients, but for the better instruction of the attendants.

With an apology for my "long-winded" communication, and in the hope that the Association may have a profitable as well as an agreeable session, I remain,

Yours sincerely,

RICHARD DEWEY,

Medical Superintendent.

Dr. Hill read a paper containing the relation of a case of long continued artificial respiration.

Dr. Chapin, from the Committee on Resolutions, made the following report:

This Association, being now about to close its thirty-ninth session, congratulates itself upon the continued zeal of its members and their loyalty to its original purposes, which have co-operated to bring together more than sixty Superintendents and officers of the American Institutions for the Insane, from the extreme confines of the United States and the provinces of Canada, having in charge the interests of

more than twenty-two thousand insane persons; believed to be the largest assembly of members in the history of this body. It congratulates itself upon the fellowship and harmony which have characterized this and all preceding meetings.

It deems it also a fitting occasion to place on record its appreciation of the continued usefulness of an organization which is a medium for the presentation of papers and experience in the treatment of the insane; consultations about the perplexing questions constantly arising in the discharge of our difficult duties, as well as a more general diffusion of knowledge respecting the vexed social problems about which we are engaged.

With no disposition to exercise what might be considered a censorship of the proceedings of the Association, the committee cannot, in view of the largest interests of this organization and the probable addition to our membership, refrain from respectfully offering a suggestion that in the presentation of voluntary papers some reasonable limit, as thirty minutes, should be held to exist; also that the President and committee of arrangements might profitably set apart some portion of each session for the consideration of miscellaneous business, which may come before this body, as well as to announce before the annual meeting a probable programme of the ensuing meeting.

The following resolutions are submitted for your consideration :

1. *Resolved.* That the thanks of this Association are tendered to our late President, Dr. Pliny Earle, for the satisfactory manner in which he has presided, and for the valuable annual address which he delivered before us.

2. *Resolved.* That the resolution adopted at the meeting held in Cincinnati, in 1882, relative to standing committees, be hereby rescinded, and all members of the Association be invited to prepare voluntary papers, and furnish the Secretary with the title of the paper they propose to present, one month prior to the annual meeting.

3. *Resolved.* That the thanks of the members of the Association are due to Messrs. Tompkins, Gage & Co., managers of the United States Hotel, for their personal attention to our comfort and the use of the parlors of the Hotel for the purposes of the meeting, and to the officers of the Delaware and Hudson Railway Company, for an excursion to Lake George, at a reduced rate.

JOHN B. CHAPIN,
A. M. SHEW.

The report was, on motion, unanimously accepted and adopted.

Dr. Everts then read a paper entitled "New Wine in Old Bottles."

Dr. Chenault moved a re-consideration of the resolution relating to autopsies, but not having voted on the resolution, his motion was not sustained.

DR. BUTTOLPH: Notwithstanding the extreme length of my paper, as read, yet an important part of the matter directly connected with it, is contained in another branch of the subject, consisting of biographical descriptions of Gall and Spurzheim; also statements by the believers in and advocates of their system at that period and since, and which will serve to substantiate the truth and illustrate the importance of the views presented in the paper already before the Association.

In view, however, of the late period in the meeting and of the diminished number in attendance, if the latter paper may be recognized in connection with what has gone before, I shall be satisfied.

DR. EVERTS: No doubt it will be so without any action.

DR. BUTTOLPH: I think there has never been—at least there is not now—in the medical profession in general or, indeed, in any profession or department of scientific men, a proper knowledge and appreciation of Gall and Spurzheim, who, for *twenty or thirty years*, labored most assiduously to establish the truth and great importance of a correct physiology of the brain and of a system of mental philosophy based thereon.

On motion of Dr. Nichols, it was

Resolved, That Dr. Buttolph be authorized to have the paper prepared by him, in relation to Drs. Gall and Spurzheim, considered as presented by him to the Association, and that he be permitted to publish it as so presented.

Dr. Hill asked for information relative to statistical tables, to be used in preparing the reports of institutions.

Dr. Gray suggested that the Committee on Autopsies be enlarged to five members, and on motion, it was adopted.

The President appointed Dr. Theo. W. Fisher and Dr. Bryce, the additional members.

On motion of Dr. Nichols, it was

Resolved, That this Association adjourn to meet in Lexington, Kentucky, on the third Tuesday of May, 1886.

JOHN CURWEN, Secretary.

SELECTIONS.

NEUROPATHOLOGY.

The following extracts are from Dr. Alex. J. Duane's report on the "Progress of General Medicine," and they show how markedly general medicine runs into neurological channels. Of the ten subjects reported upon, these seven belong distinctly to the department of neurology. The other three subjects are the "relations of scrofula and tuberculosis," the "virulence of tuberculosis matter" and "pernicious anæmia in children."

1. *The Morbid Anatomy of Diabetes.*—The summing up of Windle's examination "*Dublin Jour. of Med. Science*," of all accessible records of autopsies held in cases of diabetes mellitus is that no one lesion is present with any degree of constancy, and, further, that no one organ is involved in more than half the cases in which the condition of that organ has been ascertained. Thus, in 184 cases in which the brain was examined, it was found normal in 91, and in the remaining 93 the most diverse lesions were discovered. Lesions affecting the medulla and the fourth ventricle were present in 23 of these cases. So, also, among 58 cases in which the spinal cord was examined, only 25 showed any abnormality. On the other hand, out of 333 cases, only 75 presented a normal condition of the lungs, while rather more than one-half of the whole number displayed the lesions of pulmonary phthisis. It is to be noted that these pulmonary lesions do not appear to be the result of the deposition of tubercle, and for their origin seem to be dependent upon some change taking place in the nervous system. Fat embolism of the lungs, although described by some, seems to be of rare occurrence. Enlargement and congestion of the liver are frequent accompaniments of diabetes, but the microscopical appearances are not characteristic. The same may be said of the renal changes. The pancreas, again, was affected in more than half of the cases in which the condition of the organ was noted, the lesion being usually of an atrophic nature. Lesions of the other organs are noted, but are

still more inconstant in their appearance. These are all tabulated in considerable detail in the original paper.

2. *Diabetes Insipidus*.—Weil (*Ibid.*) has, with extraordinary patience and industry, followed out the family history of a patient afflicted with diabetes insipidus, and has found that in his case it was undoubtedly an hereditary malady, many of his ancestors and immediate relatives being victims to it, or, to use their own phraseology, being “water-drinkers.” The disease first appeared in the family records in the great grandfather, who had five children, of whom three were affected like himself. Of twenty-nine grandchildren, seven were “water-drinkers” and nine died in infancy, before the disease had a chance to show itself. There were fifty-six great grandchildren, and twelve of these were the subjects of diabetes. It is to be remarked that all who escaped having the disease transmitted the same immunity to each one of their children and grandchildren; so that atavism would seem to be the exception in the transmission of this form of diabetes. The author's facts, the collection of which must have cost him very great expense of time and trouble, are summed up in a neat genealogical tree, showing the relationships between the diabetic ancestor and his ninety descendants, as regards both the ties of blood and the more recondite associations involved in the transmission of the disease.

3. *Diabetic Coma*.—Lindsay (*Ibid.*) brings little that is new to add to our confessedly imperfect knowledge of diabetes. He briefly dismisses most of the current theories as to the origin of diabetic coma, believing them all to be unproved, although he inclines most favorably to the toxæmic hypothesis. His own observations, with those of others, show that coma terminates about half of the cases of diabetes, being relatively more frequent in the young and in cases of acute coma, more particular those uncomplicated by pulmonary disease. [That a rapidly fatal course with death from coma is usual in young subjects has been shown already by Schmitz, who has statistics of six hundred cases of diabetes.]

4. *Diabetic Neuralgia*.—The occurrence of neuralgia in diabetic subjects, and depending apparently upon the diabetic diathesis for its existence, has been noticed by several writers within the last two or three years.

Cornillon (*Ibid.*) has collected the histories of twenty-two instances of this association of neuralgia with diabetes; eight of these cases, including two contributed by himself, have been very fully described; the histories of the other cases are more meager. The characteristics of diabetic neuralgia, judging from the description of these twenty-two cases, are well marked, and render the diagnosis of the complaint easy. Such neuralgias are distinguished by their spontaneity, no cause, either immediate or remote, except in glycosuria, being discoverable; by their intensity, hardly paralleled in any other variety of pain; by their tendency to a symmetrical development (noted in eighteen out of the twenty-two cases); and by the obstinacy with which they resist any form of treatment except that addressed to the relief of the causal condition—the diabetes itself. They show a tendency to attack the regions supplied by the sciatic nerve, although the face and other parts of the body are also occasionally affected. They are associated with marked tenderness to pressure over the course of the nerve which is the seat of pain; the and motion of the muscles in the vicinity of the nerve, as well as variations of temperature, greatly aggravates the suffering. The causation of this rather infrequent form of neuralgia is still obscure. The author rejects the hypothesis of Rosenstein, that it is due to congestion of the abdominal viscera, on the ground that the latter is so often present without the co-existence of any neuralgic or any diabetic symptoms. The theory that it is due to an excess of sugar in the blood is disproved, he thinks, by the fact that in some of the cases the glycosuria is very moderate, and that, although in some instances the intensity of the symptoms is proportional to the degree of glycosuria, this is by no means the universal rule. Cornillon's own view, which we believe to be open to the same objections that he urges against these other theories, is that diabetic neuralgia is a manifestation (as he holds diabetes itself to be) of a gouty diathesis, and that such a neuralgia is the direct result of a condition of uricæmia. The decision of this question must, however, undoubtedly await more extended investigation and the analysis of a greater number of cases than the author has been able to collect.

5. *Intestinal Neuroses.*—Cherchevsky (Rev. de méd.) has collected several cases which he regards as examples of tonic spasms of the circular muscle-fibers of the

intestines. This accident, which occurs more especially in persons of intellectual habits and sedentary modes of life, is characterized by suddenly appearing enormous tympanitic distension of the abdomen, with a considerable degree of pain and tenderness, a sense of epigastric oppression and of dyspnœa, violent griping pains and constant desire to go to stool with inefficient expulsive efforts, and the passage of only a small amount of fœcal matter in the form of bullet-like scybalæ or of small compressed cylinders. These symptoms last a few hours, or even some days, and then suddenly disappear. In the intervals between the paroxysms the patients enjoy excellent health, their appetite is good, and their complaint is of more or less persistent tympanites, with constipation and frequent eructations of odorless and tasteless gas. The paroxysms are induced by intellectual effort, mental excitement, violent emotions, etc. This, together with the suddenness of the appearance and disappearance of the symptoms and the character of the latter, leads the author to the belief that in this condition we have to do not with a state of intestinal atony, but with a state of localized intestinal spasm, producing sudden accumulations of gall with the associated phenomena of colic, tenesmus, and constipation. The results of treatment are corroborative of this view, as the constipation and tympanites yield readily to opium and belladonna, while cathartics, which should ameliorate the symptoms, if due to atony, only aggravate them.

