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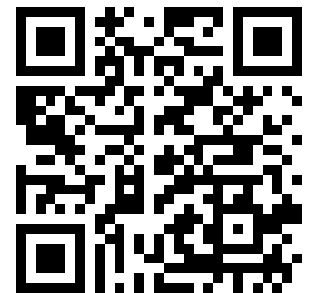
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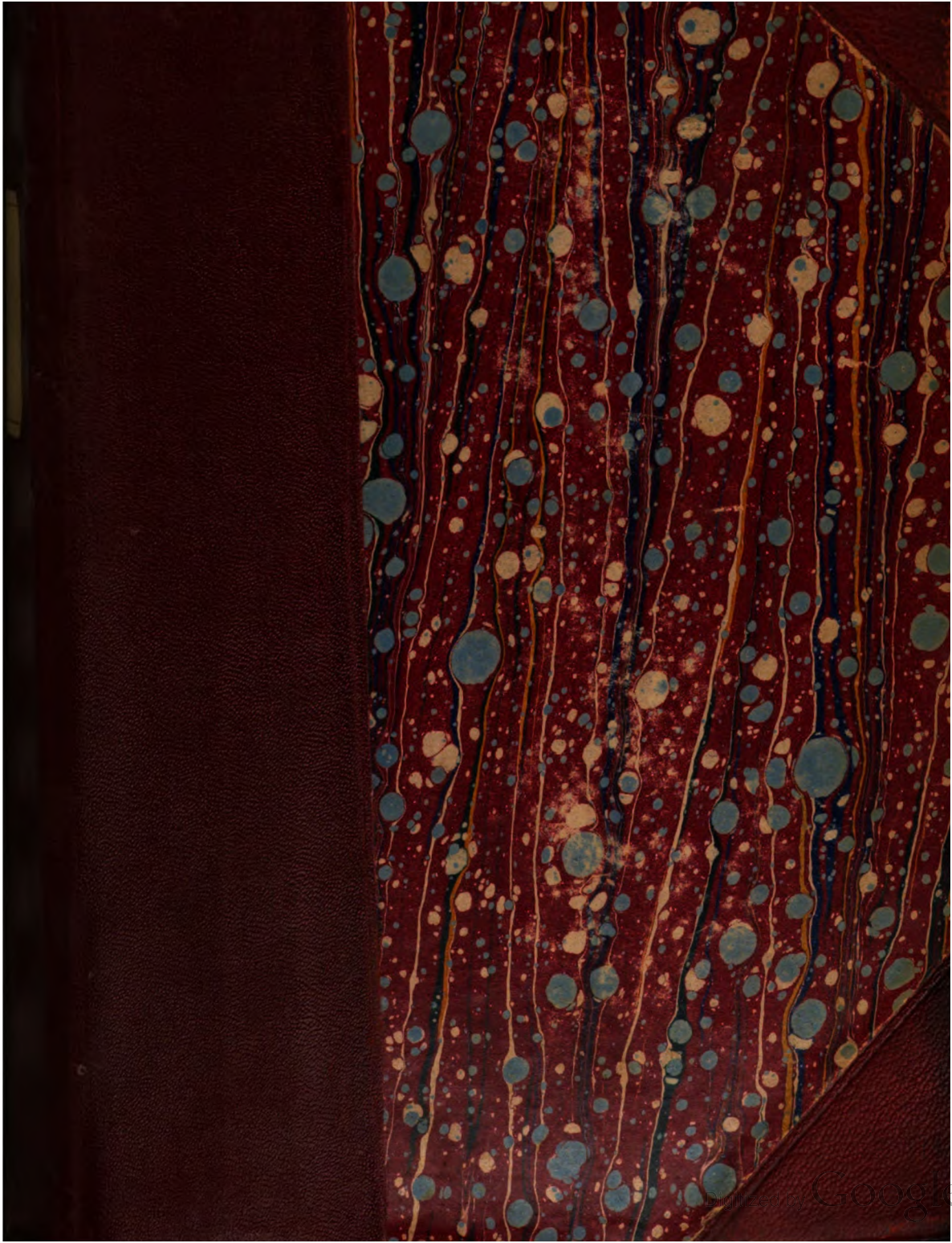
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THE JOURNAL
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MENTAL SCIENCE

*(Published by Authority of the Medico-Psychological Association
of Great Britain and Ireland).*

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"Nos vero intellectum longius a rebus non abstrahimus quam ut rerum imagines et
radii (ut in sensu fit) coire possint."

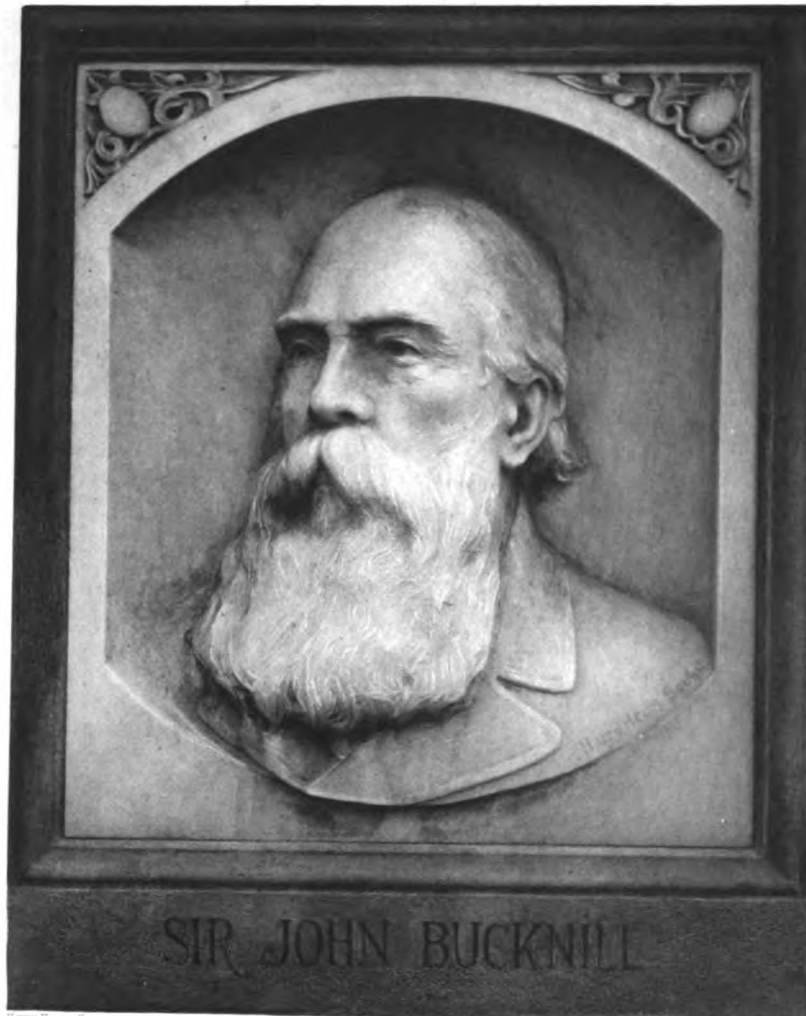
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“ In adopting our title of the *Journal of Mental Science*, published by authority of the *Medico-Psychological Association*, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the terms mental physiology, or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid; for although we do not eschew metaphysical discussion, the aim of this Journal is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our Journal is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanic uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow-men may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study.”—*Sir J. C. Bucknill, M.D., F.R.S.*

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PART I.—ORIGINAL ARTICLES.

Flechsig on the Localisation of Mental Processes in the Brain.
By W. W. IRELAND, M.D. Edin.

Two Treatises* recently published contain the views of Professor Flechsig, of Leipzig, upon the present state of our knowledge of brain function. The first is in the form of an oration delivered in 1894 in the University Church of Leipzig, of which a new edition appeared last year. The second is a shorter pamphlet, which contains an account of the most recent researches in the structure of the brain. In the oration the notes occupy three times the space of the text; in the other treatise the notes are not so long. In both these notes are important, and form in some passages the most interesting part of the work. He holds that the time has now come when the old introspective psychology must turn for guidance to anatomy and physiology. It is only within the last few years that such claims could be entertained. The localisation of mental operations in the brain was made by Hippocrates from observations of the loss of function caused by diseases or wounds of the head. Polybos, the son-in-law of the great Greek physician, held that the brain was the centre of the nerves and the central organ of the thinking soul; and Erasistratos, of Alexandria, first taught that the superior intelligence of man depended upon the greater size of the human brain, and the more complicated structure of the convolutions. A new era began with the experiments of Fritsch and Hitzig in our own day. Since then experimental physiology and clinical observations,

* *Gehirn und Seele*, von Dr. Paul Flechsig, Professor der Psychiatrie an der Universität, Leipzig. Verlag von Veit und Comp, 1896. Octavo, pp. 112.—
Die Localisation der Geistigen Vorgänge insbesondere der Sinnesempfindungen des Menschen, von Dr. Paul Flechsig. Leipzig, 1896. Post octavo, pp. 88.

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going hand in hand together, have led to the accumulation of a large fund of knowledge about the several functions of the nervous centres. Another path of discovery was opened by Golgi through his new method of differentiating the finer structure of the grey masses of the brain by his silver colourings; and also by Kölliker, who, working with low powers, was able to demonstrate the course of the motor and sensory nerve paths and of the association system in the brain.

Dr. Flechsig gives to Gall the credit of an incomparable advance in brain physiology, as he showed that the convolutions of the brain formed the most important substratum of mental activity. In my opinion this praise is little deserved. What Gall did was to make a pretty comprehensive list of the mental faculties and to locate them on all those portions of the hemispheres under the outer surface of the skull, wholly leaving out of consideration the gyri opposing one another in the great longitudinal fissure, and also those lying on the floor of the cranium. Gall, Spurzheim, the Combes, and other preachers of phrenology kept up a noisy and futile controversy which lasted for two generations, and led many away from the truth. The only one of Gall's guesses which survived was the localisation of the orbital part of the anterior lobe for the faculty of language, which was put upon a scientific footing by Dax and Broca. Dr. Flechsig observes that Goltz's vivisection upon dogs went to show that the extirpation of the cerebrum was followed by the loss of all mental manifestations. The dogs which survived removal of the hemispheres lost all memory and judgment, and were incapable of seeking out objects to gratify their wants; but they could still run about and hold themselves upright. Under the stimulus of pressure, very bright light, and loud noises, they executed movements which we are accustomed to associate with discomfort and pain. A dog thus mutilated bites and howls when lifted up in the air, and when kept without food the whole body appears in unmistakable disquiet. After being fed he falls into a state of rest and apparent satisfaction, continuing in what appears to be a dreamless sleep till aroused by new stimulation. These observations show clearly the power and independence of the bodily impulses; they teach us that many actions have absolutely nothing to do with the mind. Many of such observations hold good for the human species. Take the case of the new-born child; he comes into the world with a brain quite immature. The axis-cylinders of the nerve

fibres have scarcely formed, and the chemical structure of his brain is different from that of the adult, yet the animal impulses show themselves with the first breath, and through his cries he seeks the gratification of his wants which are those needful to sustain life. When such wants are appeased, and he is left undisturbed, the outward manifestations of consciousness are suspended. The feelings of hunger and thirst in the infant do not appear to differ much from the need of respiration excited by chemical alterations in the blood acting upon the medulla oblongata. Dr. Flechsig observes that only one-third of the human brain stands in direct relation with the nerve-tracts which convey the excitations of the periphery of the body to the grey matter, the seat of consciousness, or which conducts the returning impulses to the muscles, enabling the mind to direct voluntary movements. The other portions of the brain have to do with the operations of the intelligence and will. In the study of the histological development of the infant's brain Dr. Flechsig finds the key to the evolution of the mental faculties. He assumes that the nerve-tracts do not exercise their functions until the axis-bands are formed, and these are developed independently in different parts of the nerve centres. These tracts, known to be the paths of conduction of the senses, first show the axis-band. To make this plain we must translate several of Dr. Flechsig's pages, principally from the smaller and newer treatise upon cerebral localisation. The author remarks that he is unable to make his views clear without illustrations, of which there are several beautiful coloured lithographs at the end of the Oration. Of these the first three plates show sections of the brains of new-born and young children. The next two plates give a diagrammatic representation of the sensory and motor areas of the brain, the paths of conduction and the association centres. We reproduce all the engravings in the smaller treatise, only altering the German names for their Latin or English equivalents, and must refer our readers to the original works for the coloured plates.

One of the chief achievements in working out the anatomy of localisation of the brain functions is the complete demonstration of the paths of sensory conduction from their entry into the encephalon to their termination in the cortex. These paths of sensory conduction of all the fibres in the white substance of the brain are the first to appear in a matured condition, that is showing axis-bands. In the brain of the foetus and

of the new-born child these tracts appear quite isolated. One can easily distinguish their course and the areas of the cortex with which they come into connection. These observations derive confirmation from Türk's methods of observation, which consist in tracing downwards the secondary degenerations following upon local inflammation of the central area of the brain. We here give a sketch of what is known of the spinal paths of sensory conduction.

1. *The Posterior Roots of the Spinal Cord.*—The first sensory paths of conduction appear in the posterior roots of the spinal cords and the oblongata. In the white substance of the brain the first mature nerve fibres are exclusively prolongations of these posterior roots.

The posterior roots are the conductors of those organic sensations which do not depend upon the sympathetic, and also of the impressions transmitted from the skin, those of touch and temperature. For a long time clinical medicine was not able to make out from the study of inflammations in the cortex what areas were connected with sensory and organic sensations. There is an important observation mentioned in all the text-books of the connection of the inner capsule with derangements of sensibility, which goes by the title of Türk's hemianæsthesia. This form of disease occurs in two principal forms, a simple, and a complicated one. In the simple form there is a suspension of the sensibility and the organic feelings connected with the motor approaches, the so-called muscular sense and the feeling of pain in all outer parts of one half of the whole body, including the cavity of the mouth and the sexual organs. The sensibility of the abdominal viscera to pressure is generally maintained, because these organs, reaching into the middle line, have relations with both sides of the brain. As Türk observed, and Charcot particularly investigated, these symptoms are frequently accompanied by anæsthesias of the higher senses, deafness or difficulty of hearing in one ear, hemiopia, loss of taste and smell on one side. The simple form of Türk's hemianæsthesia, in which only the functions of the posterior of the spinal cord are suspended, is observed to follow lesions of the posterior portion of the inner capsule, or the neighbouring foot of the corona radiator. This forms a part of the *carrefour sensitif* of Charcot. It is worthy of note that from injury to no other region of the cortex does there follow so lasting and so deep a hemianæsthesia of the posterior roots as from injury to

the said part of the inner capsule. Well, in studying the history of the development of the nervous system we find that the inner capsule is precisely the portion of the brain in which we first recognise fibres with axis cylinders in the foetal brain. This can be very clearly demonstrated. In the course of development the strand of conduction separates into three systems of fibres of the inner capsule. I have named these No. 1, No. 2, and No. 3 (compare Figures 1-3).

A. *The Sensory System, No. 1.*—This occupies the upper half of the inner capsule close behind the area of the pyramidal path. It contains fibres with axis-cylinders developed about the beginning of the ninth month of foetal life. Taking with it the bulk of the fibres of the basal portions of the lateral nucleus of the thalamus as well as fibres from the shell-like corpuscle, corpus testaceum, and from the fillet, this sensory tract runs into the grey matter of the median gyri which thus of all the cortex first receives excitations from the periphery of the body. This tract forms a flat strand of nerve fibres; its cross section through the medullary substance of the temporal lobe is indicated by a line running from before backward (1 1' 1" Fig. 1.3). A small bundle appears to go to the under part of the radiating optic fibres (1 x). Whether this offshoot of System No. 1 goes to the visual sphere cannot be certainly made out; in any case we do not find fibres with the axis-band in any part of the temporal lobe at this stage of development, whilst in the optic tract single bundles containing axis-bands may be found in the basal part of the posterior brain (externally to and below the posterior cornu). These fibres may be followed nearly to the hinder portion of the lateral nucleus (L. K. x Fig. 1).

B. *System, No. 2.*—About a month later than in No. 1 there is observed in the inner capsule a second tract of nerve fibres which also grows out of the lateral nucleus of the optic thalamus, but more behind (compare Fig. 2) than No. 1, which last issues out of the basal part of the optic thalamus. This second tract of fibres passes into the centrum ovale to the same regions of the cortex as No. 1, *i.e.*, the lobulus paracentralis and the foot of the first frontal convolution; another portion of this tract takes a sharp turn (2, 2, 2) inwards and comes into connection with nearly the whole length of the gyrus fornicatus. The posterior bundles (2, Fig. 1) enter the cingulum and run

towards the hippocampus major. About the time of maturity these said fibres, which issue from the upper and anterior rim of the inner capsule, are accompanied by another band which issues from the basal side, enters the gyrus circinatus (2'') and finally reaches the pes hippocampi so that the whole lobus limbicus is connected with the lateral nucleus of the optic thalamus. The bundles of fibres which pass to the first frontal gyrus seem to come from the median centre (Luys) of the thalamus.

C. System, No. 3.—At a period varying from one to several months after birth there is to be found in the inner capsule a third system of fibres with axis-bands, which comes into connection with the lateral nucleus of the thalamus. This band of fibres passes from the anterior part of the lateral nucleus in the middle of the capsule; one portion of it goes directly to the foot of the third convolution; another portion takes sharp curves to reach the cortex. Some hundreds of these last mentioned fibres run forward from the neighbourhood of the pyramidal path into the fasciculus subcallosus, and mount at the anterior rim of the corpus striatum to the third frontal gyrus (3'); a second group runs through the anterior part of the inner capsule into the frontal lobe almost mounting to the vortex; it then wheels round so that some of the fibres reach the middle of the gyrus fornicatus (3); others reach the anterior half of the first frontal (3''), and others reach the foot of the second frontal gyrus.

All the ascending paths of nerve conduction which are continuations of the posterior roots of the spinal cord pass into the lateral nucleus of the optic thalamus, namely the chief part of the fillet strand (compare Table 2), the upper peduncle of the cerebellum (compare Table, Fig. 2 B), the posterior and lateral columns, and the longitudinal bundle of the formatio reticulares (compare Table, Fig. 2).

The fillet strand enters the ventral and posterior portion of the lateral nucleus, especially the posterior half of the ventral group of nuclei of Monakow; the basal bundles go direct into the inner capsule. The lateral nucleus of the thalamus, in my opinion, is also a gathering point in the course of the posterior to the cortex cerebri. Here lies everything together which goes from the thalamus to the cortex as well as the strands which do not end here. What remains over passes into the area which I have named the corpus testaceum (Schalenförmiger Körper), and the median

centre of Luys. The rest of the thalamus has nothing to do with the sensory paths of the posterior roots.

These results, gained from a study of development, are confirmed by pathological anatomy. In a case, which had lasted fifty years, of softening of both central convolutions, especially the posterior one, which had completely disappeared, there was found secondary degeneration of the upper crus cerebelli, the fillet strand, and the formatio reticularis. Besides the corpus testaceum, the lateral nucleus of the thalamus was visible, and especially at the places from which the foetal System No. 1 arises. There was degeneration of the whole ganglion cells, so that pathology and the history of development agree in showing that the central gyri are related in part directly, but mainly indirectly, with the sensory nuclei of the posterior and lateral columns of the spinal cord. Destruction of the central gyri is often accompanied by loss of the kinæsthetic perceptions, so that the sense of situation and of the accomplished movements for the extremities and the mouth are deficient or entirely wanting.

In the skin, especially after small localised inflammations, there is a loss of the feeling of lighter contact and of the knowledge of the locality touched. As a result of injury of the arm region of the cortex, the middle of the central gyri, there is an incapacity to recognise the form of outward objects by touch.

Wernicke has shown that injury to the third frontal gyrus is followed by an incapacity to execute, or rather to recognise, the situation of the organs used in speech. The System No. 3, already described as leading to the third, and perhaps also to the first frontal gyrus, is distinguished from the sensory paths of the median convolutions not by a connection with the cutaneous sensories, but with the deeper parts of the body. The new-born child makes use of his limbs, lips, and tongue before he can co-ordinate the muscles of the trunk and the apparatus of voice. Accordingly we find that the sensory and motor nerve paths to the extremities are more early developed than those for the trunk and the special organs of speech.

The gyrus hippo-campi has been regarded as the terminal station for the muscular sense; but a careful study of the clinical cases has shown that this convolution has never been affected without the inner capsule and thalamus also showing lesions; besides Couty, an excellent observer, has

shown that in lesions of the deeper part of the inner capsule (in which System No. 1 comes in), disturbances of the kinæsthetic feelings have been observed.

No pure case of disease of the whole gyrus limbicus (gyrus fornicatus and hippo-campi) has been published. In a case reported by Saville there was total loss of sensibility on the opposite side, which soon passed away. Ferrier, Horsley, and Schäffer are all agreed that destruction of the gyrus limbicus in monkeys is followed by marked and persistent anæsthesia to the stimuli of touch and pain; thus the gyrus limbicus would be the terminal station of the conducting path for the impression of touch and temperature and common sensation, not for the whole conducting fibres, but for a considerable part of them which end in the central and frontal convolutions. To this region of the cortex, to which we trace the termination of the posterior roots of the spinal cord, Munk has given the name of sphere of bodily feeling (*Körpersfühlsphäre*). This area, no doubt, contains a number of sensory centres of different kinds, among which the touch sphere is of special importance; but we must hold in mind that the perception of touch demands the simultaneous exercise of different qualities of sensations. This sphere of bodily feeling is not exclusively connected with sensory conducting tracts; it forms the starting-point of numerous motor paths which lead in a centrifugal direction. One group of these issues from the brain by the crus cerebri; another is connected with the lower centres through the thalamus and the tegmentum. The nerve tracts belonging to this sphere of bodily sensation form about four-fifths of the diameter of the crus cerebri, including millions of nerve fibres. In their development they show an arrangement similar to that of the sensory system in the inner capsule. The pyramidal path in System No. 1 is the only direct conducting tract from the cortex to the cells of origin of the motor nerves coming from the bulb and spinal cord.

Whether there is a motor tract corresponding with System No. 2 our knowledge of anatomy and development does not yet enable us to say.

Most of the paths which lead from the sphere of bodily sensation pass into a region which cannot be shown to stand in a relation to the posterior roots of the cord. These are known in the older nomenclature as the inner nucleus and the pulvinar. Dr. Flechsig, in conjunction with

Tschisch, named this the chief nucleus (Hauptkern); he now proposes as a more handy term the dorso-medial nuclear group (dorso-medial Kern-gruppe). This group occupies the whole thalamus with the exception of the lateral nucleus, the corpus testaceum, and the median centre, as well as that structure which the learned professor has designated as the ventro-lateral nucleus group. It seems probable that cortico-petal fibres lead into this ventro-lateral group while centrifugal fibres pass into the dorso-medial group; however, it is difficult to separate those two groups of nuclei in dorsal and fore region of the thalamus. Each part of the dorso-medial groups of nuclei is connected with one particular region of the cortex; the anterior nucleus with the lobus limbicus with the cornu ammonis through the fornix with the corpus mammillare and the bundle of Vicq d'Azyr; the inner nucleus in its outer dorsal part is connected with the median gyri, and on the inner part with the foot of the collective frontal gyri and the corpus striatum. The pulvinar has nothing to do with the spheres of bodily sensation: it is exclusively connected with the visual area and perhaps with the auditory one.

The significance of these anatomical details would be clearer if we could fully demonstrate all the peripheral connections of the dorso-medial nucleus group of the thalamus. Within the sphere of bodily feeling are included the motor regions of the cortex.

It would appear from the experiments of Horsley and Beevor on the cortex and internal capsule of the orang-outang that only those tracts answer to electric stimulation which lead to the crus cerebri, the paths of voluntary motion. This sphere of bodily feeling has also relations with the respiratory muscles, including those of the abdomen and to the circulating system comprising the pulse beat, the dilatation and contraction of the vessels, and the regulation of the bodily temperature. It is to be presumed that in the cortico-petal path of the sphere of sensation there are paths of conduction which convey to the reach of consciousness organic sensations from every part of the body, feelings of thirst and of well-being, and changes in the respiration and circulation as well as the state of contraction of all the voluntary muscles. Dr. Flechsig considers it likely that this sphere of sensation has to do with the increase or diminution of muscular motions attending the expression of the affections and passions, but he feels unable to indicate

by what paths these muscular innervations are conveyed from the cortex to the optic thalamus.

2. *The Olfactory Nerve.*—According to Edinger the sense of smell is first manifested in the vertebrate animals. This does not answer the expected correspondence between the ontogeny and phylogeny of man, for in man the nerves of common sensation become developed before the nerves of smell, and the nerves of smell before those of vision. The olfactory tract contains axis-bands about the end of the ninth month. The frontal part is developed more easily than the posterior part. The olfactory tract is directly connected from all parts with the cornu ammonis, which has, no doubt, something to do with the perception of smell. Besides this the olfactory sphere has connections with the globus pallidus of the nucleus lenticularis, and with the thalamus. Perhaps they furnish cortifugal reflex paths.

The author is unable to indicate the locality of the sphere of taste; he thinks it should be sought for at the edge of the sphere of bodily sensation or of the olfactory sphere.

3. *The Optic Nerve* shows fibres with the axis-cylinder in the middle of the tenth month. At this period fibres may be traced directly from the outer corpus geniculatum externum, and thence to the anterior corpus quadrigeminum. From the corpus geniculatum externum a large bundle goes to the pulvinar of the thalamus, which might appear to be a direct continuation of the optic tract. This bundle reaches the cortex of the calcarine fissure; it can be very easily shown in the brain of the new-born child as a strand, with axis-cylinders passing into the occipital lobe.

In the foetus the axis-bands are first developed in connection with the macula lutea. In the child born at eight months the axis-band fibres are not complete, but at nine months the eye is mature for vision. From observations upon a foetal brain the professor is inclined to think that it is only the fibres of the macula lutea which are in direct connection with the outer geniculate body, and that it is the peripheral fibres of the retina which go directly to the anterior corpus quadrigeminum and to the thalamus.

Gratiolet's optic tract contains within its circuit many fibres which have other functions than those of vision. Dr. Flehsig holds that the visual sphere embraces the whole inner mesial surface of the occipital lobe and a narrow zone on its convex aspect in the region of the first occipital gyrus up to the parieto-occipital fissure. It is even ques-

tionable whether all parts in this area subserve visual perception. These anatomical data, gained through the study of development, are confirmed by the critical examination of secondary degenerations. Softening which exclusively affects the region of the calcarine fissure is followed by degeneration of the fibres of the occipital lobe and of the thalamus to the anterior corpus quadrigeminum. The corpus geniculatum externum can be found degenerated in all its parts. The pulvinar shows a partial degeneration. The degeneration is more extensive the more the primary lesion affects the part of the visual sphere behind the calcarine fissure. Dr. Flechsig holds that the gyrus angularis has nothing to do with vision.

4. *The Auditory Nerve.*—The fibres of the auditory tract are developed last of all the sensory nerves, though they afterwards take the highest place in the intellectual and emotional life of man. The nervus cochlearis through the lateral fillet and a few fibres of the fornatio reticularis connects itself with the lower corpus quadrigeminum and the inner corpus geniculatum to reach the temporal lobe. The path of the auditory nerve from the cochlea to the cortex has now been clearly made out. Clinical observation has shown that a defined region of the temporal lobe is in intimate relation with hearing. Sensory aphasia, or the perceptive form of word deafness, is dependent upon the lesions of the first temporal gyrus coming from before backwards. Naunyn has more strictly defined this auditory area as embracing the third and fourth fifth of the superior temporal gyrus counting from before backwards. Monakow has recently shown that destruction of this part is followed by degeneration of the inner corpus geniculatum through its whole extent. It has been found in the two months' child that the fibres appear in the inner corpus geniculatum sooner than in any other parts of the occipital lobe, from which it is inferred that it is those two hitherto neglected cross gyri of the temporal lobe which form the auditory sphere, especially the anterior cross convolution (see Plate, Fig. I.). Both these cross convolutions lie hid in the depth of the Sylvian fossa, but they are connected with the first temporo-sphenoidal, of which they indeed form the roots. They lie between the posterior rim of the insula and the free outward part of the first temporal. In all observed cases of complete deafness following destruction of the cortex in both sides, the area of these cross convolutions

was found injured on both sides, and also in cases of one-sided deafness or difficulty of hearing there were found abscesses on one side or injury to the nerve fibres radiating from the same region. Dr. Flehsig also describes a special motor system of nerve fibres connected with the auditory sphere which passes down to the outer bundle of the crus cerebri.

The nervus vestibularis does not appear to be connected with the auditory sphere of the temporal lobe. It can be traced to the posterior roots of the oblongata, so that its terminal station may be looked for in the sphere of bodily sensation.

FEELINGS NOT LOCALISED.

Besides these definite sensory perceptions there are vague feelings, such as general unrest, following on the over-charging of the blood with carbonic acid, changes in the calibre of the vessels, the sexual impulses, and feelings of tension, and general distress, which cannot be localised in precise areas of the nervous centres. Dr. Flehsig observes that the axis-bands are found developed in the motor regions of the spinal cord, the antero-lateral columns, at a period of foetal life when the posterior roots are still in an embryonic condition. In this respect there is a remarkable difference between the cortex cerebri and the medulla oblongata. In the grey matter of the brain the motor areas come to mature development, without exception, after the sensory areas. But though the motor columns of the cord are ready to take on their function, it does not appear what function they could perform while beyond the reach of outward excitation and central impulse. From observation on monstrosities, born without the higher portions of the brain, and from extirpations in animals, we may infer that some dull feelings are manifested in the lower ganglia and bulb; but for the waking consciousness and the arrangement of our sensations in space and time we are dependent upon the grey matter of the brain.

Dr. Flehsig holds that the exercise of the senses is absolutely dependent upon these defined areas of the cortex. Patients in whom the visual areas are destroyed are absolutely blind; patients after destruction of the auditory sphere on both sides are absolutely deaf. There is no functional substitution of these sensory perceptions to any other portion of the brain. The specific energies of the

special senses are only realised through the centres in the grey matter of the brain. Here it may be asked, with so decided a difference of function, can there be recognised any difference in structure? Dr. Flechsig replies that in the sensory spheres there is a characteristic difference both in the form and arrangement of the nervous elements. A practised observer, he says, can distinguish between a microscopic section, from the gyrus fornicatus from the visual area, the visual auditory and other sensory spheres, as well as between a piece of the liver and the kidney. In the gyrus fornicatus there is a special form of cell (the large spindle cell of Branca), which he has never found in any other part of the cortex. The sensory spheres are also distinguished by greater richness in the tangential cortical associating fibres to such an extent that on the surface of the gyrus circinatus in the sphere of bodily sensation the tangential fibre layer, and deeper down, a layer of white nervous fibres is observable to the naked eye. Dr. Flechsig observes that the optic tract, in the outer geniculate body, has a peculiar structure. It has granular layers, which are similar to those of the retina. Indeed the layers of the whole cortex have a resemblance to the structure of the layers in the retina. This supports the view, which I have suggested, that the retina is really a portion of the brain in which visual images may be realised. This view is strengthened by the history of its development. In the grey matter of the brain the visual sphere is the most complicated in structure; here Meynert counts eight layers, while the olfactory area has the fewest layers.

In support of these striking statements Dr. Flechsig has to combat the remark of Kölliker that the differences observed in the size, number, and situation of the pyramidal cells and the abundance and distribution of the nerve fibres with and without axis bands, are of little significance. He insists that this judgment is not borne out even by Kölliker's own book. He also blames Golgi for asserting that parts of the cortex having different functions show throughout the same structure. The Professor observes that the Italian histologist lays too much stress upon his method of staining preparations, and that if he had used aniline dyes he would not have denied the distinctive character of the giant cells of the central convolutions. It may be here observed that Dr. Flechsig uses his notes not only to explain his text by farther details, but to keep up a fusillade of controversy

against other neurologists. To reproduce these disputes would take up too much space on this occasion. Only about a third of the human brain stands in direct relation to the conducting paths which bring the impressions of the senses within consciousness and carry motor impulses to the muscles. Two-thirds of the brain have nothing directly to do with those operations; they have a higher office to perform. They are the regions of intellectual activity, the Think-Organs (*Denkorgane*). This region of the brain comprises the whole frontal lobe except a part of the third gyrus, the insula, the first and second parietal, the second and third temporal convolutions, except the inner *polus temporalis*, the occipito-temporal gyri, the second or third occipital, and almost the whole *precuneus* (see Plate, Fig. 1 and 2, the areas not dotted). All these convolutions mature later than the sensory spheres. A month after birth the Think-organs are immature, their fibres without the axis-cylinder, while the tissues of the sensory areas have fully developed quite independently of one another. Even in the third month these areas show such a poverty in the axis-cylinders that they can be easily distinguished from the other areas. Soon appear numberless associated fibres running from the other centres and connecting all parts of the brain together. Dr. Flechsig thinks that the ganglion cells of this mental region are the central organs for the association of ideas. The sphere of bodily sensation is much richer in association systems than the other sensory regions. The auditory and visual areas are only directly connected with the adjoining convolutions, but do not send any association paths, at least these are few. Thus each of these sensory spheres has a border zone of connection. In addition to this the sphere of bodily sensation sends numerous long bands of nerve fibres into the middle of the great association centres, especially a large one to the posterior one (see Fig. 1), that is to the outer surface and base of the temporal lobe. This band is distinguished from all others by its late development. It has probably to do with the voluntary or affective impulses of the mental conceptions. It is partly covered in by the *fasciculus arcuatus*, as *Meynert* has represented. The central convolutions are connected before with the frontal region, below with the insula, and sends association fibres into the sensation sphere, so that the central neurone of the association centres is closely connected with the border zones of the sensory spheres (see Plate, Fig. 1). The posterior and frontal mental centres

seem mainly to keep up connection one with another through the sensation sphere. Indeed, when we think of it, the realisation of impressions from all parts of the body is of supreme importance. It is the necessary prelude for the formation of the conception of the Ego, and is the only wholly indispensable condition for mental development, to which the other senses contribute without being absolutely requisite for the formation of a personality.

Man owes his mental superiority not only to the larger mass and surface of his brain, but also to his great posterior association centres, which enable him to associate all his conceptions with words, and then to clothe them in words. His capacity to utter these words rests upon the larger development of his third temporal gyrus, and also of a part of the sensation sphere, which last is not nearly so well developed even in the highest apes. How far the strong development of the frontal association centre contributes to the mental superiority of man will be appreciated when we better succeed in tracing the connections of this portion of the brain. It is to be noted that the capacity to combine the attention with personal motives for the regulation of conduct is generally lost in double-sided disease of the frontal lobes.* In disease of the association system lies the special cause of insanity. We find the association fibres altered in those mental derangements, the nature of which is clearest to us because the microscope, cell by cell, fibre by fibre, displays clearly the underlying alterations, and thus we can show what are the consequences for mental life when these tissues are more or less disorganised. The thoughts whirl through one another, the mind fashions strange images when stirred by the irritation of disease, and when morbid processes go farther the person loses the capacity to make use of the past and to foresee the consequences of his actions. These tissues are the chief bearers of what we call apprehension, knowledge, and experience, of what we call principles and the higher feelings, and in part also of speech, and all these capacities are swept away with one stroke, if through some intoxicating agent, the mental centres are deprived of their excitability.

* Flechsig observes that the height of the forehead depends partly upon the size of the sensation sphere, and this in its turn upon the size of the body. Thus the height of the forehead is no direct measure of the mental powers. The most important part of the brain for great mental performance seems to lie in the posterior regions.

It was Tuzek who in his monograph on Dementia Paralytica first showed the importance of the alterations in the nerve fibres in this disease. Of all forms of mental derangement general paralysis is the most instructive in showing the dependence of morbid mental manifestations upon brain lesions. In some cases the derangement is purely intellectual; another patient has the most senseless delusions of grandeur, with maniacal excitement; another is troubled by deep melancholia or hypochondria; another is the victim of fixed systematised delusions of persecution; other patients are visited by hallucinations, or circular insanity, or are simply affected by progressive indolence and want of judgment. These varying symptoms are no doubt partly dependent upon born constitutional proclivities, and also upon the exciting causes which have brought the disease to a head, syphilis, or mental excitement, or drunkenness; for the most part, however, these variations in the clinical symptoms depend upon a lesser or greater power of resistance in different parts of the brain, so that the disappearance or dissolution of numerous nerve fibres, and occasionally, too, of nerve cells, is greater or less in different regions of the brain. Sometimes the dissolution of the nerve fibres affects the association centres of the fore brain, of the insula, or of the hind brain. Professor Flechsig thinks that the variations in the mental symptoms may thus be explained. He regards the disappearance of the association fibres as the essential lesion of general paralysis. Other lesions, such as the inflammation of the membranes, the extension of the inflammation of the substance of the brain to the medulla and the hydrocephalus internus and externus he regards as more or less incidental.

In some cases Professor Flechsig thinks that he has succeeded in separating the simple affection of the association fibres from these complications, and has thus been able to observe a group of symptoms which may be regarded as the result of the deranged activity of the frontal lobes. The patient loses a proper sense of his own personality; confounds me and thee, mine and thine; cannot distinguish the false from the true, and is prone to yield to his affections and passions. In the end dementia supervenes, when he loses the sense of what he has been, and of what he is.

The preceding *résumé* does not exhaust the interesting observations made by Professor Flechsig. With great

diligence and much ability he has sought to show how recent researches in the structure and development of the brain go to explain its high functions. In fact, after going through his demonstrations we do see more clearly how the mechanism of the brain renders it fit to be an instrument of feeling and thought. Nevertheless, through the dead brain we cannot understand the living mind in all its wonderful powers, capacities, and receptivities. Of the internal vital processes accompanying the working of the mind we know scarcely anything. Professor Flechsig, indeed, remarks, that as consciousness will not persist for a moment when the supply of arterial blood-bearing oxygen to the brain is interrupted, we may infer that a process of oxidation goes on between the blood and the nerve cells.

The controversy which has already arisen in consequence of the publication of these opinions is still in progress, and Professor Flechsig has lately replied to his critics. Early this year he intends to publish the further results of his researches and reflections, and we await his communication with great interest.

Atypical and unusual Brain-Forms, especially in relation to Mental Status: A Study on Brain-Surface Morphology.
By W. JULIUS MICKLE, M.D., F.R.C.P. (London).

(Concluded from page 803, October, 1897.)

CHAPTER XIII.

Continuing the *recapitulation*, begun in the last chapter (which dealt thus with the *more general* morphological states), we next resume in brief the several Chapters, III to VIII, on

UNUSUAL OR ABERRANT MORPHOLOGICAL CONDITIONS OF INDIVIDUAL LOBES, GYRES, AND FURROWS.

Taking first the MESIAL SURFACE,
Sub-frontal fissure. Superorbital, and mesial frontal intra-gyral, sulci.

The sub-frontal fissure may present many deviations from more usual form. It may end, behind, at different points of the antero-posterior diameter in the two hemispheres. Its posterior upturn may be further forward or further backward than usual, relatively to the established landmarks ;

or may fork; or the fissure may seemingly have several separate upturns. The fissure may be more or less practically doubled, and then also one or both furrows may exhibit irregularity of conformation. It may be broken up into several pieces. It may traverse the mesial surface at different relative distances from upper and lower border, not only in different brains, but in the hemispheres of the same brain. It may join with the sub-parietal fissure. Its course may be very oblique posteriorly. In such case, and in others, the posterior upturn may fail to attain the upper surface or even to attain the mantle border. The above variations necessitate corresponding differences in the relative size and form of the gyres. Moreover, deviation of the sub-frontal fissure from usual form is apt to be accompanied with other mesial aberrant appearances.

An important effect is exerted by the annectant gyres, or gyrels, crossing to or from the fornicatus, and usually hidden in the depths of the furrow; which, becoming superficial, may completely divide the sub-frontal fissure into several separate arcs.

The attempt to appraise the significance and importance of the several deviations from the typical described in the third chapter may be recapitulated as follows:—

Superiority is indicated by shallow interrupted furrowing of the anterior half of the mesial surface, above the fornicatus, by a linear series of sagittally arranged sulci; thus dividing that surface into two longitudinal superimposed tiers.

Other things equal, a mark of superiority is a well-developed super-orbital sulcus, with two accessory super-orbital incisions;—and conversely, small size, imperfect development and fewness of super-orbital furrows tell for inferiority.

Other things equal, the following would denote superiority:—

A single, or but once divided, sub-frontal fissure, well provided with deep or partly superficial annectant gyrels.

A sharply cut pre-oval sulcus, and defined oval lobule.

And the contrary conditions would denote relative inferiority.

Failure of the posterior upturn of the sub-frontal fissure to reach the upper hemispherical edge denotes defect and aberrancy of conformation, as in lunatic or in microcephale. Reduction of the normally sharp posterior upcurve to a slight gradual flexure of the general line of the horizontal portion of the sub-frontal, thus producing curtailment of the lower

part of pre-oval lobule, brings about resemblance to the apex of the fissure; marks inferiority; may occur in small-head idiots; in whom also the anterior portion of the fissure may be irregularly developed or broken up, but seems to be always represented more or less.

This posterior upturn of the fissure may be more or less separated from its horizontal main stem by a gyrel, normally deep-sunken, but now rising more or less to the surface and crossing almost vertically from fornicatus to oval lobule. And therewith, in some examples, the upturn, thus cut off from its union with the main sub-frontal stem, makes more or less complete union with the sub-parietal fissure. Such condition, in man, points to a far-back-going phylogenetic reversion. And in the third chapter I mentioned the view that the posterior ascending terminal vertical piece of the fissure represents, in the human brain, the sulcus cruciatus of the carnivore brain; and that this posterior ascending end-piece of the sub-frontal fissure is really a morphologically independent furrow-element, which in the brains of primates joins the sub-frontal fissure, this being, in them, predominant and separate from the sub-parietal fissure; but in the case of some other animals joins what is, in these, the much more dominant sub-parietal fissure owing to relatively defective influence of frontal brain. And I mentioned examples of marked union of sub-frontal fissure, or of its upturn, with sub-parietal furrow, in aberrant human brains. Moreover, even when preserving free union with its horizontal stem the upturn sometimes unites nearly as much with sub-parietal fissure as with sub-frontal.

PRÆCUNEUS : OR QUADRATE LOBULE.

Coming now to the quadrate, there is, in the first place, the condition which I termed the formation of a præcuneolus (or anterior cuneolus); namely, the superficial insulation or peninsulation (so far as concerns the mesial aspect) of the upper and posterior area of the quadratic surface; triangular, wedge-shaped, or squarish in outline; or of a narrow back-most zone bordering on the parieto-occipital fissure.

In some instances, this condition, or a foreshadowing of it, may be seen in the fœtus, the microcephale, and the ape. It is an example of deviation and formative activity, rather than of defect and formative inertia; in the human adult is a somewhat unusual conformation, which, although in some

cases of developmental character, often indicates a reverting tendency and possesses phylogenetic significance.

When a posterior marginal zone of the præcuneus is cut off by a duplication of the internal limb of the parieto-occipital fissure, the state is like the doubling of parieto-occipital fissure occasionally observed in anthropoid apes.

Passing by other deviations or anomalies of præcuneus, described in the third chapter, we consider the parieto-occipital *frontier morphology*.

FRONTIER MORPHOLOGY: PARIETO-OCCIPITAL FISSURE.

Whether strictly continuous, or discontinuous, with the mesial part of the fissure, or of intermediate form in this respect, *the external part* of the parieto-occipital fissure is sometimes a deep irregular cleft, a bold dividing and bounding furrow, nearly straight, or zigzag in course. Such highly marked external limb of parieto-occipital fissure depressing the first external gyre, and joining with interparietal sulcus or a spur of it, or passing far out on the *upper* hemispherical surface; is a mark of inferiority in type; and is also present in some microcephales.