6. *A Disease of Auerbach's and Meissner's Plexuses.*—Blaschko (Arch. f. path. Anat. u. Phys. u. f. klin. Med.) has described two cases in both of which there was extreme fatty degeneration of the sympathetic plexuses in the walls of the intestine (plexuses of Auerbach and Meissner.) Only one case presented a well-defined clinical history, the symptoms being those of extreme and progressive anæmia and profound disturbance of the digestive functions, with abdominal pain, but without any characteristic change in the blood suggestive of pernicious anæmia or of leucocythæmia. There was marked atrophy of the intestinal wall, and the fact that in other cases where this atrophy existed, and where a sufficient cause for its existence was present, no alteration of the sympathetic plexuses was found, seems a proof that the sympathetic lesion in this case was the cause, and not the effect, of the intestinal atrophy.

7. *Edema from Vasomotor Paralysis.*—Jankowski's experiments upon animals (*Ibid.*) tend to prove that vasomotor paralysis is an important factor in the production of œdema; and that, while scarcely of itself sufficient to excite this condition without an accessory hydræmia, its influence must be called into account for most of the cases of œdema occurring in cachectic conditions. The fact that transudation from the vessels may thus be largely dependent upon the state of the peripheral nerves, and hence upon alterations of the nervous centers affecting this state, will also serve to explain the existence of urticaria and of the acute circumscribed œdema of Quincke (acute rheumatismal œdema), which undoubtedly have their origin in the central nervous system.—*New York Medical Journal.*

TUMOR OF THE CORPORA QUADRIGEMINA.—The case recorded by Dr. Carnazzi, *Rivista Veneta di Scienze Mediche*, is of especial interest, from the light it throws on the functions of the parts involved, and from the fact that the opinion formed during the patient's life as to the nature and seat of the tumor was confirmed after death.

The patient, a man named Colombi, aged 31, had good health till the middle of last July. Then he began to suffer from short sharp attacks of frontal headache, at intervals of several days. The attacks gradually increased in frequency, in severity, and in duration. Then they were accompanied by giddiness and vomiting. The mental faculties, hitherto unaffected, were disturbed only during the attacks. Silly acts were performed, ideation and perception were clouded, and memory was weakened or suspended. In the intervals between the paroxysms, the patient appeared quite well in every way. This alternation continued for two months, when the patient was taken into the hospital in the middle of September.

At this time he was slow in expressing himself, and he had a slightly stupid look, but there was no lack of harmony amongst the features. The senses, sight, hearing, smell, and taste, were normal. The right pupil was somewhat mydriatic; but both reacted to light. There was no facial spasm of paralysis, and the tongue was protruded without deviation. While the patient was in bed, there was no functional alteration either in the trunk or in the extremities. When he was made to get

up and walk, his gait was staggering. In the upper limb there was not any disturbance of function. There were no anæsthetic or hyperæsthetic points. Excretions and secretions were normal. The pulse and respiration were normal and there was no fever. The patient complained only of continuous weight in the head, and of headaches recurring every ten or twelve hours, followed by vomiting or attempts at vomiting. This was the condition of Colombi when he was received into the hospital, two months after the first symptoms had shown themselves.

Some days after this he was seized with a slight convulsive attack, rolling over on the left axis of the body, and remaining unconscious for about ten minutes. When he came to, he was confused in mind. Vision was obscured on the right side; the right pupil was mydriatic, and the iris inert. The left eye remained normal. During the attack the radial pulse fell as low as forty-four beats a minute, and remained at this point for some hours. These attacks recurred at first at intervals of four or six days; then every twenty-four hours, and lasting two or three hours at a time. The pulse on these occasions fell to forty or forty-two beats; and the respirations became stertorous.

With the progress of the other symptoms appeared. Strabismus occurred at first during sleep, then in waking hours; the right eye was turned upwards, the left downwards. The head and trunk were permanently drawn backwards to the right; and the lower limbs contracted. The sight of the right eye gradually diminished to absolute blindness, and the left eye followed the same course later on. In the last fifteen days of the patient's life, rapidly advancing bed-sores and a sacral abscess showed themselves. On November 13 the patient died, greatly emaciated.

Professor Lussana, who saw the case, diagnosed a cystic tumor of the mesocephalon. The author, after repeated examinations, was able still further to localize the disease as a cystic tumor in the corpora quadrigemina, especially on the left side.

The post-mortem examination revealed a tumor about the size of a hen's egg, situated upon the corpora quadrigemina, which it had rendered atrophic. Hardly a trace was left of the divisions between its parts. The tumor was in contact with and slightly buried in the

anterior-superior border of the cerebellum, where there was a slight and superficial softening corresponding to the origin of the transverse and superior peduncles. The softening extended about a centimetre on the right side, and a half centimetre on the left. The thickened and compressed peduncles did not present any change in texture. The tumor was a round-celled sacromatous cyst containing about forty grammes of a creamy whitish fluid, probably mucoid degeneration. In the lateral ventricles were found several small hydatid tumors attached to the choroid plexus; four in the right ventricle, three in the left.

The author, in commenting on the case, recalls those mentioned by Nothnagel. Nothnagel gives eight cases of tumors of the corpora quadrigemina—namely, his own in 1876, one by Duffin in 1876, one by Rosenthal in 1875, one by Seidel in 1861, one by Kohts in 1875, one by Henoch in 1864, one by Steffen in 1864, and one by Gowers in 1879.

The first four of these were complete, and were free from complications; and the case now recorded by the author resembled them closely in all respects. The other four cases were incomplete or complicated, and are useful only as a check. Cases mentioned by other authors are so complicated as not to be available for comparison.

The symptoms may be divided into three classes: 1, those due to direct permanent pressure; 2, those due to irritation; 3, those due to recurrent endocranial pressure.

Amongst the essential symptoms due to permanent pressure are the amaurosis and the paralysis of the iris, which commenced in the right eye and advanced steadily to the left. The pressure of the tumor was at first chiefly on the left side. Another group of essential symptoms, found also in the cases referred to by Nothnagel, includes the irregular locomotion and the contracture of the vertebral column. Cephalalgia is also an essential symptom. The strabismus is ascribed to irritation of the transverse peduncles of the cerebellum.

Amongst the less constant symptoms are vertigo, stupidity, loss of memory and consciousness on the part of the cerebrum; vomiting, singultus, and stertorous breathing on the part of the medulla oblongata. The slowing of the pulse during attacks of increased endocranial

pressure accord with the results obtained experimentally by Schiff, who found that sudden bruising of the optic lobes in the frog, which correspond to the corpora quadrigemina in mammals, causes a temporary cessation of the heart's beat.

Touching the diagnosis of amaurosis of cerebral or of cerebellar origin, from that due to disease of the corpora quadrigemina, the author makes two or three observations. He thinks that in cerebral amaurosis the intelligence is more likely to be affected. In cerebellar amaurosis he believes the defect to be an ataxy of movements of the eye, rather than a loss of true visual power. It is well to remember also that, according to Dugès and Schiff, the anterior bodies preside over vision, the posterior over intra-ocular movements. The corpora quadrigemina do not by themselves seem to influence the movement of the eyeball; and this is not difficult to understand, as the nuclei of the motor nerves of ball are in the floor of the fourth ventricle.

The occurrence of irregular movements and contractions recalls the observation made fifty years ago by Serres, that the corpora quadrigemina excite the association of muscular movements. Rolando, too, observed alteration of muscular movements from lesion of these bodies. Renzi noticed muscular contraction and disturbed locomotion from the same cause. According to Professor Lussana, the question concerns rather the peduncular motor fibres which pierce the corpora quadrigemina. In the case at present recorded, however, the antero-superior portion of the cerebellum was slightly and superficially softened, and this may have had some share in producing the symptoms.

In reference to the headache, it is interesting to know that when the copora quadrigemina are touched with a piece of wood, there is convulsive agitation with indication of acute pain.

[A microscopic examination of the surrounding nerve-structure is not given, and in the absence of it the actual amount of disorganization cannot be known with certainty. In regard to Prof. Schiff, it may be remarked that later experiments led him to regard the base of the posterior eminences as governing intra-ocular movements, the posterior eminences themselves being concerned in the rotatory movements of the eyeball.—*Cincinnati Lancet and Clinic.*

AMAUROSIS DUE TO BROMIDE OF POTASSIUM—Dr. Rubel reports, in a German Journal, a unique case of this kind. A woman, aged 23, attacked with mental disease, suffered from epilepsy, and was treated with large doses of bromide of potassium. One day she lost her sight and Dr. Rupel was consulted. An ophthalmoscopic examination revealed the fact of evident paleness of the organ owing to diminution in the calibre of the retinal vessels. The bromide was discontinued and the iodide of potassium substituted. At the end of five weeks the patient recovered. Bromide of potassium was used again and blindness once more induced. The medicine discontinued, the patient again recovered.—*Recueil d' Ophthalmologie. Cincinatti Lancet and Clinic.*

A CASE OF APHASIA, not directly indicating Broca's speech center, is recorded in the *British Medical Journal* of June 10th, in which the chief lesion was seated in the supra-marginal and angular gyri. The plugging of the distal portions of the Sylvian artery and resulting œdema and softening caused the lesion. The proximal portion of the artery was pervious

NEUROTHERAPY.

ERGOTIN IN THE TREATMENT OF LANDRY'S PARALYSIS.—Dr. Sorgenfrey, a Russian physician (*Neurol. Ctrbl.; Dtsch. Med.-Ztg.*), relates the case of a patient, fifty-seven years old, who was attacked, about a week after exposure of his back to a drenching rain, with a sensation of heat, prostration, loss of appetite, and a sense of weight in the lower limbs. Weakness in locomotion culminated in perfect paralysis of all the limbs, dyspnœa, impeded speech, dysphagia, etc. The sensibility was normal. There was no pain. The cutaneous reflexes were present, but the patellar reflex was absent. The urine was normal; the bowels were constipated. No account is given of the electrical reaction of the muscles. Leeches to the anus, dry and wet cups to the lumbar region, cold compresses, and laxatives produced no effect, and death seemed imminent. As a last resort, the following was ordered:

Bonjean's ergotin 19 grains.

Cinnamon water 2 ounces.

A teaspoonful was given every hour, and the whole

was used in the course of a night. The next morning the bulbar symptoms had disappeared, and within a week, without further medication, the patient was well.—*N. Y. Med. Journal.*

HYGRINE OF COCAINE.—Cocaine, the wonderful drug which anæsthetizes mucous membranes, and has simplified many minor operations on the eye, is very costly. Hence we must not be surprised to hear that, in Paris at all events, the manufacturers endeavor to obtain as much of the alkaloid as possible by submitting the coca leaves to a second process of exhaustion. The result is very similar to that which follows attempts to make a second infusion out of already exhausted tea leaves. Certain substances are extracted which are not cocaine, but have nevertheless a remarkable effect on the pupil, causing it to dilate in a marked manner. These substances are derivatives of hygrine, most of which are mydriatics. Eserine is not an efficient antagonist to atropine, but it is to these derivatives of hygrine. Our readers may have observed that different observers have made different statements with regard to the action of cocaine on the pupil. Some have asserted that cocaine has a powerful mydriatic effect, which others have not noticed. This difference may be explained by the above mentioned facts.—*Lancet*, May 16, 1885.

A NEW ANTI-EPILEPTIC AND NERVINE, said by the Spanish and South American medical journals to be of great value, is the fruit of a species of caper, the *capparis corriacea*, a native of Peru. It is used in the shape of an infusion, 3 drams of the powdered fruit infused in good red wine being a dose. It undoubtedly possesses considerable sedative power and is valuable in hysteria and similar nervous disorders, and is relied upon by native physicians as a powerful agent in preventing epileptic attacks.—*St Louis Med. and Surg. Journal.*

CLINICAL NEUROLOGY.

A CASE OF PARALYSIS OF THE LOWER EXTREMITIES WITH HYPERTROPHY OF THE SKIN, SUBCUTANEOUS AND MUSCULAR TISSUES.—Dr. John K. Mitchell, in the July number of *The American Journal of the Medical Sciences*, records a curious case, a female, aged 50, which presents

a total of several unusual conditions: paralysis, without any degenerative reaction, enormous hypertrophy of the skin and subcutaneous tissues, and increase of the size of the muscles due to the extraordinary overgrowth of their fibrillar elements. It has certain features in which it resembles scleroderma, and some that are like elephantiasis, and without the microscopic investigation it might have been taken for what on the first superficial examination of the patient it was thought to be, pseudo-hypertrophic paralysis.

But the skin had not the tense, hard induration which scleroderma shows. Scleroderma is usually found with more or less pigmentation, it begins with pain and œdema, and is nearly always accompanied with atrophy of the underlying muscles, and though it varies in position and may be limited or diffuse, it is seldom or never so absolutely symmetrical as the lesion described. Certainly there is a slight likeness to elephantiasis in the skin condition, but the general fever and inflammatory symptoms of that disease were never present, nor has the course been like that of elephantiasis, which progresses by recurrent attacks.

Nor on careful comparison, does it seem much like the pseudo-hypertrophic paralysis. The age of the patient—this paralysis is almost unknown in adults except where it has continued from infancy—the persistence of the knee-jerk, and the troubles being, even after lasting so long, entirely confined to the lower extremities, are some of the differences. Here, too, no loss of voluntary contractility in any other than the affected muscles, nor any atrophy of the pectoral or dorsal muscles, a condition which Gowers calls diagnostic of pseudo-hypertrophy could be discovered. To the eye and touch, besides, the muscles in this case were much more lumpy and less homogeneous than they are in the false overgrowth.

A few cases of true muscular hypertrophy have been reported. The overgrowth in all of them was limited to the muscular tissue, and the malady began after great and long-continued exertion, or after depressing disease or injury. All of them were unilateral and in one limb only. Studies of extracted fragments of muscles showed the fibres to be double the natural breadth, and demonstrated an increase in the number of nuclei.

So far as Dr. Mitchell has been able to discover during the year which has passed since he first examined

the case there has been nothing like it known, and he thinks he has good grounds for saying that the complexus of symptoms is entirely a new one.

RAYNAUD'S DISEASE.—At a recent meeting of the Clinical Society of London (*Medical Press and Circular*) Dr. Calcott Fox brought two adults affected with this disorder and read notes on the cases. A woman, aged forty-one, of extremely nervous temperament, dated the commencement of the disorder from ten years back, but though this was the period when her intention was attracted by her pain, it is probable that she suffered from slight attacks for some years previously. In the earlier stages all her fingers continually went "like white wax." This condition of recurrent local syncope gradually gave place to local asphyxia, and the feet became involved. The fingers gradually lapsed into a state of chronic asphyxia, which was intensified by frequent attacks of more severity, often leading to "blood blisters and ulceration." The nutrition of the phalanges has suffered greatly so that her hands are crippled, the fingers are fusiform in shape, livid, shiny, and withered; the nails variously distorted, and the end phalanges much atrophied and almost immovable. The nose and ears are affected to some extent on exposure. Cold and nerve shocks are ready exciting influences. The second case was that of a man, aged fifty-one, and was of considerable interest from the fact, that like one of Raynaud's cases, he suffered from diabetes. His hands were not deformed, but he had suffered for several years from "dead fingers." He sought Dr. Fox's advice for symmetrical gangrenous patches on the skin, which recurred, and later for an attack of asphyxia of one great toe and lower third of the inner side of the leg, and then it was found that he had been attacked in a similar manner, though more severely in the other toe, and on another occasion blood blisters had formed beneath the ends of his toes. Dr. Fox concluded his paper by giving a reference to some cases which have been recorded as a scleroderma of the extremities. A woman with the latter disease was shown to illustrate the difference between it and Raynaud's symmetrical gangrene of the extremities.—*Louisville Medical News.*

SKIN DISEASES OF REFLEX NERVOUS CAUSATION.—Dr. Wm. T. Corlett read a paper on this subject before the Ohio State Medical Society at its late meeting (*Medical*

and *Surgical Reporter*), and he concludes that neuroses of the skin are met with in neurasthenic persons, either when they are suffering from pathological changes in the viscera or when the viscera are undergoing physiological evolutions—as pregnancy—thus becoming remote oci of irritation. He divides the neuroses of the skin in two classes: senso-neuroses and tropho-neuroses. Among the former the most important is pruritus as a disease *sui generis* and among the latter, anomalies of secretion and of pigmentation, except by Ohmann-Dumesnil, Dermatological Department, *St. Louis Med. and Surg. Journal*.

GRAY DEGENERATION OF THE OPTIC NERVE WITH ABNORMAL PATELLA-TENDON REFLEX.—Dr. Wm. F. Norris made an elaborate review of the literature of the subject, and gave the results of his observations in cases in which the patella tendon reflex was increased or diminished. He described three cases of gray degeneration associated with tabes dorsalis which had come under his observation. While he did not hold that this symptom indicated beginning tabes dorsalis, yet it was a danger signal calling for rest of the brain and cord, with attention to improvement of the general condition.—*Proceeding Amer. Oph. Soc.* July.

EDITORIAL.

[*The Editor is Responsible for all Unsigned Editorial Matter*]

Sudden Revulsion of Feeling in a Would-Be Suicide, after a hundred feet descent through the air into the water.

A case is recorded in *The Cincinnati Enquirer*, which illustrates how far a man may descend in the air without material harm, if he falls in a certain manner into a sufficient depth of water. It shows also the curative influences of shock, and the plunge bath over transient suicidal impulse, and gives testimony worthy of record concerning the sensations experienced during such a descent.

The man was a native of Ireland, aged fifty-nine years, married, and the youngest of a family of nine children, who left his home in Dayton, Ohio, on the twenty-second of June for Cincinnati in search of employment, where he drank several times of liquor. At three o'clock of the same day he started to walk across the bridge which spans the Ohio river, between Cincinnati and Newport. Arriving at the center of the structure, he deliberately climbed upon the high railing and jumped.

His body turned several times in the air before reaching the water, and produced a loud report on striking the surface. The act was witnessed by a large number of foot passengers on the bridge and workmen on both sides of the river. The man disappeared for a short time, but arose to the surface and struggled in the water until the arrival of a rescuing party, who had witnessed the deed from a boat-house on the bank.

He was brought to the Ohio side and taken to the Hammond Street Station-house. On arriving there Knott jumped nimbly from the patrol-wagon and walked into the station-house, where he was recognized by several of the older policeman. He was examined from head to foot, but not a scratch was found on his body. The only indication of injury was in the back, of which he complained somewhat. Both legs of the man's pantaloons were ripped on the inside from top to bottom. The man was given a stimulant by Lieut. Thornton, and in less than an hour

after the fearful leap into the river, he was again on his way home to Dayton, accompanied this time by an officer. Knott's wife had heard of his attempt at suicide before he left the station-house, and telephoned over to ascertain if he had been injured.

Knott said that he jumped from the bridge with the intention of killing himself, but expected to be killed by striking the water. He says he went down about fifteen feet, and tried to go to the bottom of the river, but instead he arose to the surface. He had been contemplating self-destruction for over a week, but was glad he escaped death yesterday. Said he:

"I wanted to die, but I believe it was an act of God that saved me. I have had enough now, and don't want any more of it."

Knott is an intelligent man, and was in the best of humor while at the station-house, talking and laughing over the deed. The distance he jumped was about one hundred feet, and the depth of water at that point is about twenty feet.

At the man's house the following conversation occurred:

"How do you feel, Mr. Knott?"

"Pretty well."

"You had quite a jump to-day?"

"Yes, and I don't care to repeat it; was sorry after it was done."

"How did you feel whirling through the air?"

"Oh, I can't describe it. It seemed as if I had lived a million of years in a minute. All I had ever done or said, oh, everything, seemed to whirl in a flash before me. Why, I lived my life all over again, my whole fifty-nine years; then I struck the water flat, sitting down, my legs and feet up in the air. The flush of the air as I rolled over and over in space took away my breath. The moment I touched the water I was chilled, and regretted what I had done. I don't think I sank far, perhaps fifteen feet. I felt no pain, no dizziness. I can't tell how I happened to jump off. It was a sudden impulse. I could not help it. It came on me, and I obeyed it. When I stood on the top of the bridge something told me to go, and then nothing could have held me back."

"Have you been sick?"

"Troubled with sleeplessness for the past two weeks. I have been out of work for a short time. Perhaps that

worried me a little; but I have been feeling bad for some time, and spoke to my friends about it."

Odlum who lately leaped from the Brooklyn bridge, a distance of on hundred and thirty-two feet, falling on his side, was too much damaged, and died too soon to give his experience.

Sam Patch's fatal leap from Niagara suspension bridge, some years ago, was a shorter one, though he had before made the leap successfully, and sailors leap without harm from yard arm and rigging. We hope some medical man will investigate this subject of great leaps into deep water, and place an accurate history with such physiological deductions, as a thorough grouping of all the facts warrant, on record.

Cerebral molecular concussion seems capable both of causing and curing insane states of mind. Profound organic impressions both make and unmake lunatics. Men are frightened into and out of insanity. There used to be a method in vogue a very long time ago, we have been credibly informed, of immersing the acutely insane lunatics of a certain asylum in this country in a well, and removing the patient when the bubbles ceased to rise, resuscitating and curing him by the profound impression. The method acted sometimes like Dr. Rush's once famous tranquilizer, and sometimes it did not.

Transitory Mania.—At the last meeting of the Medical Society of the State of California, Dr. Washington Ayer read a paper upon the subject of mania transitoria, in which he denied the possibility of the existence of such a condition *per se*; and held that the medico-legal bearing of such a theory is to protect the criminal, encourage homicides and sacrifice justice. He now desires to obtain the opinions of medical gentlemen in charge of insane asylums throughout the country upon this subject, and for that purpose has prepared the following interrogations. He requests an answer to them from parties individually addressed.

We give the interrogatories with our answer, and take pleasure in calling attention to the subject, while regretting our inability to favor the doctor's theory, for it is only the theory of inexperienced, or theory blinded observation. The facts are against Dr. Ayer's view. Insanity may come on as suddenly as it is possible for disease to invade the system and possess the brain.

1. How long have you been connected with any

institution for the treatment of the Insane? *Ans.*—Seven years; two institutions.

2. Have you ever seen a case of transitory mania that was not dependent upon some form of insanity, and that did not present itself as a manifestation of previously existing disease? *Ans.*—Transitory mania is itself a form of insanity, and being itself also a disease, it most usually has pre-existing physical disease, though that disease may, and often is latent, so far as its symptomatic manifestations are concerned. Transitory mania may come, however, with a cerebral congestion, or an embolic closure of an artery, and may be as sudden as a vaso-motor spasm, a vertigo, and epilepsia, or a cardiac paralysis or heart clot, and their functional results.