On the mesial aspect, also, there are a number of states of *parieto-occipital fissure* indicating inferiority and atypy. They indicate reversion as a rule: but as regards certain examples of some of them, persistence of foetal character. Each is present in certain ape-forms, in some microcephales, and several of them are observed in some foetuses also. At least, I take the following conditions as indicative of inferiority when present in adult Man, namely:—

An internal limb of parieto-occipital fissure interrupted by a superficial gyrus cunei, or other annectant gyre (superior internal) rising to the surface:—

Doubling of the internal limb of the fissure; shortness of it; failure to reach the upper mantle-border; slightness of its incision there:—

Its defective depth and boldness relatively to the calcarine:—

Spurs running fore and aft from the internal parieto-occipital limb, furrowing and practically expending themselves on præcuneal and cuneal surfaces, or shallowly touching the mantle-border, or joining the transverse occipital or transverse parietal or sub-frontal furrows. This fore and aft forking of parieto-occipital fissure on mesial surface

may occur in the foetus, and has been figured in the microcephale:—

Confluence of the conjoint "stem" of calcarine and parieto-occipital fissures with the collateral fissure.

GYRUS CUNEI.

It was pointed out* that the gyrus cuneus consists chiefly of one-third round, or half-round, coils in relief, twisted around each other, especially as regards two such, which seem to enter and distribute themselves, one on the lower zone, the other on the anterior zone of the cuneus; a third one entering the middle region of the cuneal substance:—

And that it is a departure from type and sign of inferiority when the gyrus cuneus rises decidedly towards the surface and still more so when it completely gains a superficial position.

OCCIPITAL LOBE (*including its Mesial Surface*).

THE CUNEUS.

The cuneus may be unduly small, or irregular or twisted in shape. Or it may evince the formation of a *cuneolus*; namely, the insulation or peninsulation of a cuneiform portion of its surface by the posterior prong of a bifurcating or trifurcating mesial limb of parieto-occipital fissure, which thus nearly or quite cuts off a triangular portion forming the anterior and upper part of the cuneal surface.

The formation of a cuneolus may appear in high ape or in the full-time human foetus. Its significance is similar to that of the formation of a *præcuneolus* (*vide supra*).

Another condition, occasionally observed, is the furrowing off of an irregularly triangular upper and posterior, or upper, part of the cuneal area, beside the mantle's upper edge. This cut-off is sometimes made by "the stem," extending into the cuneus, forming a cuneolus, and then bifurcating high up into branches set at nearly a right angle to its main trunk. In the human foetus, as early as the sixth month, a similar condition may be found.

CALCARINE FISSURE (*not including "stem"*).†

In some low-type human brains the back end of the (apparent) calcarine fissure is much further forward than

* *Journal of Mental Science*, July, 1896, p. 565.

† *Journal of Mental Science*, July, 1896, p. 569.

normal, but sometimes with a short curving sulcus behind it; and there seems to be a reversion towards ape-type.

Among other states which seem to be more or less atypic, and signs of inferiority in Man, are those due to the calcarine fissure being in small sections; or very jagged or zigzag.

A deep calcarine fissure, uncrossed by sunken annectant gyrels, and preponderant *relatively* to the parieto-occipital fissure, indicates a retrograde condition approximating simian form; and is found in some microcephales.

An unusually far-back position of the anterior cuneo-lingual annectant gyrel (and perhaps with downward incut of the calcarine) shows inferiority and an approach to the ape-form.

Likewise, a far back posterior cuneo-lingual gyrel, only cutting off the posterior rami of the fissure, perhaps denotes inferiority.

Inferiority may also be indicated by the termination of the calcarine, behind, in a single simple unbranched end.

Confluence of the "stem" and collateral fissure on the inferior cerebral surface, occasionally observed, is usually slight. Especially when well-marked, it may represent abnormal persistence of an inconstant and transitory foetal state. For the collateral fissure begins in two or three pieces; and in the human foetus in the sixth or seventh month the middle piece is sometimes connected with "the stem," and has then a more or less transverse direction.

This connection of "stem" and collateral fissure, usually at least, is an element in the formation of the girdle of furrows several times mentioned in preceding chapters.

In some brains of a low order, or aberrant type, one finds two apparently contrasting states of the collateral fissure; for in some it is defectively developed, broken up into separate scattered representative fragments; whereas in others it is long, bold, and coursing on the inferior occipital-temporal region almost from tip to tip of the two lobes. Of these states of the fissure, the former seems to indicate arrested development; the latter, reversion in form.

TRANSVERSE OCCIPITAL SULCUS (OF ECKER).

Unusual nearness of the transverse occipital sulcus to the external limb of the parieto-occipital fissure, in their somewhat parallel course, or separation by a narrow ridge only, seems to mark a defect in the advance of the human on the simian brain. And its junction with the external limb, or

continuation, of the parieto-occipital fissure, occasionally seen, appears to have much the same significance. This junction is also effected in some idiot brains.

The nature, homology, and formation of this sulcus are discussed in the fourth chapter.*

Representation of Ape-chasm in Human Brain.

In relation to the question whether or not the ape-chasm is represented in the brain of the human adult we touched on the chief views as to the possible homologies here; enquiring whether the ape-chasm is represented in Man by the transverse occipital sulcus, or by the external portion of parieto-occipital fissure, or by the anterior occipital fissure, or by the foetal and temporary sulcus of Bischoff. Enquiring, also, whether this last sulcus ever persists as an abnormality in adult life; and, if so, in what form and position.

In this relation, I described† brains, of human adults, which had possible representatives of the abnormal persistence of the external perpendicular occipital sulcus of Bischoff; a sulcus which under normal conditions is only foetal and temporary.

OCCIPITAL OPERCULUM.

An appearance slightly resembling the simian occipital operculum indicates a tendency to reversion towards that form.

POSTERIOR PARIETAL OPERCULUM.

This may be taken as an unusual condition when it is extremely marked, but in the direction of lack of balance, and as the manifestation of over-activity on the more important line of evolutionary advance, with some relative defect of activity on the occipital line, which, normally, should offer a due and appropriate measure of resistance to the (parietal) one which has become predominant. The posterior parietal operculum, so far as it goes, signifies a condition of high type, yet, sometimes at least, associated with impaired balance, with *relatively* defective occipital ontological formation and phylogenetic endowment.

OCCIPITAL GYRES AND LOBES GENERALLY.

In some brains the divergent occipital lobes leave the

* *Journal of Mental Science*, July, 1896, p. 573.

† *Loc. cit.*, p. 575.

cerebellum very defectively covered behind. And, often connected with this, relative smallness of occipital gyres may be a mark-worthy feature; for in some inferior brains one may observe a somewhat smaller *relative* size of the occipital lobe, at least as gauged by antero-posterior measurement. This is not in harmony with widely accepted views which implicitly teach that *relative largeness* of occipital lobes, and not relative smallness, indicates inferiority. The teaching is true of one side of the shield. But if we examine the brains of microcephales we find in some, even of those who have survived to adult life, that the occipital lobes are often decidedly shortened, relatively to the entire hemispherical length, or even if of good *relative* antero-posterior length yet are curtailed in dimension and thin from above downwards, fail to fully or normally cover the cerebellum posteriorly, and look as if the lower part of the occipital lobes is deficient or small, and these lobes thrust upward by the cerebellum. And the *relative* size of some occipital lobes, in what I term *microcephaloid* conditions, is smaller than normal. One is reassured as to the accuracy of this observation by the fact that the general trend of researches made of late years goes to confirm, *as regards certain points*, the conclusions of Rudolf Wagner, who, a third of a century ago, asserted that microcephaly pertains partly to a developmental arrest of the posterior lobes of the cerebrum, and seems to commence in the third and fourth months of embryonic life.

Moreover, I insisted (*loc. cit.*) upon the supreme value, in these studies, of the *microcephaloid* type and condition; and that relative smallness of occipital lobes, defective development of them, undue retention of foetal character by them, reversion to lower animal form manifest in their morphology; are—each and all—valid indications of deterioration and inferiority.

Continuing the subject of occipital brain development in relation to mental status; the first occipital gyre with its annectant portion has been stated to be relatively much developed in man; and to be smaller, more simple, and less developed in negro than in white, in idiots than in normal persons, and to be far less marked in higher apes than in man; while for practical purposes it is slight or absent in lower apes. In one quarter, the view as to the predominant importance of the first external occipital annectant gyre was carried to an extreme, in the statement that it increases in

size from lower apes to primates, and so on through females to greatest fulness in males who are well-endowed mentally. But these assertions have been much shaken and, at least in part, successfully controverted. And I summed up this part of the subject, as follows:—

“ Nevertheless, as regards its relative size, development, form, position and relations, the possession of considerable importance by the first external parieto-occipital annectant gyre remains unshaken, its human characters mark a triumph in the evolutionary struggle; a triumph which probably was a necessary step in the attainment of Man's supremacy, and they remain as the stable fruit and possession of victory. Yet . . . this gain may now yield in immediate direct value to the evolutionary changes effected in some other parts, and among these last, the developmental and evolutionary advance of the representatives of the second external parieto-occipital annectant gyre, and of the inferior parietal lobule in Man, may mark an even greater . . . triumph, and be now of more supreme importance. . . . So that with regard to the upper occipital and the lower parietal regions, the value of the advance in the one is not contravened by the importance of the progression in the other; nor should the lustre of the older triumph be paled by the splendour of the newer.” (Chap. IV).

TEMPORAL LOBE.

In the fifth chapter, after discussing the greater or less fusion of the temporal lobe with the parietal and occipital on the external and inferior cerebral surfaces, the indistinctness of the demarcation, the diversity of recognition and identification of these parts, especially as illustrated by the variance of anatomists' views concerning the inferior parietal lobule; we turned to the study of the *first temporal sulcus* (t_1). We described* the branches of this sulcus, pointed out that, although some of them are absent or slight in most brains, five branches of it may be mentioned. The forms, relations, and positions of the second (t_2) and third (t_3) temporal sulci were also delineated. Next was pointed out that, in different cases, the sulcus separating second and third external parieto-occipital annectant gyres possesses different *apparent* origins. It was also shown that what some recognise as the *anterior occipital furrow* is, in certain

* *Journal of Mental Science*, Jan., 1897, p. 5.

cases, low down, usually joining the preoccipital incision or the third temporal sulcus; whereas what others identify as the anterior occipital furrow is placed high up, and, as a rule, *not* directly connected with the second temporal sulcus; yet by some taken as a continuation or ascending ramus of this sulcus (t_2), or a terminal piece in the flight of it.

UNUSUAL, ABERRANT FORMS OF TEMPORAL GYRES AND FURROWS, AND THEIR SIGNIFICATION.

A number of unusual or aberrant forms of the temporal gyres and furrows were described, and among them that in which the first temporal sulcus (t_1) joins the transverse temporal sulcus, and much of the first temporal gyre (T¹) appears to sink into the Sylvian deeps.

This is a deviation which, other things equal, I was inclined to take as a departure from the usual brain-pattern in the direction of increased formative activity, and, although a deviation from type, yet not a sign of inferiority. Nevertheless there are some considerations which tend the other way; as when the condition is foreshadowed in some foetal brains at the age of six or seven months.

A long course of the first temporal sulcus (t_1), or of one or more of its rami unusually far towards the upper or posterior hemispherical border; unusual irregularity of the sulcus or zig-zag course; unusual degree of forking and sub-forking of it; islet formation in its channel; sharp upward and forward curve of the back end and anterior ascending ramus thereof, as in *some* foetuses, insane persons, criminals and negroes; an unusually vertical (transverse) position of the sulcus, as in some idiots, including examples of microcephalous type:—all seem to be signs of inferiority, and either mark inferior evolutionary status, or the uncommon persistence of foetal characters owing to developmental failure; as the case may be in the particular cerebral hemisphere concerned.

Other aberrant states of temporal gyres and sulci are the numerous confluences of the first temporal sulcus (t_1) with other furrows, indicating defective development of the anastomosing gyres. Or the presence of a very marked temporal incision (of Schwalbe), as in some microcephali.

If the gyrels crossing temporal sulci are deeply sunken and slight, or absent, the gyres are of simple type, present an unusually sagittal aspect and connote inferiority. But with

gyres, which are usually much submerged, rising to the surface the richness of folds and anfractuositities is enhanced, and the aspect of the trend of gyres is more transverse.

The condition produced by breaking up of the first temporal sulcus (*t*) into fissurets ordinarily directed obliquely *upward and backward*, in parallel overlapping series, and not in rectilinear disposition, may be judged of by its "context." *E.g.*, if this last indicates inferiority so may the condition itself. Moreover, this fragmentary state of the sulcus may partly represent persistence of a fetal character.

Very similar remarks apply to the partially-like uncommon form of the second temporal gyre and sulcus when the latter is represented only by a set of fissurets directed downward and backward.

Marked non-symmetry of development of temporal gyres in the two hemispheres of the same brain has been found in some cases of deaf-mutism, and of moral imbecility.

Stunting of the temporal tip; shortening of its normal forward bold projection; dwarfing of its opercular formation generally; tell of developmental hinderance, at least; and perhaps of reverting tendencies as well, in some examples.

A highly marked so-called anterior occipital sulcus (*o.a.*) may occasionally be seen in the eighth-month fœtus; exists in some lunatics; is recorded in some insane delusional criminals.

Other things equal, a well-developed *third temporal sulcus* denotes superiority.

In a form of "family disease" I have observed of which early blindness is one constituent symptom, both right and left lingual lobules were relatively small, and only slightly and irregularly furrowed.

PARIETAL LOBE.

Interparietal Sulcus.

When no incision *downward* from the interparietal sulcus exists in Man the condition, so far, is like that of higher apes (baboon, chimpanzee, orang).

In Man, resemblance to the form observed in some apes is produced by two spurs issuing from the same point of the interparietal sulcus, and diverging towards the upper border of the mantle.

In atypic brains the interparietal sulcus is frequently confluent with various other sulci.

Anastomosing gyres of Interparietal Sulcus.

Absence of bridging gyres across the interparietal sulcus, together with considerable depth, boldness and definition of the latter, associated with a "context" of simplicity, is a sign of inferiority. Indeed, a relatively bold, deep interparietal sulcus, uninterrupted, or nearly so, by deep or superficial gyres, reveals a simian character.

Superficial position of the usually deep anastomosing gyres, in the interparietal sulcus proper, connecting the inferior and superior parietal lobules, constitutes a bridging of the sulcus which, I believe, marks superiority of brain-evolution. And absence of any gyral interruption of this sulcus is comparatively more frequent in the idiot's brain than in that of the ordinary person. Yet a view contrary to the one held here has been maintained as to the superficial gyre sometimes separating the two sagittal portions of the interparietal sulcus; and is to the effect that such surface-position of the gyre denotes undue persistence of a foetal character, and, therefore, untypic form.

In Man, an unusual depth of the interparietal sulcus relatively to that of the central fissure marks inferiority due to phylogenetic reversion.

In some human brains of inferior form the interparietal sulcus mounts with bold sweep on the lateral and upper cerebral aspects; and then, behind, curves sharply backward, outward and downward; much as in some ape-forms.

Angular disposition of sagittal parts of Interparietal Sulcus.

In some cases the sagittal part of the sulcus consists of two pieces at a right, or only slightly obtuse, angle to each other. This disposition reminds one strongly of the simian appearance in some species in which the interparietal sulcus incurves strongly towards the upper mantle-border.

Unusual furrow-appearance. Reduplication of Interparietal Sulcus (i.p.)

Sometimes, apparently, there is more or less reduplication of the interparietal sulcus. The lower furrow of the two represents the anterior part of an anomalous interparietal sulcus, unusual in position, direction and relations, and cut

off by a stretch of cortical surface from the upper furrow, which latter has the aspect of an elongated posterior sagittal portion of the interparietal.

But more pronounced partial reduplication of the interparietal sulcus may occur. This occasionally brings about more or less antero-posterior division of the superior parietal lobule by a sulcus somewhat parallel to the upper border of the mantle; a condition which marks irregular and inferior conformation.

SUPERIOR PARIETAL LOBULE.

This may not only evince the sagittal division just described. For transverse, and more often oblique, sulci may divide or partly divide it into several sub-gyres. An unusual degree of division of the lobule by furrows running thus obliquely backward and inward, is a deviation from usual form due to increase of developmental activity on the usual normal lines, which, more often at least, is in the direction of superiority.

INFERIOR PARIETAL LOBULE.

Tracing evolutionary advances of this part in the animal scale, I stated (*loc. cit.*) that "in Man an enormous and rich lower parietal development has occurred; in every quarter the inferior parietal region has become strong and aggressive, it has thrust aside opposition, and has swollen in an opercular expansion as an emblem of domination over adjoining cortical realms. . . . A rich complexity of the cerebral folds and furrows in the parietal lobes, if on fairly regular lines and not too atypically irregular, indicates superiority in form. But in many brains, otherwise, or in some other respects, of inferior form, there is a richness of parietal gyre-and-furrow-development, but it is irregular and extremely atypical." In the parietal area this irregularity and bizarrerie of the outward architectural conformation are of greater morphological importance as denoting aberration from usual form or from type, than is an undue and atypic simplicity, or defective complexity, of the same parts.

Obvious to the observer is the great contrast between the brain of lower ape, with its occipital operculum overhanging the angular gyre; and the human brain, with the several bold superficial annectant gyres effecting the transition between occipital gyres on the one hand and parietal and temporal on the other, the lower-ape operculum having

totally disappeared. In the fourth chapter, and in the sixth, we laid stress upon the relatively high development of the lower parietal lobule in brains of superior type, as *e.g.* in the lines:—"Nor is the upward the only direction in which the inferior parietal lobule tends to increase as we ascend the evolutionary scale in its highest grades. For in these the tendency is for the posterior part of the Sylvian fissure to be ever more and more shortened by the successful struggle for the surface waged by gyres which are submerged in animals lower in the scale of primates; this rise of gyres to the surface obliterating the back part of the Sylvian fissure, and increasing the parietal territory. A somewhat similar process shortens the first temporal sulcus above and behind. The parietal lobe also tends to overhang the occipital lobe, behind; and the frontal lobe in front; the 'inferior parietal lobule' tends to overhang and dominate the 'superior' one. The angular and supra-marginal gyres—or, better, the tri-partite divisions of the inferior parietal lobule—in the course of this evolution attain to considerable size and great complexity."

A relatively small supra-marginal gyre is seen in some brains otherwise, or in some respects, of inferior conformation.

And general *relative* smallness of inferior parietal lobule, and defective opercular character of it, denote both defective development and reversion in type.

POST-CENTRAL SULCI.

A condition which, as far as it goes, seems to mark a fairly good position, or even a decided tinge of superiority, is that of a well-marked upper post-central sulcus, together with its tendency to a comparative degree of union with both the lower post-central sulcus and the interparietal proper.

In general terms, confluence of the several elements of the "intra-parietal" sulcus group stamps the adult European brain; and separateness the foetal.

Other things equal, disjunction of inferior and superior post-central sulcus, as also of both from the interparietal proper, tends to make for inferiority. And Cunningham showed that in man "there appears to be a general tendency towards a union of the two originally distinct post-central elements" of the "intraparietal" sulcus.

In the seventh chapter, it was pointed out that the *trans-*

verse precentral and transverse post-central sulci differ much in different cases as to form, length, depth, direction; as to whether they boldly cleave the gyri and distinctly rise from the Sylvian fissure; or only notch the opercular edge, or fail to do so and repose on the external opercular and gyral surface; and as to whether they assume the aspect of a cleft, or of a furrow, or partly of both. The modifications are numerous in the case of either: but difficulties meet acceptance of the possible view that in the case of either the thing itself may be one.*

Concerning the deviation from usual form consisting of a bold and unusually long furrowing of lower part of surface of one, or other, or both, of the central gyres; and far more frequently of the posterior one; by nearly vertical fissurets: these last, in some examples at least, mark an unusual extent and somewhat aberrant or less favourite position of the transverse pre-central and post-central sulci; or, possibly, duplication of a post-central or pre-central furrow-ement.

This form, and unusual degree, of furrowing of lower portions of central gyres from the Sylvian, denote a developmental aberration. They are occasionally seen also in microcephales.

THE CENTRAL FISSURE. (*F. of Vicq d'Azyr. F. of Rolando*).

In brains of different grades some varieties exist as to the position of this fissure, be it somewhat more forward or backward than usual. As an unwonted condition, the fissure may be confluent with other furrows. These confluences are comparatively frequent in inferior brains. *E.g.*, confluence of central fissure and Sylvian is not infrequent in idiots.

Or the central fissure may be bridged: or may fail to cross or reach the upper mantle edge.

It has been asserted that in poorly developed brains the central gyri are not sinuous or complicated or elaborated, and that the central fissure, in inferior types, is less sinuous and less likely to be fully separated from the great longitudinal fissure and from the Sylvian; confluence of it above and below, with these, probably indicating low type. Yet most of these conditions are not often a criterion of low type or of inferiority. For in many cases the central fissure

* *Journal of Mental Science*, April, 1897, p. 219.

of low type is not unusually straight, devoid of zigzag undulation or sinuous curve; on the contrary, some decidedly inferior brains have sinuous or zigzag central fissures. And, so far from indicating low type, the coming over of the central fissure slightly on the mesial aspect is the typical condition, usually occurs during the last month of foetal life, and is normal in the adult. Indeed, its failure to occur would, so far, denote an inferior brain.

Nevertheless, a short straight smooth-walled central fissure, devoid of deep annectant gyrels, resembles that of lower apes.

Bridging of the central fissure a little above, or about, its middle, is a departure in the direction of inferiority, and is equivalent to an unusual and abnormal retention of an early foetal character; or, in cases, may indicate an atavism.