3. Do you consider it possible for transitory mania to occur as an idiopathic disease? *Ans.*—Yes. Such a pathological fact can not be reasoned out of existence. It is not a question of possibility, but of clinical fact to be observed, and acknowledged when observed.

4. How many insane persons have you had under your care? *Ans.*—In an out-of-asylum practice about three thousand.

Transitory mania may be the first manifestation of insanity. It is not usually the final. It may and often is followed by other and continuous or remittent mental symptoms; though it is not usually preceded by them.

Dr. Edward Jarvis, of Dorchester, Mass., settled this question long ago.

There are men of experience who will not recognize facts in pathology when they see them, but the facts of disease are stubborn things, like other facts, and will not always conform in symptomatological expression to our conceptions, or rather to our misconceptions of morbid propriety. Maniacal delirium may be as transient as the epilepsia or obscure epileptoid upon which it often depends. It may come and go as transiently as the anæsthesia which sometimes excites it.

The question of transitory mania is simply a question of how acute insanity may be, and the pathological possibilities of the brain are no more tardy than its physiological. Insanity may come, as it often ceases, suddenly. A psychical spasm may be as transient as a reflex act of the spinal cord. It may come as quickly as an urticaria follows an engastric irritation and need abide no longer or not so long.

It is true that evidences of predisposing morbid conditions, if dilligently sought for, may often be found associated with sudden and transient outbursts of insanity, and sudden insanity, not so preceded or accompanied, should be accepted with caution, but their possibility can not be denied.

The following apropos record is a clinical illustration of how acute insanity may be in its inception, and how soon it may pass away:

S—, residing in a city in Kansas, is a young physician of temperate habits and good moral character, married and aged 33. Dark hair, blue eyes, six feet in stature, and physically well proportioned. He has been for several weeks very busy; out much at nights.

His increasing practice gives him anxiety. Instead of retiring when through with his patients he studies his books, and being often called unrefreshed from his bed in the mornings, a cerebral restlessness and insomnia develops, for which he takes chloroform.

He starts on a trip to Washington with some friends. On his way, when but twelve hours from home, he imagines he emits a foeted odor from his person, and stops off at Kansas City in consequence.

Two friends bring him to St. Louis the following night; on the way, delusions of suspicion crowd upon him. His mother has been insulted, and his wife has been killed by these friends, and attempting violence upon them, he is lodged in jail, spending the day under the dominion of this delusion; but at night a profound sleep is secured, though on a hard plank, and in the morning the cloud has passed; he realizes the delusive nature of the false impression, rejoices that his wife and father are coming to take him home; realizes that he is free from insanity, discusses the causes of his sudden affliction, and appreciates that he has escaped the asylum through timely sleep.

Ceaseless Vigilance is the Price of Safety in Lunatic Asylums, and the only Guarantee of Security Against Casualties. The limitation of personal restraint of patients, at all approximative to the mis-named non-restraint, is only practicable when continual vigilance, from superintendent to remotest subordinate attendant or employee, is the unvarying law of the hospital.

If morbidly destructive impulses are not directly restrained, they must be made impracticable of execution

by vigilance that never sleeps, and by environments so arranged and buildings so constructed as to do continual guard duty in constant active co-operation with every officer and employee. Sharp-pointed knives and scissors, and open bath rooms, clothing rooms, and dumb waiters, windows, stair-ways, skylights and upper stories; unguarded drug supplies, and patients not specially accompanied, should be unknown to lunatic asylums, and the exercise grounds should be daily policed for everything that might be used to harm or destroy. Trusting confidence in the insane, unaccompanied by watchfulness, will bring grief to the asylums.

The martyrdom of attendants and asylum officers is a continual sermon in vigilance towards the insane, and the public press daily teems with the lamentable lessons lunacy too implicitly trusted or unsuspected teaches on neglected precautions and tardy vigilance.

The late death of Dr. Metcalf, from the stab of an attendant at Kingston, is the text for these remarks.

Some years ago a Kalamazoo physician, Dr. Foster Pratt, presented an appalling exhibit from the daily press accounts of casualties caused by insanity, but the public, heedless of its "risks and dangers from insanity," still goes on its way adopting no precautions, and as clamorous as ever for the freedom of the lunatic, so clamorous, in fact, that asylum superintendents acknowledge with circumspect caution, the fact that they restrain lunatics at all.

If a lunatic at large, in the exercise of his liberty commits a shocking murder, the blind cry of vengeance is raised, and the newspaper straightway derisively warn the public against the plea of insanity, and prejudice the public mind against the plea, so that many a poor lunatic has of late years gone to the asylum, because of the non-availability with juries, through the newspaper prejudice engendered against his just defence, and through wrongly directed public feeling apposing the asylum guardianship of any but obviously dangerous lunatics.

And when these mental unfortunates do get where they belong, under asylum restraint and treatment, the same misdirected sympathy, born of wrongly entertained sentiment, clamors for their freedom rather on general principles than on their special needs.

There are some lunatics to whom it were safe to entrust limitless freedom, there are others to whom a

very considerable freedom might be allowed, but modified and regulated according to their mental states on different days, weeks or months, and there are others to whom no freedom at all is safe to themselves or others.

This is a question for science and psychiatric experience to decide, and the concern of the public should be not so much as now in the individual patient, but more in the kind and quality of medical service to which their welfare is entrusted.

The public should see to it that asylums are so constructed without regard to necessary expense, and so provided with appliances and congenial surroundings of unirritating safety for patient and public, as to conduce to their happiness and security from violence to self or others.

The managing medical officers of asylums for the insane should be the highest style of men morally, mentally and in medical acquirement, and the public should offer inducements to such men to take charge of its insane, and having secured such by liberal salaries, they should endeavor to keep them in their exalted and onerous positions, by a liberal share of encouraging confidence. The fidelity to the true interests of the insane as displayed by most of the medical officers with whose work and institutions we are familiar, and we personally know the most of them in the U. S. and Canadas, does not justify the measure of public suspicion displayed too often towards the management of these institutions by the public press.

An asylum for the insane should have more safeguards against a fire than a powder magazine.

[As we conclude the writing of this, the news comes to us of the burning of a portion of the Yankton (Da.) Asylum, and the burning of three inmates; fire caused by a lunatic.]

The Rectum.—*The Medical Age* thus facetiously discusses this "chief end of man," and we may now expect this classic and ancient organ which is with us from the beginning to the end of life, to become like its next door neighbor, the now waning vagina, the repository of many inventions—the tool box of medico-mechanical genius. We may now expect to see classic medical literature teem with terms to designate instru-

ments for ante, post and lateral flexions, and yet unnamed abnormal deviations and flexions, contractions, and dilations, hypertrophies and atrophies, etc.:

"We are glad to see a more or less general disposition to give that patient and long suffering organ, the uterus, a much-needed rest. Attention of late seems concentrating on its next-door neighbor, the rectum.

"Many of our exchanges are devoting a large amount of space to a discussion of rectal diseases and normal and abnormal rectal conditions. Rectal reflexes have all of a sudden been found to be of almost universal prevalence. If a lawyer gets the heartburn, or a minister weakens in the preparation of his Sunday sermon, the probability is that there is something wrong with his rectum.

"A late number of one of our exchanges contained four articles by as many different writers, besides an editorial, all calling attention to the rectum; and then it was plain to be seen that only the vestibule of the subject had been entered, as it were. A prominent surgeon of this city has not only *fringed* it, but *pocketed* it, and in his enthusiasm he seems to be conscienceless, and to want to walk off with the universal rectum without a show of compunction.

"Whether the rectum will stand as much steady and unremitting abuse as the uterus has done, in the last fifty years, is a question.

"It bids fair, however, to be a bigger bonanza to the doctors than ever the womb has been. It appertains to both sexes and all ages. From the great-grandfather to the neonatus, the rectum offers itself for inspection and treatment. And the beauty of it is, it suits all tastes in its tolerance of attention. The surgeon can cut it, tear it, cauterize it; blister and burn it; he can expand it, contract it, pinch it and pucker it; plug it and unplug it. The barber can barber it; the leecher can leech it; even the midwife can anoint it, syringe it and empty it.

"The doctor can doctor it in any way he pleases. It takes big doses with composure and little doses with a quick response.

"It is susceptible of medication both directly and indirectly, and it is a portion of the economy so universally necessary to the comfort, health and life of every single member of the human family, that in its possibilities there is, so to speak, no end to it.

"However it may be treated, whether by expert or

neophite, it is senseless, earless, eyeless. However much the viscus may be damaged, in the course of its experiences, its hapless owner can't see it and be a reliable witness to malpractice in a court of justice. He can't by sight count its scars, measure in inches the depth of his sphinctral misery. Any error in diagnosis or failure in treatment, while necessarily fundamental and possibly serious in its consequences, is easily covered up, for, with a little alum or tannin properly applied, so far as giving anything away is concerned, the rectum may be rendered as "tight as a drum."

"The failure, should it occur, may be attributed to a "cold," or some indiscretion in diet, or to atmospheric or telluric disturbances, to all of which the rectum is highly sensitive.

"A sudden and unforeseen onset of microbes may upset the calculations and predictions of the most skillful and astute physician and render negative his best endeavors.

"To the coming doctor the rectum presents an opening compared to which a malposed womb or dislocated ovary is nothing worth a thought.

"In a word, the womb of the future is pregnant with golden possibilities regarding the rectum."

Conditions Under Which Large Doses of Strychnia may be Given.—At the last meeting of the *American Neurological Society* the use of large doses, one-tenth or more of strychnia, as advocated by Dr. J. S. Jewell, for myelitis, became again the subject of discussion in connection with Dr. L. C. Gray's paper on "Strychnia in Nervous Diseases."

The paper elicited from Dr. Seguin the suggestive explanation that "the reason why no unpleasant effects were produced by the large doses was because the patients had no centrifugal matter with which to respond," as all of Dr. Jewell's cases were old cases of myelitis.

The *rationale* of immunity in disease from the effects of quantities of medicines, which in physiological states of the nervous system are toxic, in all probability, consists in central non-impressibility due to morbid changes. This explanation in regard to the tolerance of strychnia in spinal myelitis is undoubtedly a good one, but a different explanation would have to be invoked for the enormous tolerance of twelve grains of strychnia in twenty-three hours by a delirium tremens patient reported by Dr. Lardier, in the *Journal de Medicine*, of last June, a full account of

which, under the misleading caption "Strychnia as a Specific for Acute Alcoholism," may be found in that excellent therapeutic repository, the *Therapeutic Gazette*, for August; the same explanation that makes the poison of the *cobra*, or the *crotulus* ineffective in a saturated drunken man, and internal therapeusis of little avail in the collapse of cholera. The congestive pressure upon the cord and apathy to all peripheral or central impression explains the harmlessness of spinal poisons under these circumstances.

During the first few days of treatment, Dr. Lardier "gave five millegrams of strychnia every two hours, but at the end of three days no therapeutical effect having been obtained, the number of pills was increased and a hypodermic injection given, so as to increase the amount taken in less than one day, up to the enormous quantity of twelve grains."