Abnormal, also, is the significance of a truly bridging gyrel about, or below, the junction of middle and lower thirds of the fissure, and possibly representing a surface position of the deep gyrel which, in some cases, marks a conjunction of the central fissure with transverse precentral sulcus, and now seems to be placed higher up than usual owing to the defective development of the central fissure in a brain of low type.

Absence of forward projection of the posterior lip of the central fissure in its lower half, tells for simplicity and inferiority of brain form.

Forkings and unusual spurs of central fissure, and islets of cortex in its channel, signify irregularity and deviation of formative action.

In Man, a central fissure shallow relatively to the interparietal sulcus, betrays a tendency to simian character.

In brains of grossly defective and irregular form, the relative position of the central and subfrontal fissures may be strangely disturbed.

An unusually vertical position of central fissure in adult human brain, if not explainable by brachycephaly, may sometimes be an unusual preservation of its earlier foetal position.

Attempts have been made to establish *human sexual differences* with regard to the dimensions of the frontal lobe as measured up to the central fissure. But differences in the average *absolute* length of the lobe in the two sexes are of little value. The true problem is to find whether the average *relative* length of the lobe differs in the sexes; and apparently it does not, in any noteworthy sense.

On the *absolute length of the central fissure itself* human sexual differences have been assigned. Yet the greater *absolute length* in males is invalid to sustain the conclusion built upon it. The *relative length* is required; and the relative length of the fissure to total length of upper mantle edge shows only slight differences in the sexes.

Also upon the *direction or inclination of the central fissure* establishment of sexual difference has been attempted; but is invalid, decided sexual differences not existing in this respect.

FALSE APPEARANCE AS OF TWO OR THREE CENTRAL FISSURES.

Specious appearance of two or of three central fissures may arise from extremely bold definition and unusually great development of the post-central sulcus group, or of the pre-central sulcus group, or of both.

The modes in which a continuous or nearly continuous precentral furrow is formed were discussed.* The significance of this particular simulation of the formation of a second central fissure is not very easy to appraise; different points tell for and against it as an indication of either advance or falling back. Yet it does not usually denote a brain of high grade. A long, bold, precentral sulcus representing, practically, the constituents of the whole precentral sulcus-group—which usually are more or less separate—is found in some brains of low or aberrant type, or even microcephalic.

INSULA.

Healthy adult human brains in the prime of life with the Insula partly uncovered are defective in form, showing imperfect opercular development, and to some extent representing conditions found temporarily in the human fœtus, and tending to disappear in subsequent life; and found as a permanent state in ape-brain. This partial uncovering of the Insula is observed in some brains of low form; as, for example, in some idiots, imbeciles and criminals; and, it has been said, in lower races of mankind.

The "fronto-orbital" sulcus of the anthropoid appears to be the homologue chiefly of the anterior marginal sulcus of the Insula; and probably to a slight extent of the anterior horizontal Sylvian ramus, in normal adult human brain. In man, a well-defined representative of the fronto-orbital

* *Journal of Mental Science*, April, 1897, p. 242.

sulcus of the anthropoid ape tells, as far as it goes, of reverting tendencies toward simian type. In some microcephales its resemblance to the condition normal to certain apes is very close.

Signifying inferiority, also, are *relative* marked smallness of Insula, defective conformation of its gyres and furrows; replacement of its usual folded state by a smooth layer of grey matter, or by flattened and unusually radiating volutions.

FRONTAL LOBES.

In the eighth chapter, we compared the several lobes of the brain.

In lower-type brains the frontal lobes do not hold the position of size, relatively to other lobes, that the *length* of their upper border would speciously indicate; in many such cases that length may be, *relatively*, good, even above normal *relative* length; but the size of the lobe is not *absolutely* good, nor its development even *relatively* so. The specious appearance of being good or above normal in size is partly, or sometimes, due to the arrested development of other parts of the hemisphere, and partly to the fact that the frontal lobes, although perhaps of good *relative length*, are often narrow, or pointed, or shallow from above downwards, and, as regards this last, especially does the *frontal opercular formation* fail. It is in respect of this opercular formation, perhaps more than of anything else in its larger morphology, that the frontal lobe of the fœtus and of the new-born is surpassed by that of the human adult, the frontal lobe of the ape by that of man. In microcephales, also, the frontal lobe, although it may be of long or over-long *upper frontal relative index*, is defective in its lower and opercular portion, and may present that gradual slope of orbital over on to external lateral frontal surface, and that partial exposure of the Insula, which reproduce an image of the simian form in this region.

Degree of convolitional elaboration of frontal lobes has been held to indicate the most striking difference between brains externally; and in the frontals of richly convoluted brains attention has been drawn to the numerous divisions by short secondary sulci, and the bridging of frontal furrows by small secondary gyres.

In some defective brains, frontal gyres and sulci are very irregular. Simple or boldly defined frontal gyres have been

found in delusional lunatics, idiots, negroes; and in imbeciles numerous and unusually small gyri in flattened frontal lobes. In some microcephales the whole frontal lobes are small.

The third frontal gyres are small and ill-developed on one side or on both in many microcephalous idiots, and in some deaf-mutes.

On the external cerebral surface there may be only a *single anterior Sylvian ramus*. Yet there are several conditions which may modify our view on this part of the morphology in many brains; *e.g.*, such as a partly orbital situation of the "cap"; or, again, what I termed a "double cap"; or such as a deep cleft simulating an anterior Sylvian ramus. Smallness of the frontal opercular region, including a dwarfish or rudimentary state of the cap, is a mark of inferiority. And the third frontal gyre has much importance in the characterisation of brains of high type. Indeed, comparison of the normal adult human cerebrum of high type with (*a*) the foetal human brain, and with (*b*) the brain either of anthropoid, or of low, apes, seems to indicate that, among many of importance, the most important factor of the difference between the human and ape frontals is the great downward growth of the lobe, especially in front, and complete opercular formation; a condition which involves a better formation of the third frontal gyre, also.

Coming to the sulci:—The *first frontal furrow* of adult human brain may be represented by a series of overlapping, obliquely-set fissurets, directed forward and inward; and thus may have a disposition which resembles the usual temporary one in the human foetus, and is fixed in permanency in the brain of some apes, as the baboon. Or the separate sulcus-elements may be set nearly in a straight line, and may be shallow. These discontinuous states of the sulcus are less apt to occur in the white than in the negro. In fact, more or less decided continuity of these furrow-elements distinguishes the white's brain rather than the negro's; the adult brain rather than the foetal; the human brain rather than the simian; and the sulcus only first appears in the animal scale with the higher apes. In Man, its unusual slightness or shallowness, or degree of interruption, betokens inferiority; other things being equal.

A short straight *second frontal sulcus*, devoid of anastomosing gyrels, shows resemblance to simian form. An irregular sectional state of the sulcus may indicate undue

persistence of foetal condition, is found in some microcephales with a well-marked lower precentral sulcus, and shows absence of high evolutionary grade. The incision of the cap develops comparatively late; it and its adjuncts are recent phylogenetic acquirements, and, other things equal, tend to mark brain-superiority.

Ceteris paribus, union of second frontal and inferior precentral sulci marks a somewhat higher brain-form than their discontinuity does. A more than usually evident and sagittal upper ramus of *inferior precentral sulcus*, may indicate unusual persistence of foetal character, in the adult. A somewhat sickle-shaped inferior precentral sulcus seems like a lower simian morphological reminiscence; or like retention of a foetal character occasionally seen. Marked confluence of precentral sulcus element with Sylvian fissure is apt to be accompanied with absence of high developmental grade; it exists in some microcephales. And much the same is true of its free confluence with the central fissure.

Defective formation of the *superior precentral sulcus* is frequent in brains of a lower order. Its shortness, or shallowness, or absence indicates developmental failure, or, sometimes, reversion in type.

First and Second frontal intra-gyral furrows.

Of these, the *first* is ill-marked in many of the brains of very defective morphology; but may be distinctly impressed in insane persons who possess brains of comparatively high evolution. In the insane, the *second* is much more often clearly and boldly indenting than is the first, yet may be feebly marked.

According to one view this *second* frontal intra-gyral furrow possesses early phylogenetic formation; but by the opposing view only makes first appearance in higher anthropoid apes.

The *first* frontal intra-gyral furrow is the very last of the series of frontal sulci to become visible. It makes appearance near the very end of foetal life; or more often during the first month of infancy. Phylogenetically, it is recent. It first appears in Man, the summit of the evolutionary scale. Even in the negro, it is only defectively stamped on the brain.

Other things equal, a well-marked degree of the normal state of these furrows denotes superiority; their absence, or slightness, or irregularity of form, denotes inferiority.

The developmental, and the inferred phylogenetic, history of these two furrow-sets are made even more particularly interesting in virtue of their bearing on the significance of a well-defined arrangement of the sagittal frontal convolutions in four or five tiers (instead of three); the next subject to mention.

INCREASED NUMBER OF FRONTAL CONVOLUTIONARY TIERS.

The upper and lateral frontal convexity may be more or less divided into four tiers of convolutions. And more or less marked division of this frontal surface into five tiers of convolutions may occur.

Most frequently the division is of *the second frontal gyre*. In its front half, the convolution's own intra-gyral sulcus effects the partition. While, behind, the upper or horizontal ramus of the inferior precentral sulcus may intercalate itself between the two roots of the gyre, and may be so directed anteriorly as to join, or nearly so, with the intra-gyral sulcus, and by its backward continuing branch may abut upon, or even enter, a superior precentral element, thus, in one way or the other, dividing much of the second frontal convolution lengthwise. Other furrow elements may now and then assist in this partition of the second frontal convolution.

The upper aspect of *the first frontal gyre* may be partly divided by an unusual length depth and definition of its intra-gyral furrow-system; or by great length of its external (lateral) root, running far forward and lengthwise, before it fuses with the gyre, and correspondingly dividing the gyral area.

Thus, the exaggerated formation of intra-gyral furrows, the length and separation of roots, and the aid of adjunct furrow-elements, may lead to division of either the *second* or *first* frontal gyre, or of both, in part or in whole, and sagittally, into two superimposed tiers. Infrequent, and inconsiderable as a rule, is partial furrowing of the *third* frontal gyre into two, horizontally.

Found in some brains of criminals, lunatics, and persons mentally defective, this four-tier type has been stated to indicate grave reversion and atypy. But against this view I* argued that the frontal type of four (and five) gyral tiers—especially when due to division of upper surface of first frontal gyre—marks a higher than usual, and not a lower, brain-formation; and added that this “is compatible with

* *Journal of Mental Science*, April, 1897, p. 244.

mental aberrancy, with unstable and labile mental activities, lively and powerful but not well-directed—in a word a brain-function lacking in balance.” As bearing definitely on this subject, reference was made to the contested homology of the *sulcus rectus* of the ape. Thus the superiority (*cet. par.*) of the frontal four-tier type was asserted.

DIRECTION OF FRONTAL FURROWS AND GYRES; REAL OR SPECIOUS.

The frontal gyres and furrows have sometimes an appearance of being much twisted or deflected in their forward course, so as to appear, in an unusual degree, as if trending forward, upward, and inward, in a diagonal direction. It is a too extreme degree of a normal appearance and condition.

It was then pointed out that in foetus and child a similar direction is often taken by overlapping series of furrows representing sulci in this region; that a like direction is often assumed by certain furrow-elements in the adult; that a similar disposition of some furrow-elements may be observed in a few apes; and that, in adult brain, this tendency for fissures and gyres to run obliquely upward, forward and inward towards the upper mantle-border, in some cases apparently indicates persistence of foetal character and a degree of developmental arrest; in some, possibly, even indicates reversion.

SYLVIAN FISSURE.

Unusual confluences of the Sylvian fissure mark, so far, a deviation in form, and, often at least, mean defective formation of opercula and of annectant gyres. Greater *relative* length of horizontal posterior limb of Sylvian fissure seems to denote inferiority. And a tendency towards unduly vertical direction of the same has been noticed in brains of some idiots and negroes. Indeed, in microcephales the tendency to perpendicular trend may be very decided.

More recent researches have confirmed these views, by showing that the average *relative* length of the posterior horizontal Sylvian ramus is greater in human foetus and in apes than in human adult. And that the average Sylvian angle is greater in adult than in child, in the human, than in the ape, brain; and on left side than on right. The absolute length, and still more the relative length, of the same, is greater, on the average, in females than in males.

Shortening of the Sylvian fissure, therefore, is a character of the human, and especially of the male, brain. On the contrary, a great *relative* length of the external Sylvian fissure denotes a formative reversion.

In Man and orang the back part of the Sylvian and first temporal sulcus are shortened, and the parietal lobe gains surface-extension from before backward. As we ascend the animal scale, the supra-marginal gyre, which in lower apes is sunken in the Sylvian depth, is observed to gradually attain the surface—at first on one side and inconstantly, but in higher forms on both sides and constantly—to become broader and broader; and, instead of forming a single loop, to become doubled or complicately convolute.

In Man, the region of these recent gains is still very variable, and the transverse temporo-parietal annectant gyres, like fresh invaders, seem to struggle for the surface.

In the ninth Chapter was described

A STANDARD OF ABERRANT CONFORMATIONS OF GYRES AND FURROWS, FRAMED AS A TEST AND CONSTITUTING A STIGMA OF HEREDITARY MENTAL DEGENERACY.

In the deviations from usual form or type already described the material is provided for tests or criteria of various forms of defective or aberrant brain development. These peculiarities of brain-architecture are especially valid and enlightening in relation to the great group of mental diseases which are essentially based in hereditary mental degeneracy, and in which there are, more or less, the recognised signs of degeneracy of mind and body in the individual or the ancestry. Heredity and degeneracy, of course, do not play an equally important part in all of such forms of mental disease as are included here. For, throughout this large group of mental affections the somatic and psychic stigmata of degeneracy exist more or less, but their nature and grade differ much in the several members of it. Therefore, I tried to frame a composite and sufficiently elastic standard of abnormal superficial brain-architecture to use as a test or criterion of the degenerate, defective and aberrant developmental peculiarities found in the brain in the several forms of predominantly hereditary mental disease. Broadly and summarily viewed, it amounts to a somatic indication of hereditary or of congenital mental degeneracy.

This standard is taken from the brains of persons with varieties and degrees of imbecility, or closely allied states with mental peculiarities or perversions (congenital, and chiefly developmental, imbecility; original paranoia; analogous cases of similar mental status).

SUMMARY OF BRAIN MORPHOLOGY IN THE STANDARD GROUP OF DEVIATIONS AND DEFECTS; GROUP I.

GROUP I. GENERAL.

Often :—Inequality in size and weight of the two cerebral hemispheres.

Variations from usual limits of *relative size* of some of the cerebral lobes.

Smallness of gyri in some.

Irregularity of gyres and furrows; partly from undue extension or branching of sulci, or their duplication.

Simple bold gyres and furrows; partly from defective development of annectant or anastomosing gyres and gyrels.

LOCAL. Frontal Lobe.

Often :—Differences in *relative size* and development of the several frontal gyres, or of the gyres of same name in the two cerebral hemispheres.

Often :—Simple and strongly defined are the frontal gyres, or small; or irregular and odd in shape and outline. They may look as if directed upward forward and inward; or may be in four tiers.

The two upper frontal gyres may be cut across by unusual, or unusually developed, sulci.

The third frontal gyre is often small, or irregular and ill-defined. A dwarfish condition of frontal and parietal opercula of the Sylvian region is apt to occur, and slight sloping over of orbital surface on to external frontal aspect may be seen. The central gyres may be deeply furrowed from the Sylvian fissure. Only a single *anterior Sylvian limb* may be apparent. Irregularities and defects of frontal furrows are frequent, and precentral-sulcus elements may enter central or Sylvian fissure.

On *mesial surface*, one or more of several conditions may be found; such as small fornicatus; sub-frontal fissure upturn opposite to central fissure, or bifurcate, or failing to reach upper border, or reduced to a slight gradual flexure, or its relative position different in the two hemispheres. Or sub-frontal fissure joined with sub-parietal; or dupli-

cated; or in several scattered pieces. Some of superorbital sulci; or the preoval furrow; may be defective or absent.

Sylvian. Posterior horizontal limb of Sylvian fissure may run far back, or be sharply up-curved, behind; or various sulci may be confluent with Sylvian fissure. Occasionally, is a possible representative of anthropoid fronto-orbital sulcus.

Irregular states of *central fissure* may be seen.

Parietal. Relative smallness of supra-marginal gyre; defective opercular development of inferior parietal lobule; great and irregular division of parietals by branching of sulci; are frequent. The interparietal sulcus may be a relatively simple, deep, bold, unbridged furrow; it may be cut into by various sulci, or may join the Sylvian; its sagittal portions may be set at about a right angle to each other. Occasionally a "præcuneolus" is observed.

The *Occipital Lobes* may diverge behind and partly uncover the cerebellum. The gyres may be small, ill-marked, or few and simple; invaded by unusual sulci, their furrows irregular. The external limb of the parieto-occipital fissure may be unusually long; it may depress part of first external annectant, and enter interparietal sulcus. On the mesial aspect, the fissure may be interrupted by a normally sunken gyre rising towards, or to the surface; or may be bi- or tri-furcate, or throw off long spurs; or may be short, perhaps failing to reach the upper mantle-border; or may be unduly shallow relatively to the depth and boldness of the calcarine fissure.

The cuneus may be small or irregular; it may be deeply ploughed up by a branch from the parieto-occipital fissure, or from "the stem;" an appearance much as in some microcephales and some apes. The back end of calcarine may be unusually far forward, as in apes. The calcarine may be very zigzag; or deep and bold relatively to the parieto-occipital.

Temporal Lobes. In some examples, the first temporal gyre seems to sink into the Sylvian fissure. Sometimes the gyres are modified by ill-marked, sectional, states of the first temporal sulcus; or by its sharp upward and forward curve, behind; or by its unduly vertical trend; or by considerable relative length of its trunk or rami; or their irregularity. Defect of anastomosing gyres conduces to simplicity and strong definition of the sulcus and bordering gyres. The second temporal sulcus may be sectional, and

the pieces may be directed obliquely downward and backward. The temporal incision may be long and bold. The temporal pole may be stunted; or the temporal operculum defectively formed, in fact abortive.

INFERIOR SURFACE. The occipito-temporal gyres and furrows may be very irregular, unusual in shape and relations, very unsymmetrical on the two sides. The collateral fissure may be only defectively formed; or, on the other hand, may be very long and zigzag; or may slightly join the "stem" or the calcarine.

SUMMARY OF COMPARISONS DETAILED IN CHAPTER XI.

Results of the Application of the Standard of Deviations and Defects in Comparisons between the Gyres and Furrows in several forms of Mental Disease, and those in the Standard Group of Cases.

This is the subject of the eleventh Chapter, the external cortical architecture being compared in several members of the large group of mental diseases in which heredity and degeneracy play so important a part.

FIRSTLY, IS COMPARED THE CEREBRAL CONFIGURATION OF THE STANDARD GROUP, OR "I.," WITH THAT OF GROUP II., OR *paranoia of more or less psycho-neurosal type*. A synopsis, only, is stated here.

IN "II.," as compared with the standard, "I.," are:—

Far less inequality of size and weight of the brain's two cerebral hemispheres:—

Less smallness of gyri; or irregularity of gyres and furrows; or subdivision of gyres by furrows.

In the Frontal gyres of II., are:—

Less often differences in the relative development and size of the several gyres; or smallness of them. And *somewhat less* of extra, or unusually marked, furrows either ploughed up from the Sylvian, or vertically-placed on the two upper frontal gyres; and of irregular division by furrows of various kinds.

In Parietal gyres of II., are:—Somewhat less of irregular sub-division of gyres by sulci; the post-central sulcus-group less often bold and long:—the inter-parietal sulcus less cut into by furrows.

In Occipital lobes of "II.":—*Less often* divergence of occipital lobes behind, so as to partially uncover the cere-

bellum: *Less* gyral and fissural irregularity: less invasion by unusual furrows: less often smallness of occipital lobes or aberrant conditions of cuneus. Also, differences on other points.

In Temporal lobes of "II.":—More departure from usual relation of size between the several gyres:—

Less frequent forkings, irregularities, or long prongs of first temporal sulcus:—

Second temporal sulcus more often highly marked or extending far.

On Mesial Surface of "II.":—fewer examples of aberrant form or position of sub-frontal fissure and its upturn.

On Inferior Surface of "II.":—the collateral fissure somewhat less affected, on the average.

COMPARISON BETWEEN THE STANDARD GROUP, OR "I.," AND GROUP "III." (*paranoia of medium degenerate type*).

IN "III.," as compared with the Standard, "I.," and stated only in summary, here; are:—

The *Frontal* lobes, on the whole, affected similarly as, but somewhat less than, in "I."

Precentral sulcus much less often abnormal:—

In *Parietal* lobes; similar, but somewhat less, deviations of gyral form (yet more, as regards one feature). The quadrate lobule affected with considerable frequency.

The *Occipital* lobes in "III." present, on the average, *less* posterior divergence, slightly less furrowing, less affection of calcarine fissure; but more gyral irregularity.

On the whole, the *Temporal* lobes are nearly but not quite the same as in "I."

Some differences exist between "III." and "I." as to the aberrations from usual form of *anterior Mesial surface* and *Inferior surface* of cerebrum.

COMPARISON BETWEEN THE STANDARD GROUP, "I.," AND GROUP "V." (*with chronic delusions of somewhat paranoiac-type*).

IN "V.," the *Frontal gyres* nearly as much affected, on the average, as in "I.," and the precentral and post-central sulci considerably affected in like manner as in "I."

The *Parietal gyres* less affected than in "I.," yet marked examples of two individual deviations occur.

The *Occipital and Temporal regions* and the *Mesial and Inferior Cerebral Surfaces* are less affected than in "I.," on the average.

COMPARISON BETWEEN THE STANDARD GROUP "I." ; AND GROUP "VI." (*predominantly Impulsive*).

IN GROUP "VI." :—The *Frontal* lobes, nearly as in I., on some points :—

The *Parietal* lobes, somewhat less often affected than in "I.," but similarly in kind. Yet marked deviations from usual form of quadrate lobule may occur.