A similar experience, though not quite so enormous, under certain pathological states of the cerebro-spinal centers, is constantly realized in practice in the administration of those substances which are especially toxic to the spinal or cerebro-spinal centers, such as conium and chloral in grave convulsive disorders and in epileptic insanity, and the other violent forms of mania with great motor as well as psychical agitation.

It is not unusual for cases of delirium tremens to commence to improve, as Lardier's case did, at the end of four days on capsicum and nourishing and stimulating draughts of milk and beef-tea. His patient got well in spite of the strychnia, and it is probable, that so far as the sensibility of the patient's organism was concerned, the most of the strychnia would have been as toxic and therapeutic in its effects if poured in a rat hole. Such cases are good to show the tolerance of large doses of strychnia under certain circumstances, but they teach nothing as to the curative powers of large doses, and unless taken under due consideration, might lead to reckless and unsafe prescribing.

There are conditions of the cerebro-spinal centers which tolerate and much better justify large doses of potassium iodide, and the same conditions suggest and demand diminishing doses as improvement becomes markedly apparent.

The Abuse of Massage.--The true therapeutic criterion for the employment of massage, manual or

mechanical, is the necessity for exercise. To exercise a part or the whole body when it does not need it is abuse. To exercise the whole body when only a part needs exercise, and the remainder of the body requires a rest, is damaging in conditions of central neurotrophia, or in states of abnormal central excitation.

Massage is a peripheral stimulation, and it is obvious that the time and circumstances demanding its use are questions of grave importance in neuropathic and morbid vascular conditions of the cerebro-spinal axis and ganglionic system, as the mistakes of masseurs upon patients who frequently come to us, after undergoing this exhausting process of exercise, often demonstrate.

There are many central neuropathic states in which peripheral inertia is the essential preliminary to any successful therapy, especially conditions of spinal hyperæmia and its sequency, anterio-lateral sclerosis, posterior spinal sclerosis, etc. These violent peripheral frictions and concussions augment the abnormal central activities, and more of these cases than of any other kind have come to us aggravated by their experience with mechanical massage, while a gentle and judiciously regulated rubbing or "palm" stroking of the muscles, while the patient is for a short time in the hot bath, before retiring at night, has proven beneficial.

The average "doctor" who runs a "mechanical and massage institute" with gymnastic adjuvants and static machines and galvanic batteries, which he uses in a routine manner, dosing his treatment pretty much according to the caprice of the patient, is not a safe therapist to prescribe and employ these potent agencies for good or evil in neurological cases, yet this is what many of these massage managers do.

Massage, like medicine, should only be taken as directed, and should only be directed by a competent physician. The physician who leaves his patient solely at the discretion of a masseur, or blindly turns his patient over to a masseur, is not prescribing massage aright, unless his patient only requires an indefinite amount of physical exercise and cannot be easily harmed by it.

Massage is a medicine, and like every other medicine should be prescribed on a basis of pathological and of diagnostic knowledge and therapeutic skill. Its dosage, like the dosage of electricity, should be a definite and intelligently prescribed quantity.

The habit of turning chronic cases (like superannuated horses out to graze) over to the masseur, the magnetic healer, the faith doctor or the Turkish bath man, instead of defining how much of these "luxuries" the patient ought to indulge in, and studying the case further, and aiding the patient to use these things in an enlightened and beneficial manner, is a reproach to regular medicine, and unjust to the victims of disease.

Repeated Self-Inflicted Injuries to the Head.

—In the *Lyon Medical* of June 28, 1885, is a review of an interesting case of self-inflicted blows upon the head, causing death as the result of secondary inflammation.

The case is presented by Rudolph Franck, demonstrator in the Medico-Legal Institute of Prof. Hoffmann at Vienna. A woman, aged 64 years, was admitted to the hospital with a wound in the head. She said to the physician in charge that she had made this wound herself, with the aid of a hatchet. She died six days after her admission without having presented any cerebral phenomena.

The autopsy revealed that she had died from a purulent meningitis. The wound extended from the root of the nose to within two centimetres of the coronal suture, the frontal bone being fractured. Fragments of bone had penetrated between the borders of the fissure.

From the direction of the incisions of which there were at least two, it was evident that more than one blow had been struck from before backwards by the woman herself, with a sharp heavy instrument, probably a hatchet as she said.

Such instances of energetic efforts at self-destruction are rare, though they have been observed and recorded in a number of instances, and the editor of the *Lyon Medical* recalls the case of a patient whom he saw in Algiers in 1879, who had made a crucial incision with a knife in the scalp in the right parietal region, and having exposed the bone, with the aid of a stone, wore it away, making an opening so large that at the bottom one could see the dura mater exposed.

The writer of this has now under his care a German woman who wears upon her forehead a complicated scar, the remains of a number of cuts she had made with a hatchet, in an effort to end her misery. Fortunately she did not possess the firmness of purpose of her compatriot, and inflicted only superficial wounds which quickly healed,

and with improved surroundings, the inclination to inflict injury upon herself seems to have ceased, for the present at least.

Who Owns the Physician's Prescriptions?

Is a question which has often been asked and been differently decided by individuals and courts.

But it can be finally and effectually decided by the original owner in his own way. If a patient will not accept, and druggists will not fill prescriptions as memoranda directions (which they simply are), to give a prescribed quantity and number of doses of a certain drug or compound, with certain written directions, then let the rightful owner of the knowledge and advice refrain from putting these things on paper, or not put them in the hands of such persons as will not receive them as he desires they should be accepted, and instead, give the medicine in kind, until courts, apothecaries and people come to their senses and respect the rights of physicians.

There need, however, be no trouble on this subject. It is for physicians themselves to define the nature of a prescription, and determine whether in making a memorandum of their remedial directions for the benefit of a particular person, for a particular time, they intend an indefinite use of the remedy for an unlimited time, by any number of persons, for any and all purposes, in the discretion of the direct recipient, the patient or the indirect dispensing agent—the druggist. The courts will decide this question according to usage, and it is time for the profession to definitely determine upon what usage their decisions shall be based. There need be no war between druggist and physician as to who owns the prescriptions. The physician owns the knowledge which it represents, and it is only the written memorandum he gives the recipient, in order that that knowledge may be specially applied in a certain case to a certain limited extent. If the physician's own druggist were in speaking distance, he might orally dictate the directions he commits to paper.

If this view will not be held by courts, let physicians have their formula prepared for them by men like the wholesale manufacturing druggists, and do their own dispensing.

A Suggestion.—There are about three thousand, five

hundred deaths occurring annually in the asylums represented in the Association of Medical Superintendents of American Asylums for the Insane. It may be assumed that one-third of this number are examined post-mortem, or are available for autopsies. If these examinations were made uniformly and recorded in conformity with some method to be agreed upon in the Association, and the records, with a clinical abstract of the cases, copied by printing or some other means of reproduction for exchange between the members of the Association, it would place within the reach of the members and their assistants a medium profitable for study. A mass of facts lie slumbering in the case-books of insane asylums that are available to but few persons, and frequently to those who are not imbued with the spirit of research. In reported cases with autopsies the results are generally positive. Negative cases are not reported. The value of the latter in the study of correlative symptomatical phenomena and pathological changes is as great as the former. It is the accumulation of palpable facts that displaces hypothesis with definite scientific truths.

The interchange of clinical and pathological data between the asylums might be a proper subject for the consideration of a committee, to be reported and discussed at the session of 1886.

The Reign of the Neural Pathology.—As an evidence of the part which neuropathology plays in disease and the growing recognition of the views enunciated when, six years ago, this Journal was founded and a hundred years ago by Cullen, broadly intimated as well as in recognition and appreciation of the industry and discernment of Dr. Alexander Duane, of New York, we give place elsewhere to the major part of his report on the progress of medicine, which appears in the *New York Medical Journal* for August 8th. Seven of the ten subjects discussed being a recognition of the progress of neural pathology.

Verily the time is coming, and now is, for the fulfillment of our prophecy that "the neural pathology is destined to reign in medical thought and supplement where it does not supplant the vascular, in explanation of the phenomena of disease" (vide *ALIENIST AND NEUROLOGIST*, Vol. II, page 425). The remaining three of the ten subjects discussed by Dr. Duane, under the head of *Progress in General Medicine*, are the Virulence of Tuberculosis

Matter, Pernicious Anæmia in Children, the Relations of Scrofula and Tuberculosis.

Stronger Solutions of Cocaine—The stereotyped four per cent. solutions of cocaine are disappointing. They are useful mainly in operations on the eye. In great hyperæsthesia or where great pain is to be overcome in cutaneous or mucous surfaces, a ten per cent. solution or even a solution to saturation is preferable, and cocaine ought not to be condemned unless these strong solutions fail.

In a case of general hyperæsthesia of the dental nerves associated with head trouble, we recently made repeated applications of five grains to a drachm of McKesson's and Robbin's, being an eight and a half per cent. solution, without producing the relief which had been previously and was subsequently obtained by galvanism.

The Third Annual Meeting of the American Rhinological Association was held at Lexington, Ky., October 6th, 1885. Papers and discussions were devoted exclusively to the diseases of the nasal passages and their sequences. Officers for 1885. *President*, P. W. Logan, M. D., Knoxville, Tenn.; *1st. President*, A. DeVilbiss, M. D., Toledo, Ohio; *2nd Vice President*, J. A. Stucky, M. D., Lexington, Ky.; *Recording Secretary*, C. A. Sims, M. D., St. Joseph, Mo.; *Librarian*, N. R. Gordon, M. D., Springfield, Ill. Council, J. G. Carpenter, M. D., Stanford, Ky.; H. Jerard, M. D., East Lynne, Mo.; H. Christopher, M. D., St. Joseph, Mo.; E. F. Henderson, M. D., Los Angeles, Cal.

Causes of Insanity.—The leading editorial of the *Medical and Surgical Reporter* for October 3rd discusses this subject in a manner suitable to the pages of a psychiatric journal.

It gives us pleasure to note the popular medical interest in neurology and psychiatry which is being more and more displayed in the contents of the general medical press. Yellowlee's views, however, are open to criticism with reference to the part played by cerebral concussions preceding later attacks of insanity and other brain affections. Blows and falls upon the head are a most frequent predisposing, as they are a not uncommon, determining cause of grave cerebral diseases.

The Rumford Chemical Works, Providence, R. I.,

manufacturers of Prof. Horsford's Acid Phosphate, have recently purchased a commodious building and warehouse near their present location, where they propose to move their business a few months hence. This purchase has been necessitated by the demands of their large and increasing business.

The Edinburgh Medical Journal announces some neuropathical studies (three articles), by James Crichton Browne, M.D., LL.D., F.R.S., one of the Lord Chancellor's visitors in lunacy during the coming year.

Errata.—In Dr. Spitzka's article published in last number, read on page 396, line 2, "*paretic dementia*" for "pathetic dementia," and on page 409, line 8, "*cursorial*," for "sensorial."

Prof. Berger, the neurologist of Breslau, is dead.

HOSPITAL NOTES.

DR. FISHER, superintendent of the South Boston Lunatic Hospital, has this year given clinical instruction to a class of fourth-year Harvard medical students during the months of January, February, March and April. These clinics in mental disease are a new departure in this country we believe, and have so far proved useful to the hospital staff and the students, and not harmful or distasteful to the patients, as conducted. A proper selection of cases and a proper manner of treating those selected remove all objection to the clinical study of insanity. It is not the custom to take a large class of curious students into the wards, but to introduce patients singly to a small class of advanced students in the reception-room. Many patients are willing and even pleased to have their cases examined thoroughly.