Deviations of the *Occipital* gyres are less frequent than in "I.," but in a few are extreme and very unusual.

Affection of *Temporal* lobes less frequent than in "I.," yet occasionally highly marked.

Central, calcarine, parieto-occipital, interparietal and temporal furrows less affected, on the whole, than in "I."

COMPARISON BETWEEN THE STANDARD GROUP "I;" AND GROUP VII. (*Epileptic*).

IN "VII." :—The brains larger on average than in "I." :—Inequality in weight of the two cerebral hemispheres occurs but little :—

The *Parietal* and *Temporal* gyres are, on the whole, *less* affected than in "I."

The external part of parieto-occipital fissure may be long ; and the pre-central and post-central sulci may be highly marked.

COMPARISON between them showed that GROUP "VIII.," or *Periodical Insanity*, possessed a brain-surface morphology less unusual and atypical than in the Standard Group "I." ; and *on the average much as in Group "II.,"* (q.v., Chapter X.)

This last is an interesting confirmation of views expressed in preceding pages ; inasmuch as Group "II." and Group "VIII.," according to my opinion, occupy, nosologically, a similar position with regard to the degree in which they are the outcome of heredity and degeneracy. In this respect they are among the most mildly affected of the groups constituting the multitude essentially based in heredity and degeneracy. Indeed, they are to some extent transition groups.

In conclusion. Valuable as I believe the outcome of the study of brain-surface morphology to be, it must not be regarded as in any sense a substitute for the usual lines of examination of brain and nervous system in the insane. That study does not replace the methods hitherto in use ; but is auxiliary to them, and augments our knowledge of the physical bases of mental defects and perversions. In the

study of psychic status and condition, it gives us a wider range of mental vision, and from a higher level; it promotes that systematic arrangement, and that application, of knowledge, which, respectively, constitute the very essence of philosophic, and of practical, science.

Visits to Danish Asylums for the Feeble-Minded, and other Institutions. By WILLIAM W. IRELAND, M.D., Mavisbush House, Polton, Midlothian.

The desire of visiting the institutions in Denmark for the education of the defective classes was aroused in me by the praises bestowed upon them by my friend Jakob Soethre and Dr. Frederick Starr.* I knew that they were both men well fitted to judge correctly, and not likely to be misled by appearances, which are often deceptive and sometimes are meant to be so. What indeed struck me was the statement that there was no attempt at show in the Danish Asylums. They must, therefore, I thought, depend upon their intrinsic merits. I crossed the North Sea from Hull to Amsterdam in the "Professor Buys," a route which I can recommend for those who prefer a short sea passage. I travelled through Northern Germany, stopping with some friends at Bremen, where I visited several institutions. In the beginning of July I reached Copenhagen, and soon got into communication with my friend, A. Friis, the Medical Superintendent of the Custodial Asylum for Imbeciles at Ebberød-gaard. Besides his eminent qualities as a physician and a man of literary culture, Dr. Friis has the especial merit of speaking English fluently, and, through his kind attentions, I escaped the difficulties and perplexities to which I should have been otherwise exposed.

GAMLE BAKKEHUS,

the oldest training school for imbeciles in Denmark, opened in 1856, is situated in the western suburb of Copenhagen, amongst pleasure gardens and divers places of recreation, and not far from the fine park of Frederiksberg. The presence of a large city renders ground dear, and this was no doubt the reason why the playgrounds and gardens were somewhat small in proportion to the

* In "A Visit to the Keller Institutes in Denmark," by Frederick Starr, in the *Charitable Observer*, August, 1896. Lincoln, Illinois.

number of inmates. I regret that I missed seeing the Superintendent, Mr. E. V. Rolsted, who was from home. The holidays were commencing, and many of the pupils were also absent. Dr. Friis and I were shown through the place by a teacher, Mr. M. Damm, who spoke German. He said there were about 200 children in the training school, some of them not educable. For these there were four male and sixteen female teachers. Only one governess lived in the house. No doubt a city like Copenhagen affords facilities for skilful teachers amongst its residents, but I always considered that the presence of the governesses was of great advantage even beyond school hours. From the Report for 1896 it appears that the whole staff comprises thirty-one persons, including the visiting physician, Dr. J. F. Nielsen. Amongst these are a singing master, a director of work, a teacher of gymnastics, a gardener, a doorkeeper, and a stoker. Ten of these employés were males and twenty-one females. There were also two male servants and twenty-four female domestics, nurses, chamber-maids, sewing-maids, and cooks. Out of ninety-five pupils, twelve adults were learning to work, and eighty-one were attending school. The schoolhouse was a roomy building of three stories, with wide passages; the schoolrooms were small, but airy and light, and well furnished with objects of illustration. In my opinion small schoolrooms are much the best, as several classes held together in one room distract the attention, and with imbeciles the great difficulty is to fix the attention. The dormitories for the boys and girls were in separate blocks, and another building was used for the cooking and stores. From the Annual Report of 1896 it appears that the average number of inmates during the year was 196. Nineteen had been dismissed (12 males, 7 females) and 15 (7 males and 8 females) sent to Ebberödgaard, and 37 new pupils had been admitted—23 males and 14 females; 3 males and 1 female had died during the year.

Cooking for dinner was going on busily; the provisions were good, and the children seemed well nourished. Each child was supplied with fork and spoon, but, to judge from what I saw, only about 10 per cent. used knives at table. It was easy to see that education was the main object at this institution, and that it was prosecuted in a diligent and intelligent manner without any attempts to make the results showy or striking. The number of teachers allowed the separation into many appropriate classes for the divers

grades of intelligence. A young lady, who spoke good English, showed me her stores of sewing, knitting, and embroidery, all neat and in good taste. The manufactures done in the workshops consisted of common brushes of various kinds, mats made of rushes, and some simple articles in wood. There was shown a ship model constructed by some expert pupil, and miniature Danish flags which could be pulled up and down upon the staff. There was a separate house for the infirmary—a wan looking building. At the door, on a movable bed, lay a hydrocephalic boy, whose huge head contrasted with his attenuated frame. The circumference was 695 millimetres. He seemed intelligent, and could speak and read. There were several children in the infirmary going in consumption. In the rooms there was a want of light, and I saw few objects of amusement; but there was a kindly old nurse. Of the four deaths during the year three were from phthisis and one from epilepsy. As far as I could learn there were no sporadic cretins in the institution. I noticed several microcephales and a considerable proportion of Mongolian idiots.

The dormitories were plain in their furnishings, though clean and comfortable; there were iron beds of a dull colour, without the brass ornaments or gay painting which make iron beds look attractive in our country. I noticed this dull pattern in almost all the dormitories which I inspected; the prices mentioned seemed to me so high that I said they could get better beds from Britain at a much less cost. One Superintendent, however, assured me that this was not the case.

It is noteworthy that in the Reports the names of the pupils are printed in full. This shows a decided difference in national character between the Danes and the Scots, for such a list in Scotland would cause great offence. From the reserved and cautious nature of my countrymen they persistently avoid any information which might harm their interests in any way.

THE CUSTODIAL ASYLUM OF EBBERÖDGAARD.

After the institution at Bakkehus had gone on for thirty years a Commission was formed in 1886 to consider the results, and to take advantage of experience for further arrangements. This Commission, which consisted of six members, already acquainted with the subject, made a careful and elaborate enquiry. They considered the uses

and functions of a Training School for Idiots, of a fostering institution, and of a custodial asylum to which all might be sent who could not be returned to their parents, or who had no parents or guardians. It was determined to carry on the work of teaching in the Bakkehus, and to build an asylum in the country where adults could be received, where the work of those who could be taught to work could be utilised, and those who could not work should have proper care, medical treatment, and protection. For this purpose a piece of land was bought, a deserted farm at Ebberödgaard, about two miles from the station of Birkeröd, on the railway line between Copenhagen and Elsinore. This asylum was opened in June, 1892, with 131 cases (80 males and 51 females). The plan from the beginning was complete and comprehensive, information having been collected through enquiries carried on in various countries. Through the kindness and hospitality of Dr. Friis I was enabled to take a pretty complete survey of the buildings and inmates. Ebberödgaard is situated in a beautiful undulating country finely wooded. The asylum is made up of blocks of houses, generally of two or, in the middle, of three stories, symmetrically arranged with open spaces, lawns or playgrounds between. There are separate houses for the helpless, for the workshops, for the male and female dormitories, for the hospital, and a small chapel for burial services. One group of the asylum buildings is separated from the other group by a beautiful avenue of tall lime trees, planted by a Lutheran Bishop, the proprietor of the ground long ago. The grounds occupy 150 acres, consisting of garden, arable, and meadow land. The water supply of the establishment comes from two artesian wells in the neighbouring woods. After being filtered the water is pumped through iron pipes into the buildings. They have in the farm 50 cows of the good Danish breed, three dairymaids look after the cows; milking is too nice an occupation for imbeciles. Most of the milk is consumed on the establishment; but a little butter is made. There were 10 horses and 120 pigs; the sewage is utilised for manuring. They make their own gas, and bake their own bread. The buildings are of brick, of plain architecture. The rooms, never very large, are well lighted, and there is proper provision for warming. Everything was new and bright; the furniture had nothing of the superfluous, and nothing wasted in display. Some of the inmates were very helpless, reminding one of those in the Metropolitan Asylum at Darenth; others

were robust and looked capable of work. Beyond what is called habit-forming, the teaching at Ebberödgaard is wholly industrial. The inmates had the good-humoured, frank, and confiding character common with imbeciles who are well treated. There were all varieties of idiocy, and some curious cases of deformity and nervous disorders. They were stout, well nourished, decently clad, and evidently well cared for. The breakfast consisted mainly of oellebroed, rye bread, and beer boiled together. I tasted this brew and found it better than I expected. In the course of my travels I have fallen in with dishes which seemed to me strange, though pleasing to the Scandinavian palate. Custom from childhood has much to do with taste. A French lady who had travelled through Scotland, once said to me that she could not conceive how the people could swallow porridge, and she appeared to suspect my veracity when I replied that I could sup porridge when I had lost an appetite for everything else. In the same way the Americans relish hominy and other preparations of maize which are not generally tasteful to us, and the whole of Northern Germany uses rye bread, which to most of us Britons tastes bitter. The dinner consisted of beef and bread, potatoes, and vegetables, with a milk pudding flavoured with a species of rumex.

The staff consists of 17 officials besides the Superintendent (10 males and 7 females). This comprises a gardener, tailor, shoemaker, and baker, an engineer and assistant, besides matrons and head attendants; there are also 70 servants (18 males and 52 females) engaged in keeping the house clean, sewing and cooking.

In reply to what I said of the growing difficulty of getting good servants in Britain Dr. Friis said that it was the same in Denmark; some people in Copenhagen brought servants from Sweden, and one gentleman, who had a large household and a large number of domestics, imported Russians, but had to keep an interpreter for them.

I saw through the workshops; the manufactures consist of nail brushes, paint brushes, rush mats, simple chairs, stools, and tables. Some furniture was made for the house. Dr. Friis said that the ordinary charge for board was £30 for those who could not work, and £21 for those who could. He thought on an average that this £9 represented the value of their work. The establishment is supported by private contributions, payments from the different Communes and from

individuals. The Government gives a grant of one-half for each case.* The asylum is not under Government control, but is managed by a Committee of Direction. The accounts of all the institutions are under the audit of the Government. The chairman is Mr. A. Asmussen, Chief of the Educational Department of Denmark, who has a villa near Ebberödgaard. I had the pleasure of meeting this gentleman at Dr. Friis' house, and retain a pleasing remembrance of his courtesy and instructive conversation.

Owing to the greater age of the cases and the residual condition of many of the patients the mortality is greater at the custodial asylum than at Bakkehus, though the hospital arrangements are superior. The daily average at Ebberödgaard during the year 1895-6 seems about 400. In April, 1895, there were 384 inmates, and on 31st March, 423. The admissions during the year were 71; the dismissals 14, the deaths 18 (12 males and 6 females). Of these 9 were above 20 years of age, the oldest being 41 years; one half of the deaths were owing to tuberculosis, 3 to epilepsy, 3 to heart disease, 2 to empyema, 1 to meningitis, and 1 to chronic diarrhoea.

The mortality of Ebberödgaard has been from 1st June, 1892, to 31st March, 1893, 11 deaths amongst 243 patients, 4.52 per cent.

			Deaths.	Average No.	Per cent.
From 1st April, 1893, to end of March, 1894	...	27	361	7.5	
" 1894	"	24	384	6.25	
" 1895	"	18	423	4.25	
" 1896	"	29	420	6.9	

In the two first years they had several epidemics of scarlet fever and diphtheria.

Dr. Friis, unwearied in his kind attention, introduced me

* The following note shows from what sources the Gamle Bakkehus and Ebberödgaard derive their income. From 1st April, 1895, to 31st March, 1896, they received:—

From voluntary contributions, c. 1,330 croners...	...	.. = £402
" interests of legacies, c. 950 croners ...	...	.. = £52
" payment for boarders, c. 296,070 croners...	...	.. = £1,626
" income from a lottery, c. 26,400 croners...	...	.. = £145

£2,225

Of the payment for the boarders the Government had contributed 132,000 cr. = £7,252 15s. Formerly several of the charitable institutions in Denmark each had permission to have a lottery; now there is a common lottery, in which they partake. The Keller institutions have never had a lottery of their own, but they began to get their part in the common one from the 1st April, 1897.

to Professor Chr. Keller, who is at the head of the administration of De Kellerske Aandsvage-Anstalter, the different institutions founded by his father, Dr. Johan Keller, the first of them in 1865. The situation and appearance of these establishments showed their history; they had obviously been set agoing one after another at different dates as funds came in, and eligible feus or buildings came to be sold. They were in different parts of the city; one of them, a large five-storied house, was in a thoroughfare called the Baggesens Gade. Here the training schools are held, and the education of the feeble-minded is perseveringly prosecuted through methods which the experience gained by patient, thoughtful effort and long use has shown to be the most serviceable.

In addition to the 164 boarders, 70 scholars from the city take advantage of this school.

Another building, at Balderogade, also in the town, contained the trial or preparatory department, where the new comers are received and their capacities fully tested by lengthened observation and teaching. Here there were 90 boarders. Another building was reserved for idiots who could learn nothing. One of the Keller's institutions had been lately destroyed by fire, but the Professor had succeeded in hiring two houses next door to one another. Here I saw two well pronounced cases of sporadic cretinism. When I asked whether they had yet been given the thyroid gland or extract, Professor Keller said that they were fearful of doing so, having, I suppose, read of harm and death resulting in cases of myxœdema. On this point I tried to reassure them, and was enabled to tell them what success had attended Dr. John Thomson's treatment of such cases in Edinburgh.

Next day Inspector Johan Keller and Dr. Riis, one of the visiting physicians to the Institutions, took me in a carriage to the Home for Epileptics at Villa Poppina. It is situated out of the town, near the arm of the sea called the Kallebostrand. There were some children, but most of them were big lads; I noticed several microcephales. One patient had a glazed helmet; he used to strike himself on the face, and then cry out as if hurt. The boys and girls are kept in separate buildings. The rooms seemed somewhat crowded, especially as they were not high in the roof. The beds were of the same dull iron pattern, with grey bedcovers; but everything was clean and neat. The food was good, the milk excellent; this I found to be the case everywhere in

Denmark. The buildings had a newer, brighter look than the Institutions in Copenhagen, and the country air, the garden around, and the fine summer weather contributed to give a more pleasing appearance to the establishment, in spite of the hopeless character of many of the cases.

We then drove to the Asylum for Incurable Adult Idiots at Karens Minde, which is about a mile and a quarter from the city. Here we were kindly and hospitably received by Inspector Graae. This asylum contained about 200 patients. In spite of the unhappy name of incurable (*Uhelbredelig*) the patients in general looked good-humoured, healthy, and well-fed. The rooms were clean and light; it seemed as if the dormitories were rather crowded. I thought that in addition to grown-up idiots and imbeciles there were some patients belonging to the class of "harmless lunatics," and recognised several general paralytics. I saw three caged beds which were carefully stuffed, big enough to turn and sit up in. In Great Britain such an arrangement would have entailed apologies; but the Inspector made none, and pointed them out as something serviceable in treating the particular cases for which they were used. He had two large airing courts with wooden railings, and booths with seats at one side where meals could be served in fine weather. The asylum buildings are in a pleasing style of architecture, with a considerable space of ground. For this building the Rev. Johan Keller obtained a grant from the Government.

GAMMEL MOSEHUS.

The asylum for imbecile women whose training is over, and who can do some work, is situated about five miles from Copenhagen, in the midst of fields of rye, wheat, barley, and sugar beet. It is a well-built house, with working rooms, cowhouses, and a pleasant garden around, affording accommodation for about forty imbeciles, besides five officials, matrons, housekeepers, and teachers, and four women servants. Most of the imbeciles are young, though one was said to be sixty years old; she had no grey hairs. They were seated at a long table at dinner, but rose respectfully when we entered. There was a piano in the dining-room. The women seemed in good health; some very stout. The matron, an intelligent little woman, showed me the working rooms. There were handlooms for weaving linen and worsted cloth, which is said to pay. I saw no sewing-

machines, but they sewed articles of clothing and knitted stockings. Some women worked in the laundry. There was scant time to make notes of special cases, but I measured the head of one microcephale: Antero-posterior, 24 c.; circumference, 39 c.; transverse, 24 c. She looked strong enough, but could not speak; another who had a larger head spoke fluently. Everything seemed to go on in a quiet, gentle, and orderly way.

At easy walking distance lies the workhouse for men,

LILLE MOSEGAARD,

a substantial three-storied building, with some pretensions to architectural good looks. The staff comprises a superintendent and assistant, shoemaker, tailor, basket-maker, gardener and under-gardener, with two overseers or grieves, and three male servants with a housekeeper, night watch, and six servant girls. Here I saw a number of big stout lads; five were working with the joiner, eight at basket-making, and seven at shoemaking. The baskets were made from osiers grown on the farm. These were of the common sort, somewhat loose in make. The joiner exhibited rude chests of drawers, chairs, and tables. I saw one young imbecile sawing, another polishing wood. There were also reed mats. Near the house there is a large garden in very good order, with a variety of fruits and vegetables. The strawberries were ripe, and were being sold in Copenhagen. Tomatoes were in flower. There were ten cows and eight horses. Amongst the outdoor work done by the inmates are ditching and digging peat; every source of income is carefully utilised. The island of Zaaland is quite flat and difficult to keep drained, with many lakes and ponds and morasses. Yet one comes across, here and there, scattered over the fields and meadows, pebbles and boulder stones, some of them of great size. As rock quarries are rare these boulders are broken down to be used for road metal. Some of the inmates who can only do the simplest are employed at this work. From a stone heap near I picked up specimens of granite basalt and quartz, which, no doubt, had been carried in the uncounted geological periods from the mountains of old Norway. The house and grounds were surrounded by wooden palings. None of the Institutions which I visited in Denmark were enclosed by walls. Their inmates were all of a harmless character.

The total number of inmates cared for in the different

Keller's Institutions amounts to about 600, who are thus distributed :—

In School Departments	230
In Work Departments	150
In Karens Minde and other Asylums ...	220

The inconvenience of keeping these Institutions at irregular distances from one another under one central administration must be considerable, and I was told that Professor Keller purposes shifting some of them to the neighbourhood of others so that they should be less scattered, for which it is to be hoped the needful funds will be forthcoming.

I purposed visiting the schools for the education of the deaf and the blind in Copenhagen, but ere I could find time to do so the vacation had begun and the teaching was stopped.

At Bremen they were busy collecting money for an Institution for the care and training of the idiots in the territory of the old Hanseatic Republic. They already had a training school for feeble-minded children (*Schwachgegabte Kinder*), which I visited. It was in a house in a narrow street in the middle of the town. There were 82 pupils, all children. The head teacher is Herr A. Wintermann. I found him engaged at the speaking lesson with about a dozen of the youngest children; some of them were of low grades of idiocy; others more intelligent. It is evident he reserves the most difficult task for himself, and his methods showed that he understood the business. Up stairs is the second class, which was taught by a young man. There were 22 boys and girls who could speak, and were learning to read. They sang a song to the accompaniment of the violin. In the next room 12 girls were being taught needlework and knitting by a young woman. In the workshop there were about the same number of boys, who were taught to make baskets and to plait straw. None of the children live in the place; they are sent every day to the school by their parents. They all looked neat and tolerably dressed. On the whole a school calculated to be useful in which the best methods of teaching were diligently employed.

We also paid a visit to the Deaf and Dumb Institution, a pleasant house in a good street, with a nice garden. The Director, Herr Marquardt, showed us three classes; in general there were four, but one of the teachers was

absent. The schoolrooms, which were all separate, were well supplied with engravings and materials for object lessons. The first-class was for new pupils, children from seven to ten, nine in number. They were seated at desks in a horse-shoe form, so as to be close to the teacher, who sat in the middle. They were being taught primary sounds to prepare them for learning to speak by the German method. In the next class they had begun to practise speaking. There were about a dozen pupils, boys and girls, from 10 to 14 years old. They related the story of Elijah being mocked by the children. This was illustrated by an engraving representing a crowd of young Israelites teasing the prophet while two bears were biting and tearing the rear rank of them. The children shouted out "Kahlkopf heraus" in a drawing manner. In the next class, conducted by Herr Marquardt himself, we witnessed the results of the long and patient course of instruction. It was astonishing to note the quickness of the young pupils, all quite deaf, in speaking, and especially in understanding speech. I marvelled that they understood everything which I and my daughter said to them, although my mouth was covered by a beard and moustache. Herr Marquardt told them that we came from America, when they asked by what steamer we crossed the sea. We then explained that we came from Scotland, by Amsterdam; they said that was in Holland. A girl asked me if I were a doctor, and where I lived. I told her the name of the street, "Dobben," and the name of the friend with whom I was living, Herr Meyer-Bömers. One pupil picked up and repeated the name, and said I could walk there in ten minutes. To keep up the conversation I asked if they could guess how I had lost my eye, when one girl promptly said "Mit einem Kugel." The teacher suggested that she made this successful hit from being the daughter of a military officer. Altogether we were much impressed by the patient diligence of the teachers and the success of their labours. At the same time I am not yet a complete convert to this teaching by the German method. Herr Marquardt admitted that it would be more difficult to teach our language in this way, as in English the vowels are not pronounced so broadly, and some of the consonants are glided over. My main objection, however, is that this method is so extremely laborious that it leaves too little time for other subjects, so, though it may do for some of the smartest pupils, the less intelligent are apt to leave the

schools with little knowledge save this solitary accomplishment. I have a lingering conviction that figurative signs are the most natural language of the deaf. I have been told that pupils taught by the German method are forbidden to converse by signs. Looking through the window at these German children playing in the garden I saw some of them conversing by signs. When they noticed me at the window they at once stopped. It is somewhat amusing at large classes for the deaf in our country to see the children busy talking on their fingers to one another whenever the teacher's back is turned, of which, of course, he is quite unaware.

Visitors to institutions maintained by charity are benevolently disposed to bestow praise in hackneyed adjectives and adverbs, and to avoid critical remarks lest they might injure the reputation and immediate prosperity of the concern. Nevertheless, it does not seem to me of any advantage in the long run that the merits of such establishments should be represented as greater than they really are, and enduring harm has resulted from the managers escaping censure from a fear of depreciating the work which they were supposed to direct. It seems proper to finish this paper by considering how far the high claims put forth for Danish institutions for the defective classes are justified by what is done in other countries, for in this matter everything is comparative. The population of Denmark is about 1,967,932; the number of idiots and imbeciles was ascertained by an unusually careful enquiry in 1888-9 to be 3,857; of these about 996 are accommodated in the institutions just described, and we are informed that there are in Copenhagen two private schools for about a hundred children.* It thus appears that about 29 per cent. of the idiots in Denmark are received into asylums especially adapted for their wants. Carlsen tells us that the others are mostly placed in workhouses, poorhouses, and similar places, and a considerable number live with their relations, who receive assistance from the parishes for their maintenance. He only mentions 18 in infirmaries or madhouses. In England about 6 per cent. are received into special institutions, though idiots in the London district are well provided for. In Scotland there is not up to 8 per cent. of the idiotic and

* *Statistiske Undersøgelser angaaende Aandsvage i, Danmark, 1888-1889, ved J. Carlsen Dr. Med.*

imbecile in any institution specially designed for them. Moreover, if we had correct returns of the number of idiots in the population this percentage would, I believe, be much less. When the children in the charitable institutions become older and their parents are dead, or too poor to support them, they generally drift into asylums for the insane.*

In Ireland there is specific provision only for 60 idiots and imbeciles, and in the United States, where such institutions are maintained by the States Governments, only 6 per cent. find their way into them. In France the number of idiots who received special care must be less than 4 per cent. of the whole. Things seem to be better in Germany, but it is somewhat humiliating to find that this unfortunate class is better provided for in Denmark and Norway than in countries so much wealthier.

As already noticed the staff of teachers and attendants in these Danish Asylums is large, and they seem to be diligent in their duties. There is much less attention paid to outward show, while everything necessary is provided. Nevertheless, display is of importance in institutions supported by charity where the visitors rarely go further than appearances. In our own country, in asylums and hospitals mainly supported by contributions, those concerned are sometimes called upon to sacrifice the useful for the ornamental. I doubt whether the asylums at Copenhagen are in all respects under the best hygienic conditions, but it may be fairly taken as a proof that good care is taken of them that the average death-rate is low. The mortality during the past year in the Gamle Bakkehus was a fraction above 2 per cent., and as far as I can ascertain the mortality in 1896 in all the Keller's institutions was no higher than this 2 per cent. The death-rate at Ebberödgaard from the time of opening till the 31st March, 1897, was about 6.26 per cent. The reason of the higher mortality in the custodial asylum is that the patients are much older. Of the 19 deaths which Dr. Friis had last year 11 were patients above 21 years.

Dr. Shuttleworth estimates the average mortality of the Royal Albert Asylum during the time that he was Superintendent as 3.5 per cent.; Dr. Fletcher Beach returned the death-rate of the Darenth Schools in 1889 as 3.07 on the average number daily resident.

* See *Mentally Deficient Children*, by Dr. G. E. Shuttleworth, London, 1895 p. 9.

The following are the death-rates of the Asylums for Idiots in England for 1895-6 on the average number resident:—

Western Counties Asylum	1·3 per cent.
Eastern Counties Asylum	5·9 „
Royal Albert Asylum	2·8 „
Earlswood	3·5 „
Normansfield... ..	2·6 „
Midland Counties Asylum	1·9 „
Metropolitan Asylum, Darenth	3·77 „

In the Report of the Larbert Institution for the year ending 31st January, 1897, the deaths are stated to amount to 5·6 per cent. of the number of children under treatment during the year. “This,” the Report goes on, “is a very small number, if the physical condition of the children is taken into consideration, and it is rather below the average of previous years.” I have shown elsewhere* the average death-rate of the institution during the years I was the Resident Medical Superintendent (1871-1881) was but 15 in the thousand. For the next fourteen years the average mortality was 50 in the thousand.

In the Report of the Baldovan Asylum for 1895 the visiting physician observes that “11 per cent. of deaths is not excessive, considering the physical condition of many of the patients.” Of ten children who died eight at least succumbed to some form of tubercular disease. No doubt a bad physical condition brings with it a high mortality. What should be aimed at is to improve the physical condition of the children by all available means. When at Larbert pauper boarders used to be sent from the Glasgow parishes, but the Directors of the Larbert institutions kept the applications so long waiting for their consent that the Parochial Boards got tired, and sent them to Baldovan. Thus I know something of these cases. At any rate they cannot possibly be worse patients than at Darenth, where the mortality is about one-third of Baldovan. I should be pleased to record a diminution in the death-rate of the Scottish Asylum. It is stated as 6·12 per cent. in 1896, but this figure seems attained by dividing the number resident at any part of the year by the eight deaths, instead of taking the daily average of inmates.

Reference to the industrial training recalls an old griev-

* *Edinburgh Medical Journal* for October, 1896, p. 329.

ance. During the winter of 1881 Mr. John Müller presented himself at the Larbert Institution with a letter of introduction, stating that he was one of the assistants in the Pennsylvania School for Feeble-Minded Children, travelling with a view of collecting information. We invited Mr. Müller to stay with us, and he remained in our house in the Larbert Institution from the 15th to the 18th of January, 1881. During this time I showed him through the buildings, took him everywhere with me in my visits, and answered his numerous questions to the best of my ability. Some years after I received a copy of the *Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-Minded Persons. Sessions:—Glenwood, Iowa, 1884*, in which there was a paper by the said Müller, entitled "Some Observations of the Scotch and Danish Institutions for the Feeble-Minded." These observations contained a number of statements about the Larbert Institution, scarcely any of which were entirely correct. Amongst others:—"There is no industrial department at Larbert, and, like many others, this institution possesses no farm land. A small garden adjoins the main building, but otherwise there is no ground belonging to it." And further on:—"The ability for handiwork, which proves so conspicuous among even low Danish idiots, is strange compared with the utter lack of it among the Scotch. I was assured in Larbert, when I enquired about the industrial department, that there was none, and, if one should be attempted, *there would not be more than two* in the whole house who would be able to use their hands for any kind of work." "Whether," went on Mr. Müller, "the difference may be referred back to national characteristics, I am unable to say; there is a possibility in this, however." This means, I suppose, that the Danes are naturally very much more skilful with their hands than the Scottish. Fortunately, Mr. Müller's observations were of a specific character, and free from that ambiguity in which such critics often take the precaution of wrapping their statements, for greater safety to themselves, so reply was to me easy, only, as I could not allow his assertions to pass without comment, I had to bear the expense of getting my reply printed. I reproduce a part.

"At this very time there was in the Larbert Institution a roomy workshop in which brushes of various kinds and mats of coir fibre were being made. In this workshop twenty-five boys were employed at different stages of work, though

some of the worst cases could do very little. From the Annual Report, which was dated 20th January, 1881, it appears that there were made 641 brushes and 34 mats, besides teasing and remaking mattresses. At the same time the joiner had in his workshop (a separate building) three pupils. He kept the house in repair, and made a great deal of furniture. The gardener had nine boys under his charge. The grounds comprised about nine acres, of which four acres were cultivated by the spade, and supplied the institution with vegetables during the whole year. The rest of the grounds not occupied by buildings was in park or playground; and the whole work of cultivating the ground, keeping up the roads and fences, and caring for the live stock, was done by the gardener and these boys, with a little assistance from the boiler-man during the summer when the pipes which heated the house were not in use. The girls were taught sewing and working in the house, by the governesses and matron. It ought to be considered that by the regulations of the Board of Lunacy I was not allowed to keep pupils above eighteen years of age, and therefore none of the boys could be said to have completed an apprenticeship. The number of boys in the institution was seventy-eight, but many of them were too small and feeble to do any work."

I scarcely thought at that time that I was writing history, for had Mr. Müller returned about six months after he would have found his remarks justified. The manufacture of brushes and mats was introduced by my predecessor, Mr. Addison, and we also taught shoemaking, carpentry, and gardening, but shortly after I left these industrial pursuits were abandoned, save the last, and, as far as I can learn, have never been resumed. I gather from the Annual Report that tailoring is now taught. This I never tried, for I considered it an occupation unfavourable to the physique, although, of course, sewing was taught to the girls. At Baldovan, I have been told, no trades are taught save gardening.

In all the best English training schools, such as Lancaster,* Earlswood, and Darenth, great attention is paid to

* On a recent visit to the Royal Albert Asylum at Lancaster I found the workshops carried on with much spirit under the direction of Dr. Telford-Smith. The manufactures carried on were carpentry, basket making, mat making, plaiting, shoemaking, tailoring, gardening, and field work.

industrial training, and all these trades are taught. A variety of occupation is of great importance in drawing out their faculties. It is extremely difficult to fit imbecile lads for occupation against the competition of the outer world, but by keeping them in an asylum their labour could be so utilised that they could defray the whole, or a considerable portion, of their board. We had never any difficulty in selling the mats and brushes manufactured at Larbert, which were bought by the shopkeepers in the neighbourhood. They were somewhat better finished than those I saw in Denmark, but many of the articles made in that country were of a too simple structure for our markets. On the whole, I do not think that in manufactures the asylums in Denmark can claim any superiority over the best asylums in England, and they are much inferior in building and furniture. One point in which they excel is the subdivisions of patients and pupils into different establishments. Instead of being only designed for one class, young imbeciles as in Scotland, or including in large buildings every grade and variety of idiocy of both sexes as in some institutions in England, idiots are in Denmark arranged according to their ages, sexes, capacities, wants, and needs. It is easy to see that want of funds very much hampers the benevolent exertions of Danish philanthropists; without the assistance of the State they could never have been able to do so much, and it is to be hoped that the State will give them further aid and enable them to complete their work. As regards Great Britain, we have long been convinced that private charity will never overtake the task which it has in part attempted, of affording proper care and education to the idiot and imbecile who are in need of help. We see with sympathy the efforts of "The English National Association for Promoting the Welfare of the Feeble-Minded," who are trying to found custodial homes for grown-up imbeciles; nor do we undervalue the efforts of those who aim at the establishment of schools for children who, from mental dulness, are incapable of deriving benefit from the teaching in the Board Schools. The Birmingham Workhouse Committee are making enquiries about the training of imbeciles, and have issued a Report. There is no movement about such work in Scotland; but the Poor Board of the Barony Parish of Glasgow have begun to pay attention to the question of training feeble-minded children, and we hope that their

deliberations will end in establishing a training school and asylum for the feeble-minded amongst the poor of that great and wealthy city, which would be an example and a model for the rest of Scotland.

Lavage in Refusal of Food by the Insane. By H. HAROLD GREENWOOD, M.R.C.S., Assistant Medical Officer, Derby County Asylum.

The refusal of food by an insane patient is a troublesome and frequently a serious matter, partly because, from the absence of symptoms in most cases, it is difficult to arrive at a diagnosis of its cause. In many instances it may reasonably be supposed that subjective feelings of pain or discomfort in the stomach, leading to the refusal of food, arise from organic disease or functional disorder of that organ. That there is a centre in the brain, disorder of which causes a distaste for food, has been suggested, but is scarcely worthy of serious consideration. The cause is more likely to be some local affection, such as malignant disease, gastric ulcer, or simple gastritis, giving rise to pain on the ingestion of food; the refusal of food is then the translation of a protest from a stomach in an unfit state to receive any but the lightest food.

Malignant disease is a well recognised cause, but less attention appears to have been given to gastritis, a common disorder amongst the sane, and assuredly more so amongst patients whose secretions are so notably disordered and who are indifferent as to how and what they eat, bolting their food half-chewed or even swallowing paper and other rubbish. From the imperfect action of the skin, of the generative organs, of the intestines, in fact, of all the secreting organs, so frequent in the insane, we should infer that the mucous membrane of the stomach likewise performs its functions imperfectly in many cases, and is therefore very prone to become inflamed. In the following case gastritis appears to be the most probable cause of food being refused :—

W.C., aged 31, a case of melancholia, refused food entirely on March 19th, 1897. For a week previously he had missed occasional meals, and had appeared out of sorts. He grew taciturn, maintaining a gloomy silence, his face wearing a look of profound misery and depression. During this time,

too, he had some diarrhoea, the stools being very foul, his breath became offensive; he grew wet and dirty in his habits and tossed restlessly about at night, groaning and perspiring. All the information he gave was by laying his hand over the epigastrium or holding his head as if he had headache.

After two days' complete fast he was fed with the stomach tube, receiving milk, arrowroot, eggs, and 2 ozs. port wine; this was continued twice daily for a month.

Despite this ample food, which apparently was not properly digested, his weight fell from 10st. to 6st. 13lbs., and he was now, at the end of the month, so weak that his life was despaired of.

On April 19th the stomach was washed out twice with warm water. The first washings resembled beef tea, mixed with white ropy mucus; the second were almost clear. He was then fed with milk, arrowroot, and an egg. The following day lavage was again employed, followed by the usual feed.

Improvement followed at once. The next morning he took milk spontaneously. Continuing to improve he was a month later stronger, taking food well, occasionally speaking and not complaining of any pain. An immediate result of the treatment was diminished foulness of breath, cessation of the diarrhoea, and then gradual regain of control over the bladder and rectum. His weight had only increased to 7st. 3lbs., but his strength had increased in much greater proportion. The next month he weighed 8st. 8lbs., at the end of the sixth month 11st., and was on the high road to recovery from his mental disorder. He remembers refusing food, and gives as his reason for doing so, severe gnawing pain in the abdomen, intensified by the ingestion of food. During the last week of November he has had dyspeptic symptoms, and coincidentally with this his mental symptoms have, in slight degree, returned.

Whilst W. C. was under treatment, an essentially similar case occurred here in a female, M. R., another case of melancholia. After lavage she began to take food of her own accord and quickly grew stronger.

In both cases the first washings were thick and discoloured from the presence of altered blood and mucus. Microscopic examination revealed the presence of red blood-corpuscles, abundant granular nucleated cells, with here and there a larger, clearer, less deeply-stained cell. There appeared to

be cells shed from the peptic glands. By cleansing the stomach from this foul coating, in which fermentative processes would readily occur, the food subsequently introduced was, probably on that account, more thoroughly digested. Possibly a weak solution of some antiseptic such as boracic acid would have acted better.

Many cases such as this, no doubt, recover by simple feeding, but even in these lavage would, I believe, hasten recovery; others, however, die, as this man would have done; in these cases lavage would give a better chance of recovery. In all cases of refusal of food by the insane this treatment is worth a trial, for whilst in many cases of simple gastritis it helps to cure the affection, in cases of malignant disease it might enable a diagnosis to be made by microscopic examination of the washings, and in no case can it do any harm. The principle on which it is based, namely, that of removing the unhealthy discharge from an inflamed surface, is one of the axioms of surgery.

*An Analysis of 131 Male Criminal Lunatics admitted to the West Riding Asylum, Wakefield, during the years 1884-1896, inclusive. Being a Graduation Thesis presented to the University of Edinburgh.** By FREDERIC P. HEARDEE, M.D. Edin., Assistant Medical Officer, West Riding Asylum, Wakefield.

The period chosen is from the introduction of "The Criminal Lunatics Act, 1884," to the end of the year 1896, and male cases only are considered.

Criminal lunatics are divided into two classes:—

"(a) Any person for whose safe custody during her Majesty's pleasure her Majesty or the Admiralty is authorised to give order; and

"(b) Any prisoner whom a Secretary of State or the Admiralty has in pursuance of any Act of Parliament directed to be removed to an asylum, or other place, for the reception of insane persons: "† or, shortly, Queen's Pleasure Lunatics and Secretary of State's Lunatics; the former, seven in number, having an indefinite, the latter, 124, a definite period to serve, viz., to the determination of the sentence of the court.

* Read at the first meeting of the Northern and Midland Division of the Medico-Psychological Association, October, 1897.

† Archbold's *Lunacy*, 4th Edition, p. 800.

During the same period 29 cases were received from prison, as pauper lunatics, at the expiration of their sentences; six military cases; nine cases transferred from the Criminal Lunatic Asylum, Broadmoor; and one ticket-of-leave man from Portland Convict Prison. These cases are sometimes, but erroneously, termed Criminal Lunatics, and are not further considered.

The cases were received from Her Majesty's Prisons at Wakefield, Leeds, and Armley, the prisons of the West Riding of Yorkshire, and were largely composed of the lowest grade of the mining and manufacturing population of that district. The degree of education of the majority was very low, many, indeed, being unable to read and write. Of the total 53 were labourers; 16, ironworkers; 11, tradesmen; six, miners; four, engine-drivers; three, clerks; three, hawkers; two, tramps; and one of each of the following:—Journalist, printer, schoolmaster, farmer, leather-currer, the remainder being made up of mill-hands, etc.

Their ages were as follows:—

17-19	20-29	30-39	40-49	50-59	60-66
2	34	42	31	17	5

The average age was 37 years. The oldest case, aged 66 years, was sentenced to one month imprisonment for breaking windows. He remains in the asylum, after more than three and a half years, hopelessly insane and deluded. He frequently threatens to kill some mysterious "Smith," and on one occasion stole and secreted a knife. The youngest, aged 17 years, was sentenced to one month imprisonment as a "vagrant, sleeping out." He was a congenital imbecile, with hallucinations of a persecutory character, was impulsive, quarrelsome, and violent. He was discharged "relieved" mentally, in six months.

Seventy of the cases were single; 49 were married; and 12 widowed; 102 belonged to various Protestant denominations; 28 were Roman Catholics, and the religious views of one case were unknown.

The offences for which they were convicted were as follows, in order of frequency:—Larceny, 45; rogue and vagabond, 13; drunk and disorderly, 11; assault, eight; indecent assault, seven; brawling, six; housebreaking, six; attempted suicide, six; begging, five; horsetealing, three; threatening, three; murderous assault, three; shooting, two; breaking glass, two; embezzlement, two; neglecting the

family, two; with one case of each of the following:—Manslaughter, interfering with railway points, libel, traveling without a ticket, army deserter, cruelty to a horse, and bestiality. Included in the above are the Queen's Pleasure Lunatics, two of whom were sentenced for attempted suicide, and one for each of the following offences:—Shooting, manslaughter, wounding, indecent assault, and larceny. The sentences varied from five years to 10 days; two cases for five years; one for three; three for two; 11 for 1½; one for 1¼; and seven for one year, the remainder being for lesser terms of imprisonment.

Two of the number only showed no symptoms of insanity after admission, and were discharged after a few days as "not insane," considered to have been malingering; 19 cases were congenitally defective, without epilepsy; eight were cases of epileptic insanity; 36 suffered from general paralysis; 31 from mania; 26 from melancholia; and nine from dementia.

The number of "congenital cases, without epilepsy," 19, calls for remark, being more than 14 per cent. of the total criminal cases, while for the same period, taking all the similar male admissions to the asylum, the percentage to the total male admission rate was under seven. The number of "general paralytics," 36, is also very large, being 28 per cent. of the total criminal admissions.

During the same period the percentage of all the male general paralytics to the total male admissions was 18, this, of course, including the criminal cases under consideration.

Of the general paralytics 24 were maniacal, and 12 demented on admission. Many ran an exceedingly rapid course. One of these cases in a fall stained a fracture of the femur, which made a good union.

Twenty of the maniacal cases were fairly acute, but none suffered from typical "acute mania;" six were chronic, one recurrent, and four were cases of "mania a potu." Of the melancholiacs 24 were acute, one chronic, and one recurrent.

More than one half of the maniacal and melancholic cases might well be termed cases of "delusional insanity" since their delusions and hallucinations formed the most prominent phase of their alienation.

In considering the form of insanity of the cases, one is at once struck by the large number of hopeless cases, from a recoverable point of view, and this is fully borne out by

statistics, for of the discharges 23, or nearly 18 per cent., were recoveries, as against 36 per cent. male recoveries on the total male admissions for the same period, leaving the large number of 106, or 82 per cent., as incurable. One case having recovered some time previous to the expiration of his sentence was returned to prison. (The two cases discharged as "not insane" are excluded from these statistics.)

Of these 106 cases, 28 were discharged "relieved" to their relations or to the guardians, any acute symptoms they may have exhibited having subsided. Twenty-three were, after the expiration of their sentence, transferred to other asylums as pauper patients, their unions of settlement not being of the districts sending their patients to the West Riding Asylum, Wakefield; the procedure adopted being, on the approach of the expiration of the sentence on a case, to obtain a magistrate's order for the further detention of the case, being still insane, making him chargeable *prima facie* to the union in which the offence was committed, leaving the burden of finding his correct settlement to that union's authorities.