The scientific investigation of insanity is as much a duty on the part of insane hospitals as the investigation of ordinary disease is the duty of general hospitals. It benefits alike the medical profession, the patients and the public. As a still further attempt to improve the administration of the hospital, practical lectures have been given regularly through the winter to all the attendants upon their duties as nurses and attendants of the insane. The superintendent opened the course with a lecture on the "Management of the Insane," and closed it with one on "Mental Hygiene." Drs. Boland and Lane have alternated each week with lectures, given first to one-half the attendants and immediately repeated to the other half, on the following subjects: "Ventilation and Heating," "Outlines of Anatomy," "Attendants' Work," "Administration of Medicines," "Food," "Sick Diet," "Bandaging and Surgical Dressings," "Patients' Clothing," "New Patients," "The Skin and Bathing," "Visiting," "Exercise and Amusements," "Bed Sores and other Nursing Details," "Catheterization." They are entitled to much credit for the extra labor involved in this course of systemic instruction of attendants, which is the first, as far as we know, ever given in this country.

Dr. Cowles, of the McLean Asylum, has this spring carried out a plan, for some time in contemplation, of establishing a training school for attendants on the insane.

His experience at the City Hospital well fits him for carrying out a similar plan at the McLean Asylum. It may be feasible to employ in public hospitals supervisors and head attendants from such a training school at somewhat higher wages than are now paid. It is very certain that the treatment of insanity in hospitals is destined to become more and more intelligent as the principles on which it is based are better understood. This improvement will be in a direction parallel with the advance in cerebral physiology and pathology and our knowledge of the intercurrent diseases of the insane. The following is also from his report in comment to certain city guardians of the insane.

A hospital for the insane should provide ample opportunities for out door employment. It should furnish an attractive and agreeable home, disassociated in the minds of patients and the public from all classes whose dependent condition is the result of their own vices or crimes. The great affliction of insanity ought to condone for all former errors of life, if any such have had a causative influence, and produce, as it does, a democracy in misfortune, where all are alike deserving of the kindest possible treatment.

Incapacity for self-support on the part of the insane does not make paupers of them in any offensive sense, nor in any ordinary sense, and should not be made an excuse for treating them in the same manner.

DR. FLOYD S. CREGO, who for several years has filled the position of second assistant physician at the Buffalo State Insane Asylum, has resigned that position with a view to a permanent settlement in Buffalo for the practice of medicine. The Asylum loses, in the retirement of this accomplished and talented official, the services of an experienced medical attendant, who has combined with superior natural gifts the advantages of broad intellectual and professional culture.—*Buffalo Medical and Surgical Journal*.

DR. P. O. HOOPER, of Little Rock, Ark., has been appointed superintendent of the insane asylum of that State, to fill the place of Dr. C. C. Forbes, who on account of ill health has resigned and located at Wellington, Kansas.

DR. C. C. FORBES goes to his new field of labor with the best wishes of hosts of Arkansas friends, and the highest encomium for fidelity and capacity from trustees of the Little Rock Hospital.

REVIEWS, BOOK NOTICES, &C.

INSANITY AS A PLEA FOR DIVORCE OR NULLITY. By Geo. H. Savage
M. D., Medical Supt. of Bethlehem Hospital, London Read before
the Medico-Legal Society of New York, June 17th, 1885.

An interesting and valuable essay in full accord with the author's well-known capacity and experience on the above subject.

Marriage being a contract in flesh and blood, he said, has to be considered somewhat differently from more ordinary contracts. As to the propriety of divorce in cases in which one of the parties has become insane, he thinks, insanity ought not to be accepted as a plea for divorce, when the insanity has developed after the marriage contract. One of the foundations of the marriage contract is that it is for "better or for worse." It would be as reasonable to expect a divorce from the heiress whose trustees have made away with her fortune, as to expect one from the woman who has become insane.

Doubtless there are often hardships resulting from the marriage contract; the beautiful girl may become the ugly matron; the sweet girl of seventeen may be a virago at forty, and both these changes may be more or less the result of physical disorder or disease.

Other changes of a physical or intellectual nature may, equally with insanity, unfit the wife to be the helpmate to her husband, yet no one would seriously suggest that divorce should be allowed in cases of cancer or of paralysis, of plethora or bad temper.

The author sees no chance of freeing, with safety to society, the partner with an insane companion from his contract. For, in the first place, this could not be done, unless the patient were adjudged incurable. And few men of experience would dare to give an opinion of absolute incurability, except in cases in which death would soon give the divorce. The older he grows, and the more cases he sees, the less dogmatic he becomes in giving absolute opinions of incurability of insanity, as seen coming on in young or middle life.

The author has seen cases recover and remain well after being insane for over twenty years. The intellectual second summer has arisen when perpetual winter was to have been expected.

He would give an opinion as to the absolute incurability of a case—only "when general paralysis, senile dementia and idiocy were present, even epilepsy may pass off, in time."

As to the divorce from a partner who was insane at the time of marriage, such marriage should be considered null and void.

With all the author's experience, he leans a little too much to the sentimental side of this question. The perpetuation of the insane diathesis is too serious a matter to be fostered by sentiment. A sane young person allied for life to an insane partner, whose insanity he or she never suspected, and who is destined to be the mother or father of a hoard of

neuropaths, fatally endowed psychopathic children, commands not only our sympathy, but demands some sort of legal protection. The law might and ought in many obvious cases to accord maintenance to the afflicted one, but it as obviously ought not to enjoin or allow conjugal rights.

The question, in the present state of general knowledge on the subject is a perplexing one, and will not be justly solved to individuals and communities, until distinctions between transmissible and not inheritable forms of insanity are publicly appreciated, and the right to quarantine against psychical disease is as thoroughly understood and acknowledged and accorded the state as the right to protect communities against the spread of physically infectious diseases, is now conceded. If the child may be taken from its unwilling mother's breast, and subjected to compulsory vaccination, there is a period in conjugal life when a matrimonial misalliance ought, for the good of posterity, to be abrogated.

The author concedes that some marriage contracts should be annulled on the ground of insanity, especially where concealment of the family taint has been practiced.

There are others, however, which for lack of time we cannot here indicate.

It is evident that the time must sooner or later come when a marriage contract, which cannot be carried out with safety to the community or justice to posterity, must be made the subject of legal restrictions and limitations. It would be better for the state and race, if certain neuropaths were compelled to live without connubial happiness and without issue, than for law to sentimentally encourage the population of the earth with prospective insane citizens.

The author puts this aspect of the question, as follows: "A woman subject to recurring attacks of insanity may marry during one of the periods of health."

"This last supposition is not fanciful, for I know several girls, now chronic lunatics, who between attacks of insanity married.

Moreover, many of the more unstable, neurotic girls, belonging to this class, are brilliant and attractive.

Surely, in such cases as those just referred to, it would be very unjust to compel a man to keep to his bargain, if he married ignorant of the fact that his wife was subject to hidden delusions, or to recurring attacks of acute insanity. If the above is admitted, another question arises, which, though nearly allied, is very different in its bearing. If divorce should be obtained from a woman who was married in one of the periods of rest or health, between periods of mental disorder, these alternating periods being shown to be part and parcel of the same diseased process, then why should divorce not be allowed (and such cases are by no means rare), where persons have had several attacks of insanity, from which they have recovered, but which have left them more liable to recurrences? Why should not divorce be permitted when one of the contracting parties has concealed the fact that there have been previous attacks of insanity of a kind likely to recur?"

"In some cases epilepsy ought to be a ground for divorce. Epilepsy may be marked, or the fits and temporary mental perversion may occur

only at night, and thus the contracting parties may be both ignorant of the real danger to themselves and to any possible offspring. A French lady consulted me about her second husband, who was suffering from general paralysis of the insane, and she told me that on the night of her first marriage her husband was seized with a severe epileptic fit, before the marriage was consummated, and on awaking from the fit became maniacal and attempted to strangle her. She separated from her husband, who died five years later in an asylum."

THE NOVEMBER CENTURY.—

The initial number of the new CENTURY year, beginning the Thirty-first Volume of the magazine, contains "A Cloud on the Mountain," by Mrs. Mary Hallock Foote; it is a stirring romance of Idaho ranch life; a full-page drawing by the author to illustrate the story is the frontispiece of the number and is engraved by Mr. T. Cole, who is now working in Italy for the CENTURY; "A Story of Seven Devils" is one of Mr. Stockton's characteristic tales of humor and ingenuity; and "The Mystery of Wilhelm Rütter" by the late Helen Jackson (H. H.), is a tragic romance, the scene of which is laid among the Pennsylvania Dutch. Mr. James's "Bostonians" is continued. The new serial is Mrs. Foote's mining story, "John Bodewin's Testimony," the opening chapters of which give promise of a novel surpassing in interest the same writer's romance of "The Led-Horse Claim."

Edward L. Wilson contributes a narrative entitled "A Photographer's Visit," of his daring journey to the decayed city of Petra, and of his adventures with the Arabs, and Thomas W. Ludlow introduces the paper with a short historical account. Edmund Gosse contributes a second illustrated paper on "Living English Sculptors," his first article on the subject having appeared in THE CENTURY for June, 1883. Several fine illustrations accompany the paper on "Setters," in the "Typical Dogs" series, there being in this number six short articles by as many writers.

General Grant's paper describing the campaign and battle of "Chattanooga" is a feature of the number which will excite world-wide interest. It is, perhaps, the most finished article by him which THE CENTURY has thus far published. With it is given a full-page portrait of General Grant, from a photograph taken at Mount McGregor; and two fac-simile pages of a part of one of his letters to Dr. Douglas. In "Memoranda of the Civil War" General William F. Smith has a short article entitled "Was Chattanooga Fought as Planned?"

The Autograph Letter of General Grant to Dr. Douglas is of especial interest to physicians.

A discussion of the question of possible unification of American Churches is begun in this number by the Rev. Dr. Charles W. Shields, Professor of the Harmony of Science and Revealed Religion, at Princeton. Representative men in the different denominations will continue the discussion.

Dr. Lyman Abbott contributes a striking essay entitled "Danger Ahead." "The Chatauqua Literary and Scientific Circle," and other questions of interest are discussed.

The poems of the number are by Helen Jackson (H. H.), Arthur Platt,

Emma Lazarus, R. U. Johnson, Edith M. Thomas, Margaret J. Preston, Stuart Sterne; and in "Bric-à-Brac" by Frank D. Sherman, Jennie E. T. Dove, Margaret Vandegrift and J. A. Macon.

BRAIN EXHAUSTION, WITH SOME PRELIMINARY CONSIDERATIONS ON CEREBRAL DYNAMICS. By J. Leonard Corning, M. D., New York: D. Appleton & Co. Crown, \$8.00, XVIII., pp. 234.

As the author remarks in his preface, "an incredible amount of labor has already been bestowed upon the fundamental and minute questions of muscular dynamics," but the problems involved in cerebral metamorphosis have received, relatively speaking, but slight attention. "This is signally true, so far as general medical thought is concerned. The demands upon the thinking apparatus have never been greater than at present; but at the same time, the factors which exert a prejudicial influence upon the cerebral mechanism have never been more numerous." These are certainly assertions in strict accord with recent statistics; and this fact forms substantial justification for the existence of a volume like this, which deals with the problem in the spirit of true scientific analysis.