Thirty-one cases died, or 25.5 per cent., the average death-rate for all males for the same period being nearly 24 per cent. calculated on all the male admissions. The death-rate for males calculated on the average of numbers resident for the same period was 15 per cent.

The death-rate in the criminal cases is really much higher than the figure 25.5 per cent. represents, since many cases were transferred to other asylums after but short residence in this asylum.

This high rate is brought about by the large numbers of general paralytics. Of the 31 deaths one was a congenital case, 25 were general paralytics, one maniacal, one melancholic, and three were demented.

But for the general paralytics the death-rate would be very low, as one would expect from the class of admissions, there being an almost complete absence of acute or senile cases.

In the case of a criminal lunatic dying before the expiration of his sentence, it is the duty of the coroner to hold an inquest on the body. This point is not mentioned in "The Criminal Lunatics Act, 1884."

Their health and condition on admission was described as good in 50 cases, fair in 64, and poor in 17; prison regimen,

especially in short sentence cases, undoubtedly reducing the bodily condition.

At the end of the year 1896 there remained in the asylum 24 cases who had been admitted as criminal lunatics, the period of their residence varying from twelve years to three months, the average period being four years. The number of cases whose sentences had not expired was five.

In studying the etiology of these cases even greater difficulties were met with than in the case of ordinary pauper lunatics in obtaining reliable information as to the history of the cases, and especially so as regards their family history. In several cases it was impossible, as no relations were known.

The probable causes and combinations of causes of insanity in these cases are as follows:—

Worry, 5; intemperance in drink, 86; sexual excess, 8; venereal disease, 23; masturbation, 4; sunstroke, 4; injury, 3; privation, 1; previous attacks, 21; heredity, 20; congenital defect, 19; laudanum habit, 1; nostalgia, 1; and in 12 cases no cause could be ascertained.

The cranium was malformed in 22 cases:—asymmetry, microcephalus, hydrocephalus, low receding foreheads, and narrow highly arched palates were noted.

Twenty-two cases showed other stigmata of degeneracy:—Prominent or malformed ears, strabismus, corneal opacities, old iritis, large herniæ, extensive psoriasis, small-pox marks, bodily deformity, degraded facial expression, and tattooing were found.

The cases in which malformed heads were noted include a few of the cases in which other stigmata were present.

Four cases had previously been drummed out of the army and one was an army deserter.

Sixteen cases were ascertained to have been previously convicted. Others probably had, but this is not certainly known. One case, having 11 previous convictions against him, was sentenced to 5 years' penal servitude with 5 years' police supervision for stealing; he is a chronic maniac, is noisy, abusive, and has hallucinations of sight and hearing.

In no case could prison life be definitely given as a cause of the insanity, but it undoubtedly had great effect in moulding its form in many cases, there being a remarkable similarity in the delusions and hallucinations expressed by these cases. The probable explanation of this similarity is to be found in the prison regime. In the long hours of soli-

tary confinement cases on the borderlands of insanity, or already insane, are all subjected to the same sounds and other influences from without which they are unable to interpret correctly; this, combined with the prohibition from conversation with their fellows during exercise, would naturally tend to the fostering of wrong impressions and the gradual evolution of systematized delusions.

The number of cases in which alcoholism was ascertained is largely in excess of the general lunatic population; the same remark applies to the cases which showed evidence of venereal disease, but in a much greater degree. Indeed, this is to be expected when we consider that the majority were drawn from the lowest grade of society. The actual percentages, comparing the criminal cases with all the male admissions for the same period, are:—Alcoholism in 66·6 criminal to 31·2 general; venereal diseases in 17·8 criminal to 2·2 general.

The most prominent symptom of insanity displayed was delusion, no less than 47 cases expressing delusions persecutory in character, *e.g.*, false imprisonment, conspiracy against them; that they were going to be poisoned was frequently expressed, to be burned, that cancer was put in the food, that filth was put in the food, that they were damned spiritually; two cases who claimed to be Christ were noisy, abusive, and foul-mouthed, against the fidelity of the wife, witchcraft, etc.

Religiose, sexual, and persecutory delusions were frequently found together in the same case.

Twelve cases, not included in the above 47, expressed delusions of grandeur. These were, in the main, general paralytics in the early stage, one of whom was sentenced for travelling without a ticket, another for stealing a chemise, at a time when both considered themselves worth millions of pounds.

Forty-two cases had hallucinations of one or more of the special senses, the most frequently found being "the hearing of voices;" visual hallucinations were fairly common, olfactory less so, of taste were rare; various paræsthesiæ were common in the alcoholic cases. In the majority of cases the hallucinations were painful and persecutory in character, those of a pleasing nature being almost absent. Some of the hallucinations were that chloroform was administered, chemical vapours in the air, odours or dust thrown into the air of the room, phonographs applied, and in several cases that telephone wires were attached to the bedsteads, etc., to

learn what they were thinking about and to worry them in other ways.

In two cases, both of whom had double aortic murmurs with hypertrophied hearts, these electrical delusions and hallucinations were very persistent. The one case died in this asylum, having never lost them. The other, a fairly educated man, a journalist, at the expiration of his sentence was transferred to another asylum, and there being a technical error in the magistrates' order for his further detention as a pauper, was discharged. He then published a pamphlet describing his experiences in the asylum, and brought numerous charges against the administration of the institution and the medical staff for their electrical ill-treatment of him, amongst other things saying that one of the airing grounds was heated to an unbearable pitch by electricity. Since his discharge, about nine months ago, he has on several occasions attempted, and is still attempting, to obtain summonses against members of the staff and others. From letters which he writes he still believes himself to be acted upon by electricity from this asylum, although he lives in another county.

A very small number refused food to the extent of needing to be fed by the tube.

The criminal cases are, as a class, refractory. Forty-two cases exhibited violence to a marked degree towards their fellow patients and members of the staff. One case, who remains in the asylum after more than 11 years, exhibits post-epileptic automatism, in which state he is at times very dangerous. Eleven cases attempted escape, using violence in the attempt or at their recapture.

Thirty cases were restless and noisy, a large proportion of these, but by no means all, being general paralytics.

Twenty-one were very destructive of bedding, clothes, books, plants, etc.

Four cases had a predilection for breaking glass on every opportunity. One of these cases suffered from petit mal. He could converse rationally, but was of a rather sulky disposition. He had been turned out of the army for striking, and had been very violent and destructive of glass in the prison. In the asylum he was impulsive, and would suddenly turn and strike anyone near him without the smallest provocation, or, if near glass, would strike at it, and on several occasions he cut himself severely. He attempted escape, and fractured his os calcis in dropping

from the top of a high wall. He frequently stated that he tried, but was unable to control these actions, and that he always felt great satisfaction after having given way to the impulse.

Thirteen cases were exceedingly dirty in their habits, throwing their urine and fæces about, and at times painting the walls with excrement. A case, who still remains in the asylum after three years, has needed special supervision to prevent his practising sodomy. He has been found teaching imbecile lads to masturbate, and has incited them to commit sodomy in order to blackmail them afterwards. He practises masturbation to an excessive degree; this, however, is a very common habit.

A large number of the cases had marked thieving proclivities, but it was very often impossible to bring the theft home to them, they, as a rule, being sufficiently cunning to steal from cases who could not bring charges from their demented or imbecile condition, the theft only being discovered during surprise inspection of their pockets and clothing, when money, etc., which they could not have come by honestly was found. One was detected rifling the pockets of an epileptic, who was on his knees at bed time, having noticed that his victim was usually long at his nightly devotions.

A few have stolen and secreted knives for future use, whilst others have improvised weapons or tools by sharpening bits of iron they have picked up, and fitting them into handles made from wood, or by binding rags around one end.

From the character of their delusions and hallucinations, with their other proclivities, it will be readily seen that a large number of these cases were very prone to take and give offence on the slightest, or, indeed, often for no provocation. They were frequently involved in broils, and a large proportion of the cases resident was always to be found in the refractory wards.

The mental symptoms, as a rule, abated considerably after a short residence in the asylum, but few made an absolute recovery, the improvement being due to the removal of the strict prison regime for the far greater freedom of asylum life, with the improvement of dietary, and the privileges of conversation, writing to, or receiving visits from their friends, etc.

Many had no known relatives, and on going through the

visiting books for the period under consideration it was found that 38 cases, or 29 per cent., had been visited by relatives. But few were visited regularly, many receiving only one or two visits in a long period of years.

From the foregoing it will be seen that these cases are by no means a desirable class for reception into an ordinary pauper lunatic asylum, where they must mingle with the other patients, there being no provision made for treating them in special wards such as were arranged for by the Government to be attached to Bethlehem Hospital in 1814, and again to Fisherton House, Salisbury, in 1835.

The experience of this asylum agrees with one of the findings of a Select Committee appointed by the House of Commons in 1859 to enquire into the care of the criminal insane, as quoted in Archbold's *Lunacy* :—

“To mix such persons with other patients is a serious evil; it is detrimental to the other patients as well as to themselves; but to liberate them on recovery, as a matter of course, is a still greater evil, and could not be sanctioned, for the danger to society would be extreme and imminent.” (*Parliamentary Paper*, No. 495, 1860.)*

One of the results of this Committee's Report was the building of the Criminal Lunatic Asylum at Broadmoor, which was opened in 1863, under what is known as the “Broadmoor Act, 1860.” This is the only asylum that has hitherto been built under the Act, a Departmental Commission, appointed in 1880 to enquire into criminal lunacy, finding amongst other conclusions :—

“3. That if it is necessary to make special provision for specially dangerous pauper lunatics, the proper course is for the local authorities of counties and boroughs, by united action, to build one or more asylums designed to receive such specially dangerous lunatics. (*Parliamentary Paper*, C—3,418, 1882).” † An excellent suggestion, which has not been acted upon.

Discussion.

The PRESIDENT said—In Northumberland I have had, with very few exceptions, only ordinary cases. I remember a patient, who, like some of those mentioned by Dr. Hearder, was of an abominable disposition. He appeared to have been at Wadsley Asylum previously, and I have every reason to suspect that he was a rogue, many of his symptoms having been feigned. He feigned melancholia with stupor so well that to this day I hardly know whether he was a scoundrel, a lunatic, or perhaps both together. He refused to be fed for three months, but would behave excellently for months together. What became of him I do not know. In his previous history there were many charges against

* *Op. cit.*, p. 726.

† *Op. cit.*, p. 728.

him for fraud, and his offences generally took the form of representing that he was So-and-so, getting money from the persons upon whom he imposed. When sent to prison he would lapse into the "insane" condition and be sent to an asylum, where he would remain for several months. On getting out he would recommence his fraudulent practices, and so do the round over again.

Dr. PERCIVAL—I understand that if a criminal lunatic dies before his sentence expires the coroner should hold an inquest?

Dr. HEARDER—On every convicted person. I believe also that it is the coroner's duty to hold an inquest on any person who has recently been a prisoner, whether in an asylum or whether he is one of the general population. Major Taylor, coroner for the West Riding, informed me of this. It may be in the Coroners' Acts, but the point is not mentioned in the Lunacy Acts.

Dr. RAY referred to an interesting case of a man who was transferred from the West Riding Asylum, Wakefield. After having been in the asylum two months he was discharged, his friends undertaking to look after him. Only two days afterwards, however, he was found in a house into which he had broken; he had made himself comfortable with whisky and cigars, and had filled his pockets with all the attractive articles he could find. He had been sitting there for an hour or so. The police took him to prison again, but he was discharged on trial. In spite of that he was brought up at the Police Court later, and committed for trial at the West Riding Assizes, which are at present proceeding. He had another very quiet case from Broadmoor, who had been there for five years. After having been at Broadmoor he still seemed to be chargeable to the Union.

Dr. NICOLSON—This particular case, which occurred five or six years ago, is a man named Lyons, who, at Broadmoor, took the opportunity of splitting my head with a stone. On the expiration of his sentence I wrote to the authorities at Sheffield, and said that I had recommended his being detained in Broadmoor as a pauper lunatic on account of his violence. They wrote back with reference to 17s. 6d. per week being charged for him. I replied, "You are by all means welcome to him. We do not want him here, he is much trouble to us." We could not get him from his room, and it took three or four warders to look after him. He would not take exercise, and suffered from "telephonic communications." When I wrote and told the doctors my reasons for his being detained they were pleased to have him kept at Broadmoor. There was further correspondence, and the matter almost became a scandal. In the end the whole matter was referred to the Law Officers of the Crown, who said that the man had been illegally detained, and that the only way out of the difficulty was to send him to a lunatic asylum, which was done. It was a mere accident his having hit me. Lyons, with others, wanted to speak to me. It was not then convenient, so I told him I would come back later and he could then speak to me. He was crying out about being detained, and worked himself into a white heat. I saw that he would make for me. I said, "I'll come and see you again," and had got a little way, when hearing him behind I turned round, and was struck on the head. The general question of the paper is one of great interest, and the conclusion arrived at commends itself to us. It is very undesirable to introduce one of these criminal lunatics into an ordinary insane population, it is most disastrous to discipline and management. The difficulty might be overcome by separation—not allowing them to keep up turmoil, insubordination, and encouragement to escape. At Broadmoor this system was adopted, and these cases were kept in a special block by themselves. There is a certain hardship in removing such lunatics from asylums to Broadmoor, because of the inconvenience to the friends of the patients. It is surprising how faithful these friends are, and they cannot easily or often undertake a long journey. The short sentence men are most troublesome cases. I know one who stole a duck, and was imprisoned for a few months. He went out and stole again, and was certified to be insane. At last he was sent to Broadmoor, where he behaved himself, and was recommended for discharge. He committed himself again, and is now in Broadmoor. He will be kept there for life. Such a course is a

great pity. The Home Office do not understand such cases, and I think we ought to work so that these men would not be thus bandied about. It is most important that young workers should take up these matters and induce wholesome changes. The amount stolen by that type of criminal was trifling, and it is hardly fair to them to depict them in terrible colours. In one sense many of them are taught to be criminals and are therefore to be sympathised with. I thank you for the opportunity of being here. It is a great privilege, for I like to identify myself with the work going on in our various asylums.

Statistics Relating to the Disappearance of Rigor Mortis.

By J. V. BLACHFORD, M.B., C.M., Assistant Medical Officer, Bristol Asylum.

Of 220 cases in which post-mortem examinations were held the following were the conditions as to rigor mortis. It will be seen that in only 11 cases does the condition recorded militate in any way against the statement that "far from commencing in the jaw, then attacking the arms and lastly the legs, and disappearing in the inverse order," as was at one time taught, and as is stated at the present time in some of our text-books, in whatever order it may commence, it almost invariably disappears first from the jaw, afterwards from the arms and legs; in fact probably in the order of its appearance.

Absent in all extremities	...	...	...	33
Present in all extremities	...	...	...	65
Absent jaw, disappears arms, present legs	...	...	...	25
Absent jaw, present arms and legs	...	...	...	12
Absent jaw, disappears arms and legs	...	...	...	3
Absent jaw and arms, present legs	...	...	...	2
Absent jaw and arms, disappears legs	...	...	...	4
Absent arms, present legs	...	...	...	26
Absent arms, disappears legs	...	...	...	7
Disappears arms, present legs	...	...	...	15
				192
Present arms, disappears legs	...	...	...	1
Slightly present arms, absent legs	...	...	...	1
Present jaw and arms, absent legs	...	...	...	1
Present jaw, disappears arms and legs	...	...	...	3
Present jaw and legs, disappears arms	...	...	...	2
Present jaw and legs	...	...	...	1
Disappears arms, absent jaw and legs	...	...	...	1
Absent jaw and legs	...	...	...	1
				11
Not noted	...	...	...	17

If we analyse the 11 cases in which the order of disappearance is at variance with that occurring in the far larger number, we find that they are not to be regarded as reliable, either from the absence of negative as well as positive evidence, the possible careless handling of the cadaver previous to examination, or indefinitely expressed statements.

With regard to the time of total disappearance of the rigor, the following facts were elicited from the same cases:—

In 33 it was absent altogether, the earliest recorded time after death being $17\frac{1}{2}$ hours, but as this happened in a case of advanced heart disease, with very extensive œdema of all parts, the rigor was probably never perceptible at all, owing to the sodden condition of the tissues.

The next was in one 20 hours after death, the patient having died of general paralysis.

Then in one 24 hours after death from phthisis.

Of all 33 cases in which it was absent 15 had died from phthisis, four of general paralysis, the remaining cases being spread amongst various diseases, from which it would appear that in those dying of phthisis, post-mortem rigor is peculiarly prone to disappear early, probably owing to the exhausting nature of the disease.

Twenty-one of the cases were examined 50 or more hours after death. Of these rigor mortis was present in some part in 11. The longest time after death at which it was present was 60 hours, death being due to nephritis; and there were several in which it occurred 56, 57, and 58 hours after death.

From the above facts it appears that although in exceptional cases the death rigor may disappear as early as the twentieth hour, it may be, and probably often is present 60 hours after death.

Discussion.

Dr. MACDONALD referred to a case in general hospital practice where, nine hours after death, there was no rigor mortis. He asked Dr. BLACHFORD what was the earliest time he had observed rigor mortis to disappear?

In reply, Dr. BLACHFORD said that his records showed $17\frac{1}{2}$ hours and 21 hours in two cases.

*Carlyle—His Wife and Critics.** By Sir JAMES CRICHTON-BROWNE, M.D., LL.D., F.R.S.

Gentlemen,—I am not going to weary you with a catalogue—it would be a long one—of the distinguished sons that Dumfriesshire and Galloway have sent forth; I ask you to bear with me for a little while I appeal for your generous admiration of the most illustrious of all of them—I mean Thomas Carlyle. And such an appeal is not unnecessary, for this illustrious man—glorified by genius—has more than any great man of modern times been subjected since his death to detraction and disparagement. Late in securing the recognition of his claims as a writer, for it was not until he was in his forty-second year that the British public really took note of him, he rose rapidly thereafter in fame and popularity, and after his rectorial address in this University, in 1866, was the object of enthusiastic national regard. He died in universal honour, the ablest and highest of his literary contemporaries vying with each other in sounding his praises, extolling his heroic and unsullied life, and describing him as sovereign by divine right amongst the British men of letters of his generation. But a change speedily came over the spirit of the scene. Carlyle had not been a week in his grave when the *Reminiscences*, edited by Froude, appeared; these were followed within a year by the *Letters and Reminiscences of Jane Welch Carlyle*; and after these came rapidly *The Early Life* and *The Life in London*, for which also Froude was responsible. “It was these nine volumes,” says Masson, “that did all the mischief.” Full, at least as regards the earlier volumes, of slovenly press errors, and obviously very hurriedly prepared, they depicted Carlyle in his darkest and gloomiest moods, almost ignoring the bright and genial side of his nature, and gave prominence not merely to the biting judgments he had passed on public men, but also to his pungent comments on private individuals then still living. Froude was Carlyle’s most intimate friend in his latter days; he was his chosen literary executor; he was his faithful disciple in doctrine; he has, with lofty eloquence, described his extraordinary personality and gifts, and put on record his conviction that, with all his faults of manner and temper, he was the greatest

* Part of the Inaugural Address, delivered to the Edinburgh University, Dumfriesshire, and Galloway Literary Society. 6th November, 1897.

and best man he had ever known. And yet, for all that, it has been his part to open the flood-gates of adverse criticism, and to supply all the quacks, and idiots, and sects, and coteries whom Carlyle had scourged, in his day, with nasty missiles with which to pelt his memory. Even Froude's warmest defenders are constrained to admit that he showed defective reticence and bad taste, and every impartial reader of the *Reminiscences* must, I think, perceive that in his vivid sympathy with that brilliant woman, Mrs. Carlyle, Froude has many times been betrayed into references to her husband that are unjust and almost vindictive. When Carlyle was working at the *French Revolution* "his nervous system," says Mr. Froude, "was aflame. At such times," these are Mr. Froude's words, "he could think of nothing but the matter which he had in hand, and a sick wife was a bad companion for him. She escaped to Scotland to her mother." The plain inference from this is that Mrs. Carlyle, when an invalid, was driven away from home by Carlyle's neglect and irritability. The fact is, that it was solely the state of her own health that sent her to the north, and that she had no peace or comfort till she got home again. She writes, on returning on this occasion: "The feeling of calm and safety and liberty which came over me on re-entering my own house was really the most blessed I had felt for a great while." Does this sound like coming back to a self-absorbed bear of a husband? "The house in Cheyne Row," says Mr. Froude, "requiring paint and other readjustments, Carlyle had gone to Wales, leaving his wife to endure the confusion and superintend the workmen alone with her maid." Thus Froude insinuates that Carlyle selfishly went off to enjoy himself, leaving his wife to drudgery and discomfort. But the facts are that Mrs. Carlyle was a house-proud woman, and took delight in her domestic lustrations, and that while Carlyle was in Wales at this time, on one of those excursions which were essential to the maintenance of his health and of his bread-winning labours, Mrs. Carlyle went off on a holiday on her own account to the Isle of Wight, from which she was very glad to return to her dismantled home. I could quote a dozen paragraphs like these in which Froude seems to seek, by innuendo or elision, to convey the impression that Carlyle was systematically hard and heartless in his relations with his wife, whereas the truth is that, with failings of temper and thoughtlessness—from which

few are exempted—he was a tender and affectionate spouse.

But if Carlyle's reputation has suffered at the hands of his own familiar friend, it is a nearer one still and a dearer one far than all other who has inflicted on it the deepest injury. It is Mrs. Carlyle's *Letters*, and still more the fragments of her *Journal*, that have created the strongest and most widely diffused prejudice against Carlyle, for when, in general society to-day, you press for an explanation of the aversion with which the mention of his name is received by some fashionable dames, who know absolutely nothing of him or his works, you are invariably told that he was cruel to his wife, and obliged her to go in an omnibus, while he himself was riding an expensive horse. For the publication of her *Letters* and *Journal* Mrs. Carlyle was not to blame; that was owing to the indiscretion of another. She never intended them to see the light, and if permitted still to keep an eye on current literature, caustic and damnatory must have been her observations on the day they issued from the press. But still the fact remains that this devoted wife, whose pride in her husband was the mainstay of her existence, has done more than anyone else to besmirch his memory and to derogate from his fair fame.