The introductory chapter deals with the literature of the subject, and is both historical and critical. It is clear, from a perusal of these preliminary pages, that the author is bent upon writing out full credit to his predecessors in this field of work. His criticism upon the writings of the late Dr. Beard is both discriminating and just, and will go far towards removing any prejudice which may have been previously entertained by the reader against that gentleman.

In chapter first, the exigencies of cerebral function are brought into juxtaposition with the demands of the highest scientific generalization; and while the practical *raison d'être* of this portion of the book may not be apparent at first sight, it certainly proves perspicuity and breadth of vision on the part of the author.

Chapters three and four deal with aberrations of memory, and various morbid emotional manifestations.

The second portion of the work is devoted to purely clinical and pathological considerations; and here we find much to commend in the way of classification of symptoms and pathological analysis.

In the third part of the book, causation and prophylaxis receive exhaustive handling, and the chapter on "Mental Hygienics" should be read by those whose interests entail a careful hoarding and equally circumspect expenditure of cerebral energy.

The fourth and last portion of the work is devoted to considerations on treatment, and is indicative alike of sound physiological conceptions and practical sense. The chapter on "Rest" is especially applicable. As is well known, the author of this treatise is the advocate of prolonged sleep and overfeeding in the treatment of a variety of exhaustive cerebral conditions. On this point he says: "Brain Exhaustion being that condition in which the cerebral cell is no longer able to hoard up the necessary amount of explosive energy—a state of things in which the mechanism of supply has become more or less defective—the problem presented for solution is how best to bring the supply of brain energy up to the normal standard. The prime requisite for the accomplishment of

this end is to decrease for a time the expenditure of cerebral force to a minimum, and thereby render a gradual accumulation of brain energy possible.

"By prolonged sleep it is possible for the ganglia to hoard up, in spite of the defective mechanism of supply, an amount of energy proportionate to the temporarily reduced output of brain-force. Thus by slow degrees the proper correlation between integration and disintegration may be re-established. It is useless, however, to hope for such a fortunate result at once, as, when the morbid nutritive conditions have once become established, nothing short of prolonged rest can by any possibility result in the re-establishment of the normal nutritive processes of the cell economy.

"The principles of the method by which I seek to fulfill what had been to me the three great requisites in the treatment of this class of cases are as follows: (1) cerebral rest; (2) increased general and cerebral nutrition; (3) elimination of psychical irritation.

"The patient is excluded in a darkened room from ten to fifteen hours at a time, according to the amount of sleep which it is desired shall be had during the twenty-four hours.

"The amount of sleep is progressively increased by habit, moderate medication and hydrotherapy; but no attempt is made to suddenly increase the duration of the period of unconsciousness by the reckless employment of sedatives.

When the patient awakes, which is usually the case, two or even three times during the hours set apart for rest, nourishment is administered, but always in a fluid and easily digested form. Where difficulty is experienced in again falling asleep, resort is had in the beginning to limited medication. The few hours of wakefulness are devoted to some form of amusement; reading, writing, and even the mildest forms of mental concentration are absolutely prohibited."

This, in brief, is the method from which the author has already seen most happy results.

We need hardly add that physicians, both as a class and as individuals, will derive practical benefit from reading Dr. Corning's work.

LECTURES ON THE DISEASES OF THE BRAIN, delivered at University College Hospital. By W. R. Gowers, M. D., F. R. C. P., Assistant Professor of Clinical Medicine in the University and Physician to the Hospital and to the National Home for the Paralyzed and Epileptic. Published by P. Blakiston, Son & Co., 1012 Walnut Street, Philadelphia, 1885.

This is the title of a valuable contribution to the subject upon which it treats by a lecturer and writer, already well-known to the profession through his previous contributions to neuropathology and the clinical study of the nervous system.

The author's "Diagnosis of Diseases of the Spinal Cord; Epilepsy and Other Chronic Convulsive Affections; Manual of Ophthalmoscopy; Pseudo-Hypertrophic Muscular Paralysis," and other similar contributions to advanced neurological literature have been received with such favor as to have caused a demand, and request for a book similar in scope and method to "diseases of the spinal cord," and with this request and

demand, the author has most satisfactorily complied in the valuable treatise before us.

The excellent diagnostic features of the book please the earnest clinician in every page, and the reader feels himself to be as he reads, ever present, not with special cases, but with morbid conditions, clearly mapped and marked out.

There is a refreshing novelty in the author's style, a spontaneity of expression that charms, and a display of familiarity with general diagnostic symptomatology that entertains and promptly rewards the reader for the time spent in reading the book. Many of those familiar illustrations, slightly modified from some distinguished predecessor's delineations, are missed from the book, but original diagrams appear in their stead.

The book would have been much enhanced in value if it had been further illustrated.

An illustration of the arterial distribution of the cerebral arteries, the precise points nourished by the anterior, middle and posterior cerebral and their ramifying branches, and by the circle of Willis proper, the central and cortical circulation, and the absence of anastomatic communication between them, would have been a valuable aid to an elucidation of the text of lecture third.

It is easier for the average reader to comprehend how softening may occur more readily in the cerebrum than in the cerebellum from an anatomical demonstration, than from a verbal description.

The readers of the *ALIENIST* will be gratified to find this author, whose experience has been limited with the insane, nevertheless recognizing and promulgating the fact that "neurotic heredity indicated by a history of such diseases as epilepsy, insanity, neuralgia, etc., is rather against, than in favor of organic disease of the brain." This is true, though not generally accepted as truth by the profession.

The author is an enthusiast for the diagnostic use of the ophthalmoscope, and urges the importance of acquiring dexterity in the use of the instruments as early as possible (in the student's career).

HYDROBROMATE OF HYOSCINE, ITS USES IN CASES OF INSANITY. By Frederick Peterson, M. D., and Charles H. Langdon, M. D., Assistant Physicians at the Hudson River State Hospital, N. Y.

This brochure is a record of the author's experience with thirty cases in the above institution. The following are the conclusions:

We had hoped to be able to add hyosine to our hypnotics, because its tastelessness would have made it especially valuable. That, however, is no virtue in the remedy, because of its uncertainty of action and the length of time it requires to produce sleep (sometimes one to two hours) when given by the mouth.

Hyosine is not, in our opinion, a real hypnotic, such as chloral, opium and the bromides, although it disposes to sleep by causing muscular relaxation and a feeling of weariness, and does, in large doses, produce stupor.

The sleep apparently caused by it is of short duration, and is easily broken.

We think it should never be given by the mouth with the view of producing sleep. We shall use it hereafter only hypodermically.

Its continued use is not advisable.

Constitutional effects appear in some cases sooner and more severely than in others.

The respirations are made shallower, but not diminished in number (any more than by natural sleep).

The pulse is often considerably reduced, sometimes increased in frequency, and usually made very variable. It may reduce or increase arterial tension. The face usually flushes, and the extremities become cold.

There is dilatation of the pupils and loss of accommodation. There is, further, dryness of the throat and mouth, dizziness, and in many cases, anorexia and nausea, in some cases vomiting and diarrhoea.

In a few cases there is sensation of heat and itching of the skin.

The severer effects are muscular tremor, unsteadiness of gait, delirium and stupor.

It seems in one or two cases to have increased erotism.

As to its use in insanity, we tested it chiefly, as before stated, in these cases for its value as a hypnotic. We think, as a rule, it increased excitement by continued use. It made our melancholiacs worse. It was no improvement in chronic mania, dementia and general paresis, on chloral and hyoseyamus. It was of no value in epilepsy, but may not have been continued sufficiently long. It may prove of value in some cases of acute mania if given subcutaneously; but we doubt if it will supersede hyoseyamine.

As to the relative merits of hyoscine, hydromate and hyoseyamine, and as to the comparative inefficacy and tardy action of doses by the mouth and skin, our experiences have been in substantial accord with those of the author.

A TREATISE ON NERVOUS DISEASES. By Sam'l G. Webber, M. D., Clinical Instructor on Nervous Diseases, Howard Medical School, etc., D. Appleton & Co., New York.

The book is designed as a text book for students and practitioners, and treats in a plain, intelligible manner, with a number of good anatomical, but no clinical or pathological illustrations, of most of the nervous diseases likely to fall under the eye and treatment of the general practitioner of medicine.

The author discusses under the toxic neurosis only lead, arsenic, alcohol and hydrophobia poisoning, and discusses them in a clear and concise manner, by making no reference to meconism, chloralism, and the more or less prolonged insanity of habitual ether taking.

The author's aim, in the book before us, seems rather to be concise and comprehensible, than to be voluminous and comprehensive.

The diseases of the brain are very well considered, likewise those of the anterior and posterior columns and horns of the cord, but those of the cerebellum are inadequately considered.

The book is well adapted to the use of students and young practitioners, and does not appall by a dazzling discussion of all the perplexing features in clinical neurology and differential diagnosis.

The author's reading has been extensive, as shown by the references

which head the chapters, still many excellent contributions to the literature have evidently not fallen under the author's eye. The book will serve to give the student courage to enter and explore the vast domain of neurology, for it makes the way plain and clear in the beginning, but it will not enlighten the advanced veteran in neurological exploration.

The author's views are in accord with advanced neurologists concerning the diagnostic value of the ophthalmoscope, and the therapeutic uses of electrizations.

The entire therapy of the book is judicious and not unjustifiably enthusiastic, its opinions as to pathology are expressed with caution, so that quite a large number of diseases appear under the head of unclassified, and its diagnostic precepts are conservatively and prudently expressed.

INEBRIISM. By Dr. T. L. Wright, of Bellefontaine, Ohio.

This is a valuable recent contribution to the study of organism in its relation to alcohol, and of alcohol to organism. Their reciprocal relations have been faithfully observed, and are well understood by the author, who has demonstrated his capacity and fitness to write such a book, by the contributions which have appeared at different times in *THE ALIENIST AND NEUROLOGIST*. His clinical observations are true to nature, and his conclusions are justified by the facts of science, thus far collected in this most interesting of medico-moral and medico-political subjects.

The book before us is only further confirmatory evidence of the author's capacity and reliability as an author on the absorbing question of inebriism.

The book will especially interest physicians, but, while it is scientific, it is not technical, and can be read with profit by the non-professional.

Every lawyer, every jurist, every divine, every philanthropist and every sanitarian ought to read this book.

The following is a brief analysis of the scope and style of the work, but the book must be read to be appreciated, as no bill of fare can be made to take the place of the real *menu* itself:

After the immediate personal effects of prolonged intoxication are described, the constitutional effects of confirmed alcoholism are taken up and explained. This points out modifications in the human constitution produced both by certain physical changes and by habitual repression of function. The disasters thence befalling human nature are freely described. These include heritages of physical imperfections, of intellectual obliquities, and of various sinister moral tendencies and unavoidable criminal proclivities. To all these are superadded the inherited woes belonging to the list of nervous diseases, as dipsomania, neuralgia, chorea, epilepsy, imbecility and insanity. The relationships of these, with each other, are shown; and the intimate kinship which all of them sustain to chronic alcoholism is clearly set forth.

Thomsen'sche Krankheit bei vier Geschwistern. Von Prof. A. Eulenburg (Berlin), und Dr. Melchert (Grabow i. M.)

Some Personal Observations of the Work of Lawson Tait, together with the report of five cases of abdominal section by the writer. By A.

Vander Veer, M. D., Prof. Surgery, Albany Medical College, Albany, N. Y. [Reprint.]

New Books.—Medical and scientific. A quarterly publication devoted to books, showing what they are, and where to get them. Published by H. H. Howe, M. D., Weston, Vt. 1885.

Ein Fall von Tabes Dorsalis Complicirt mit Progressiver Muskel-Atrophie. Von Prof. A. Eulenburg. (Vorgestellt in der Berl. med. Gesellschaft am 10. December, 1884.)

Ist ein Unmittelbarer Einfluss der Grosshirnrinde auf die Peripheren Gefässe Nachgewiesen? Vorgängige Mittheilung von Dr. R. W. Raudnitz. [Reprint.]

Ueber die Combination Angeborener Psychischer Schwächezustände mit Anderen Psychischen Krankheitsformen. Von Dr. A. Pick. [Reprint.]

Ueber Hallucinationen bei Centralen Defecten der Sinneswerkzeuge. Von Dr. Arnold Pick, in Dobrzan. [Reprint.]

Traacts on Massage. Translated from the German of Reibmayr, with notes. By Benjamin Lee, A.M., M.D., Ph.D.

Zur Reform der Oesterreichischen Irren-anstalts-statistik. Von Dr. A. Pick, Dobrzan. [Reprint.]

Ataxie. Von Dr. A. Pick, Director der Landes Irren-anstalt in Dobran bei Pilsen. [Reprint.]

Einige Bemerkungen zum Böhmischem Irrenwesen. Von A. Pick. [Reprint.]

Notiz zur Lehre von der Heredität. Von Dr. A. Pick, Dobrzan. [Reprint.]

Verhandlungen der Physiologischen Gesellschaft zu Berlin. [Reprint.]

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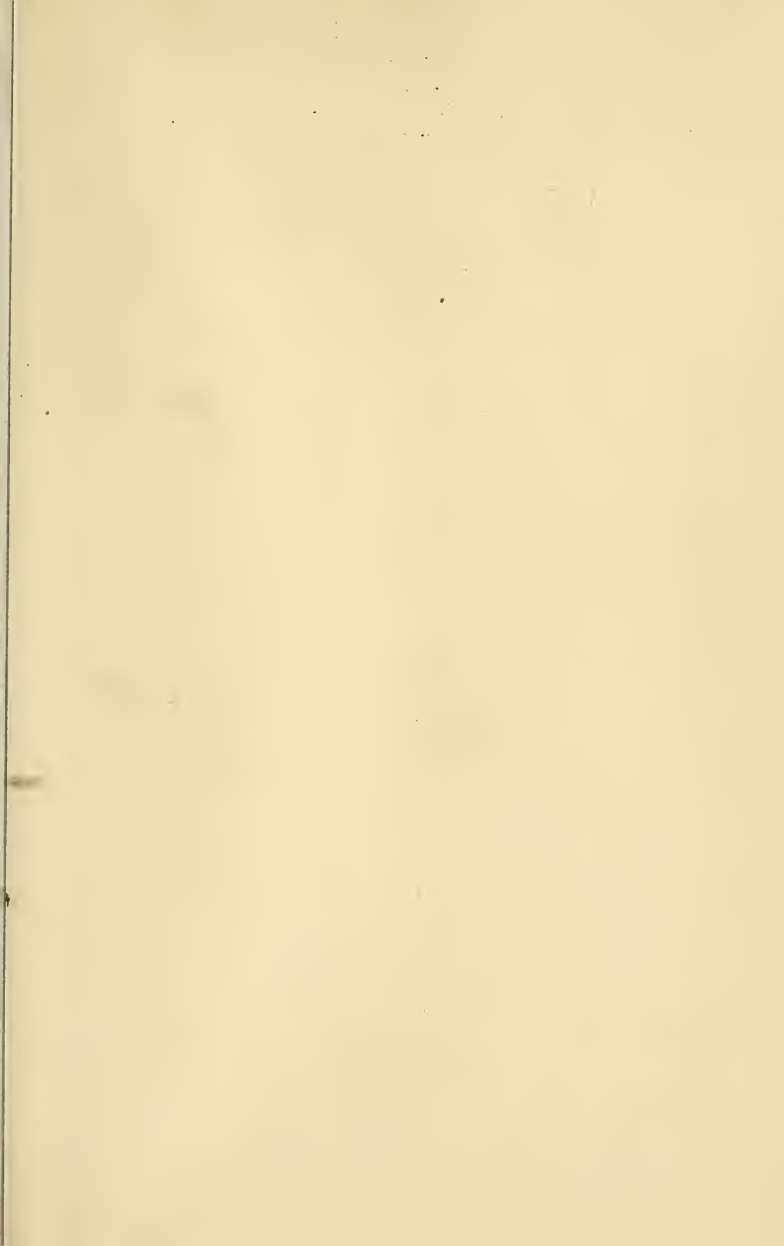
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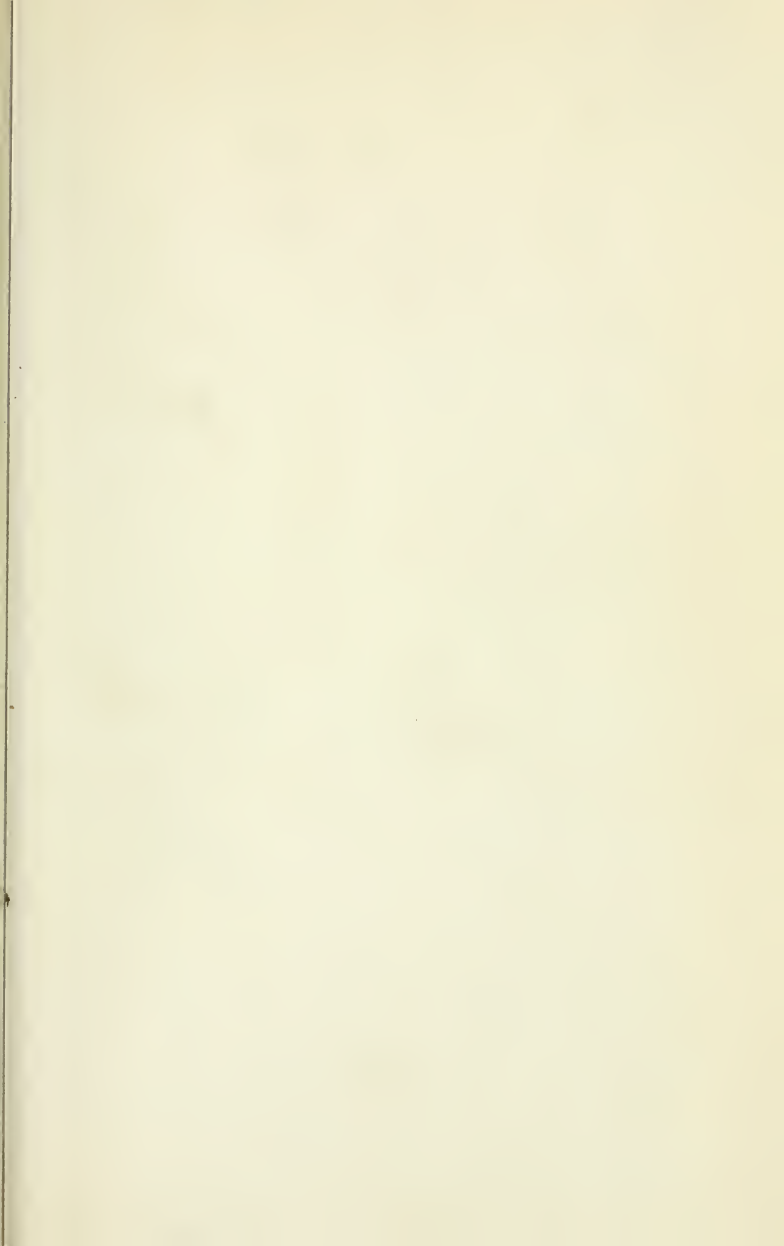
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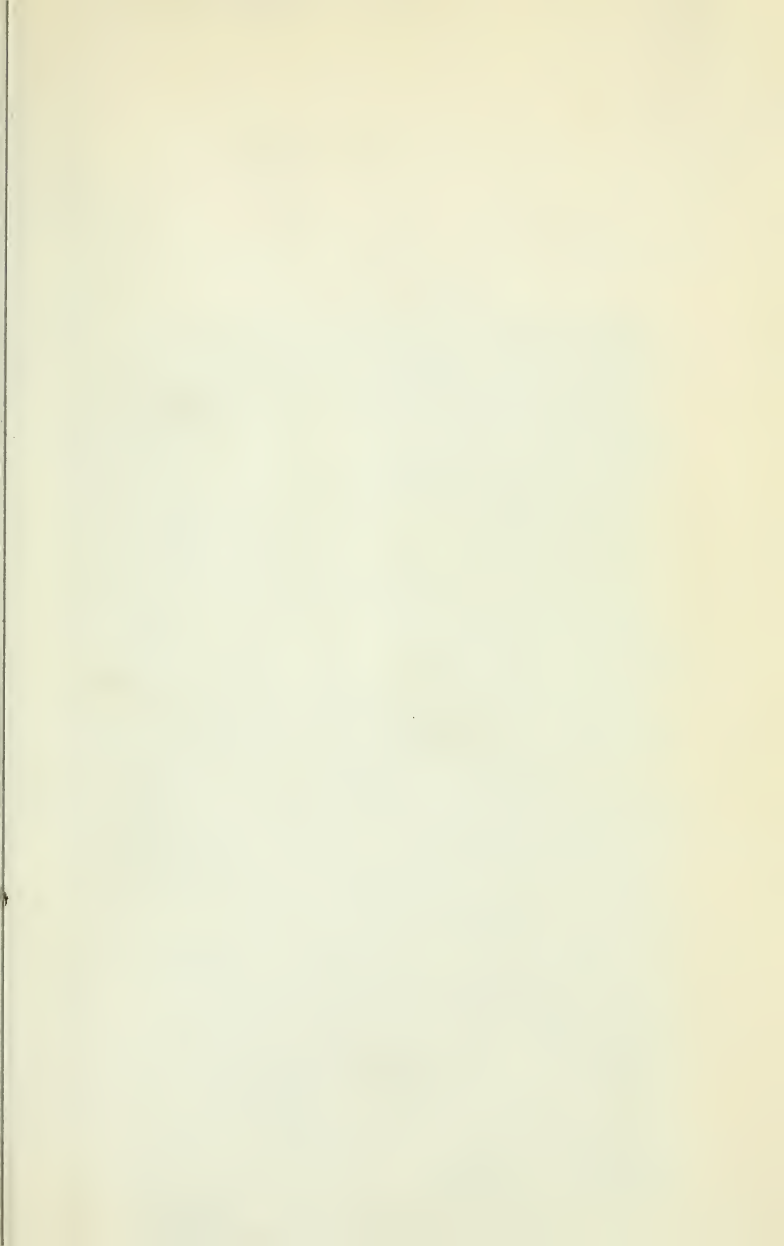
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