Now, let us examine for a moment Mrs. Carlyle's one great grievance against her husband which gave rise to most of her depreciatory and reproachful remarks—his friendship with Lady Harriet Baring, afterwards Lady Ashburton, a subject which many of his critics evade as delicate or obscure. There is, I think, no delicacy or obscurity about it. Leave out of account Mrs. Carlyle's feelings on the subject, and there is nothing in that friendship from first to last—from 1844 till 1857—that is not to Carlyle's credit. Lady Harriet was one of the most brilliant women of her day, and Mrs. Carlyle herself wrote of her on their first introduction—"The cleverest woman out of sight that I ever saw in my life; moreover, she is full of energy and sincerity, and has, I am sure, an excellent heart." Was it a sin that Carlyle admired this fascinating woman, and took pleasure in her society and in that of her noble and accomplished husband, and of the men of wit and genius whom she gathered round her? She opened bountifully to this reserved, fastidious man and to his wife the highest literary circle, where he could meet on equal terms those most distinguished in rank and learning.

Was it flagitious in him to avail himself of the opportunities thus offered to him—opportunities almost essential to his advancement in his career? She and her husband lavished on him and his wife innumerable kindnesses and attentions. He would have been worse than ungrateful had he, at a woman's caprice, thrown over such generous benefactors.

Mrs. Carlyle's bosom female friends allow that she never had an iota of a ground for jealousy ordinarily so-called, and on such a question such testimony from such witnesses is, I take it, irrefragable. But, say they, Mrs. Carlyle was sensitive and exacting beyond other women, and the consciousness that she who had clung to her hero through the long days of obscurity was now, when the sun of prosperity shone upon him, to be superseded in his supreme regard by any other woman, was gall and wormwood to her soul. That she was so superseded even for an instant there is not a tittle of evidence; indeed, all the documents go to prove not only that she never had a rival in her husband's heart, but that his fealty to "that most queen-like woman," as he called Lady Ashburton on her death, was not incompatible with a far deeper devotion to the intellectual sovereignty of his wife. "Any other wife," says Miss Jewsbury, "would have laughed at Carlyle's bewitchment with Lady Ashburton; but her it made more intensely and abidingly miserable than words can utter."

Well, it seems to me that the true key to Mrs. Carlyle's frame of mind at the time of the Ashburton episode is to be found in her state of health. I have no doubt myself, and I have bestowed some attention on the facts of the case, that she then passed through a mild but distinct and protracted attack of climacteric melancholia, and that all her accusations against her husband were but expressions of morbid feelings.

Mrs. Carlyle was hereditarily predisposed to nervous disease. Her mother died of an apoplectic brain seizure and a maternal uncle was paralysed. She boasted of a strain of untamable "gipsy blood" in her veins, derived from one Baillie, who suffered at Lanark, and was, according to Foster, "a cross between John Knox and a gipsy," and she was, moreover, of intensely nervous temperament, keen to feel and quick to react to feeling. Although a doctor's child, she was brought up under hot-bed conditions; her naturally active brain being stimulated by ambition. She learnt Latin like a boy, and read Virgil at nine years of age; would sit

up half the night over a mathematical problem when a girl of twelve, and wrote a tragedy when fourteen ; and as the consequence of all this she grew up into a highly neurotic woman. Throughout her married life she was subject to frequently recurring and severe sick headaches, lasting for days together, brought on by worry and excitement, and even by the effort of talking and being witty, and sometimes instantly dissipated by a strong mental impression. She had several pronounced attacks of influenza, which we now know has often a far-reaching and deleterious effect on the nervous system. She was as hyperæsthetic to noise as her husband, and like him a victim to persistent insomnia. For several years before the date at which I would fix the climax of her mental trouble, she had been occasionally taking morphia, which is apt to induce depression and suspicion in those who indulge in it, and besides being addicted, like her husband, to excessive tea-bibing, she smoked cigarettes at a time when that practice was less common amongst English ladies than it is to-day. She was, in short, the very woman in whom the physician would expect a mental breakdown at a critical epoch in life.

As early as 1841 Mrs. Carlyle complains of low spirits, due, as she then correctly surmised, to some sort of nervous ailment, and from that time onwards she had periods of gloom, such as all nervous people are liable to, attributable for the most part to external events ; but it was not until 1846, when she forty-five years old, that her despondency assumed a morbid complexion. Then, however, there enveloped her a cloud of wretchedness, an emanation of her own brain, which deepened and darkened until 1855, when that excruciating *Journal* was begun ; which lightened up in 1856, and was almost completely dispelled in 1857, leaving behind it, however, shattered bodily health and the seeds of serious evils in the nervous system, which afterwards developed and brought renewed depression, but of a very different nature from that previously experienced.

Did time permit, I could trace out step by step from her own writings the progress of Mrs. Carlyle's mental malady, which, be it observed, was emotional throughout, and never in the slightest degree involved her intellectual faculties. Her marvellous will power enabled her to a great extent to suppress the outward manifestations of it, but not altogether, for some of her friends remarked on her haggard and careworn look ; but what she could conceal when abroad flowed

forth freely when in the privacy of her own room, and the *Journal* bears the unmistakable marks of cerebral disorder. "My constant and pressing anxiety," she says, "is to keep out of Bedlam." "That eternal Bath House!" she exclaims. "I wonder how many thousand miles Mr. C. has walked between there and here, putting it altogether, setting up always another milestone and another between him and me." "Dear, dear!" she goes on, "what a sick day this has been. Oh, my mother, nobody sees what I am suffering now." "It was with a feeling like the ghost of a dead dog that I rose and dressed and drank my coffee." "To-day has been like other days outwardly. I have done this and that, and people have come and gone, but all in a bad dream." "How I keep on my legs and in my senses with such little snatches of sleep is a wonder to myself." "I was no more responsible for what I wrote than a person in a brain fever would have been." "To-day I walked with effort one little mile and thought it a great feat." "I am weaker every day and my soul is sore vexed. Oh, how long?"

In these and many passages to a like effect the medical psychologist will recognise the cerebral neurasthenia which is so often accompanied by profound dejection and delusional beliefs. And that Mrs. Carlyle really suffered from cerebral neurasthenia her subsequent history makes abundantly apparent. In 1863 she suffered from violent neuralgia, which deprived her of the use of her left hand and arm, and two years later the same malady, after internal manifestations rendered her right hand and arm powerless, at the same time partially paralysing the muscles of the jaw and causing difficulty in speech. Along with this neuralgia there was acute mental distress, which did not, however, assume any delusional phase, and there were frequent temptations to suicide. Mrs. Carlyle died in 1866 from failure of the heart's action, caused by the shock of seeing her little dog run over and injured by a carriage in Hyde Park.

Up till the date which I have fixed for the incursion of her illness, Mrs. Carlyle's letters to her husband are like those of a belated lover, overflowing with ardent affection. "God keep you, my own dear husband, and bring you safe back. The house looks very empty without you, and I feel empty too." "She (your wife) loves you, and is ready to do anything on earth that you wish, to fly over the moon if you bade her." And so on, and on until 1843, when we read— "Oh, my darling, I want to give you an emphatic kiss rather

than to write. But you are at Chelsea and I at Seaforth, so the thing is clearly impossible for the moment. But I must keep it for you till I come, for it is not with words that I can thank you adequately for that kindest of birthday letters and its small enclosure—the touching little key.” And so on, indeed, until 1846, when the glimmerings of distrust first appear. “Yes,” she then writes, “I have kissed the dear little card case, and now I will lie down a while and try to get to sleep. At least to quiet myself I will try to believe, oh, why cannot I believe once for all? that with all my faults and follies I am still dearer to you than any other creature.” But after this the correspondence cools. The letters have no amatory introduction, are subscribed “faithfully yours” or “yours ever,” and contain sometimes sharp taunts and cruel reproaches, sometimes acknowledgments of her own infirmity. “God knows,” she tells him in 1850, “how gladly I would be sweet tempered and cheerful hearted and all that sort of thing for your single sake if my temper were not soured and my heart saddened beyond my power to mend them!” It was not until the lapse of years had brought healing and soothing, and convinced her that his strange humours had never arisen from real indifference towards her, that the old tenderness returned; but it is pleasant to know that it did return, for in 1864 we find her beginning her letters to him with all a girl’s fondness—“Oh, my own darling husband!”

Throughout the whole duration of Mrs. Carlyle’s illness—covering the Ashburton jealousy—Carlyle’s attitude towards his wife was singularly noble. Those slighter forms of mental alienation such as I maintain Mrs. Carlyle suffered from are really much more trying to those who have to deal with them than downright madness, and few positions more painful and difficult can be conceived than that of Carlyle, who, while struggling with a herculean task, his *Frederick the Great*, and himself harassed by hypochondria, had to live with an ailing woman, possessed by groundless jealousy and with the wit to give poignant expression to her supposed wrongs. But whatever he may have had to endure, no angry retort or impatient protest ever escaped his pen. We have no record of his personal intercourse with his wife at this time; perhaps he gave way to gusts of anger, but his letters are uniformly gentle and affectionate, full of encouragement and good cheer. And this, indeed, is characteristic of all his communications to and about his wife—not only at this

period, but during their whole married life. The portrait he has painted of her is a masterpiece of its kind, abounding in bold and harmonious colour, pre-Raphaelite in the truthfulness of its minute details, and so suffused by tenderness that all harsh features are lost sight of. No Madonna was ever painted with more reverent touch or genuine inspiration. It speaks volumes, I think, for Carlyle's magnanimity and whole-heartedness that there is not to be ferreted out of his most private lucubrations one word or phrase reflecting unfavourably on his wife. From first to last he has nothing but praise and blessing to bestow on her. Testy and arbitrary in his personal communication with her he no doubt often was; stinging words sometimes darted from his tongue, or overwhelming objurgations rolled from it, but the moment he took pen in hand he did her more than justice. Unsparing in his own self-reproaches for his irritability and unreasonableness, he was indulgent to her beyond measure, and never set down aught in accusatory condemnation of the trials and vexations which she caused him. His gratitude was unbounded for the protection and help she rendered him, and during the fifteen years for which he survived her, his main occupation was to arrange the material for the most impressive and sorrowful cenotaph that has ever been erected to mortal woman.

Apart from the Ashburton misunderstanding, which was, as I have endeavoured to show, a mere figment of a perverted imagination, the offspring of an excited brain, Carlyle's critics and Mrs. Carlyle's lady friends have still grave fault to find with him for his treatment of her. According to them, she was incessantly craving for little marks of tenderness, for caresses and loving words, which were denied her by the cold, hard man she had married. I do not believe a word of it, and I think that those who advance such a theory have strangely misconceived Mrs. Carlyle's character and our Scottish customs. She was the last woman in the world to desire or tolerate public exhibitions of uxoriousness, or to measure the depth of a husband's love by the froth on the surface, and she was reared in a school in which effusiveness is not approved. We Scotchmen are a somewhat dour and gruff race, and do dissemble our love without actually kicking our relatives downstairs—but sometimes with gestures which a stranger might mistake for an intention to do so. With us the family affections, as I have already insisted, and conjugal fidelity are at their highest. But the temper

of our people, saturated with Calvinism, is severe and self-restraining, and they rarely indulge in those terms of endearment that are so constantly bubbling from southern lips. The head of a Scotch household is rarely heard addressing his wife as "love" or "darling." "Gude wife" he calls her, or "mither," or "Maggie," "Jeanie," or "Elsie," as the case may be. To the children he speaks in tender diminutives, but to his wife his address might sound to the uninitiated somewhat harsh, while her replies might savour of snappishness. And yet are they united in life-lasting and storm-defying love—love too well assured to need declaration, at least in company, in which indeed they have a secret satisfaction in demeaning themselves in a circumspect, distant, and almost austere fashion. A Scotchman would immediately suspect there was something wrong if he saw a husband and wife fondling or heard them "joeing" and "dearieing" each other. Mrs. Carlyle was too sensible a woman, and knew her husband's up-bringing and severe turn of mind too well, to expect or desire of him blandishments or pettings. She must have remembered that his intercourse with his mother, for whom his love was profound, consisted mainly in sitting with her silently by the fireside in the evening and enjoying a tranquillising pipe of tobacco; and curiously enough she has anticipated and disallowed the plea of her apologists that he gave her cause of offence by his negligence in small matters. "In great matters," she wrote of him, "he is always kind and considerate, and now the desire to replace to me the irreplaceable (her mother, who had recently died) makes him as good in little things as he used to be in great."

But whatever his lip service, Mrs. Carlyle had overwhelming epistolary evidence of her husband's attachment. "Oh, my love, my dearest, always love me. I am richer with thee than the whole world could make me otherwise!" "The Herzen Goody must not fret herself and torment her poor sick head. I will be back to her, not an hour will I lose. Heaven knows the sun shines not on the spot that could be pleasant to me were she not there. So be of comfort, my Jeannie!" "Adieu, dearest, for that is, and, if madness prevail not, may for ever be your authentic title." This is the strain that with marvellous and beautiful modulations runs through his letters to her for forty years of their wedded life, and with it echoing in her heart she could scarcely hanker after loud-mouthed endearments or punctili-

ous attentions. She rejoiced rather in their wit combats and the banter and bickerings they exchanged in the presence of their guests in the little drawing-room in Cheyne Row. There the shuttle of persiflage sped freely to and fro. Dull guests with no sense of humour may have seen animosity in these encounters, but they were simply trials of intellectual fence, in which a clever thrust or parry gave equal pleasure to both combatants. The wounds inflicted in them, like those in a recent well-advertised duel, did not penetrate beyond the subcutaneous cellular tissue and did not take long to heal. Tennyson, with his poet's insight, discerned better than others their true relations, for he said, as reported in his recently published biography, that "Mr. and Mrs. Carlyle on the whole enjoyed life together, else they would not have chaffed one another so heartily." Browning, too, saw beneath the surface, and while expressing his affectionate reverence for Carlyle, never ceased to defend him against the charge of unkindness to his wife. He went too far in describing her as a hard, unlovable woman, but he was right in holding that for any domestic unhappiness that they experienced she was the more to blame of the two. Mrs. Carlyle, no less than her husband, was "gie ill to deal wi'." The letters written in her girlhood to Ellen Stoddart display a somewhat headstrong disposition, and caustic wit and biting sarcasm, remarkable in one still in the bright morning of youth, and who had suffered no hardships or disappointments, and are couched in language so frank and strong as to make it certain that she did not derive the expletives she used in later life from Carlyle. Then her relations with her mother reveal heat of temper and self-assertion. These two women loved each other dearly, but they were both too excitable to jog along together smoothly, and so they quarrelled daily. After Mrs. Welch's death Mrs. Carlyle suffered bitter remorse for what she regarded as her shortcomings as a daughter. She pleads guilty to "shrewing" her husband from time to time, and she certainly rejoiced in taking snap-shot portraits of him in his least happy and amiable moments, portraits which she confided to her correspondents, and which Froude diligently collected for public exhibition.

Mrs. Carlyle had boundless respect and love for her husband, but still there was a void in her existence. The childless woman poured forth her pent-up affections on many pets—dogs, cats, canaries, hedgehogs, and even a leech—

but unsatisfied longings still perturbed her, and, combining with her keen sagacity, made her cynical beyond the common measure of her sex. "An infant crying in the night" at Cheyne Row might have vexed Carlyle's soul worse than his neighbour's cocks and hens, and would not have been so easily got rid of, but it would in all likelihood, paradoxical though it may sound to say so, have brought peace, hope, and felicity to the household. To say that Carlyle neglected his wife is to libel him. He had his work to do, laborious work, which he could only carry on in solitude, and so he had to separate himself from her during his working hours, but surely most working men, whether of professions or trades, have to do the same. On the whole, he spent much more time with her than the average husband is wont to spend with his wife. He did not dine at his club on dainty dishes and leave her to fare on cold mutton at home. He had no amusements or pursuits apart from her, and only left her for those visits to the Ashburtons, in which it was generally her own fault that she did not participate; or for those visits to his kindred in Scotland, which were at once a duty and a necessity of health. He never forgot some little offering for her birthday, and was ever ready to assist in her charities. In his poverty he did his best to provide her with small pleasures, and when he grew comparatively rich he pressed upon her luxuries which she was reluctant to accept. How monstrously he has been misrepresented in these respects I may illustrate by one example adduced out of many. Miss Gully writes: "In his richest days he would never have more than one servant. . . . I don't myself see that he had any right to indulge in a witty wife and yet indulge in his idiosyncrasy of only having one cheap servant." Will it be believed that it was by Mrs. Carlyle's express wish that only one servant was kept, and that after two had been employed in deference to her husband's earnest representations, she lay awake at night regretting the time when she had had but one little maid? Such matters are trivial enough, but they merit notice, for a multiplicity of them have been piled up as if of *malice prepense* to damage Carlyle's good name.

And yet this man who has been held up to obloquy as a misanthrope, as a raging, snarling egotist, as a miserable dyspeptic, as a restless Annandale eccentric, as a venomous iconoclast of other men's reputations, as "a boor and a brute"—these words have been actually applied to him—

almost as a wife-beater, was full of magnanimity and human kindness. Look at his conduct in great affairs. Mill came to announce that crushing catastrophe, the burning of the manuscript of the first volume of the *French Revolution*. He sat for three hours, and when he went the first words that Carlyle spoke were: "Well, Mill, poor fellow, is very miserable. We must try to keep from him how serious the loss is to us." Note his self-sacrifice. On the death of Mrs. Carlyle's mother he had a strong desire to retain the house and garden at Templand as an autumn retreat for himself—"no prettier place or refuge could be in the world," but Mrs. Carlyle shrank from going there, so he at once abandoned the project, cancelled the lease, and sold off everything. Mark his patience and consideration for others. He arrived in Liverpool from Ireland between five and six o'clock in the morning, and was found an hour later seated on his luggage at the door of Mr. Welch's house in Maryland Street, placidly smoking a cigar, not having cared to disturb the household so early. Notwithstanding his stern maxims he was the softest hearted of men. Thrifty and frugal in his personal habits, he was prodigal in his benevolence. Depths of tenderness lay in this rugged man. Miss Martineau said he was distinguished by his enormous force of sympathy. "No one who knew him," says Masson, "but must have noted how instantaneously he was affected or even agitated by any case of difficulty or distress in which he was consulted; and with what restless curiosity and exactitude he would enquire into all the particulars till he had conceived the case thoroughly and as it were taken all the pain to himself. The practical procedure, if it was possible, was sure to follow." If he could do a friendly act to any human being he did it, and care and personal exertion, if needed, were not wanting. Intolerant of sentimentality, he was himself a deep well of sentiment from which clear and refreshing pailfuls were drawn daily by passing events. It was really dirty surface water sentiment that stirred his ire, not the pellucid draughts that come from its hidden springs. To the strangers who pestered him with their curiosity, and to the literary aspirants who sought his aid—and few men have suffered more persecution of this kind than he did—he was as a rule not only bluntly honest, but courteously kind; and if a hard word did escape him it was not long before he made what amends were in his power. In extreme old age

his testiness was evanescent, and followed by prompt contrition.

"I shall never forget," Mrs. Allingham writes to me, "the alarm I felt the first morning when, by Mary Aitken's kind invitation, I made the drawings of him in 1878. I had settled myself with paper and colours ready on the old sofa in the drawing-room in Cheyne Row. Carlyle came in and eyed me suspiciously (no wonder, he had not been told I was coming); when Mary quietly remarked that I was just going to make a little sketch of him while he sat and read before he went out for his drive. He became restive, and said, 'She tried me before, and made me look like a fool.' 'The very reason,' Mary said, 'that she wants to draw you again.' Then he got up and marched to the door, saying, 'I have had enough of sketching.' I longed to fly, but Mary only laughed, and signed to me to be quiet and wait. She brought him to his arm-chair and settled him there, with his book close in front of the fire; and I with fear and trembling began to sketch him. When he shifted his position I began a new drawing; this for about an hour, when the carriage was announced. Mary had been quite right; as soon as he became interested in his book he forgot all about me, and when the time came to go all his natural kindness of heart and courtesy to a guest were present again, and, finding that I had not finished my drawing, he invited me to come again. It was the same on the subsequent visits—as to his kindness—and he complimented me on the likeness of several of my drawings. One day Browning called, and they had a brilliant talk about Michelet. Browning curbed his natural energy to listen with great deference to Carlyle till the moment came for him to reply, when he did in his usual vivid manner."

I have dwelt at this length on Carlyle's conjugal relations and on his character as disclosed in private life, because it is in connection with these, as I have said, that popular feeling was stirred up against him. No sooner had Froude spoken than, as Mr. Lilly has pointed out, gigmanity was up in arms, and was speedily joined by the brougham and tandem people. All the interests that Carlyle had offended by his outspoken judgments took vengeance on his memory when he was safe in his grave. There was "an explosion of the doggerries," and an insensate yelping has been kept up ever since. But the attacks on Carlyle have not been confined to his domestic history or personal traits. The

work of traduction has been greatly extended, and now there is nothing that he said or did that has not been ridiculed or belittled. I cannot attempt to challenge here or even to enumerate the adverse criticisms that have been pronounced on Carlyle and his writings of late years; but about the very last of them I would say a few words, and that is to be found in the biography of the late Professor Jowett, published in the spring of this year. In a letter written in 1866 Jowett says of Carlyle that he is a man "totally regardless of truth, totally without admiration of any active goodness—a self-contradictory man, who investigates facts with the most extraordinary care in order to prove his own preconceived notions." And in a letter to Lady Abercromby, dated March, 1881, he remarks that "all London is talking about the *Reminiscences* with well-deserved reprobation." "It contains," however, he goes on, "a true picture of the man himself, with his independence, ruggedness and egotism, and the absolute disregard and indifference about everybody but himself. He was not a philosopher at all to my mind, for I do not think that he ever clearly thought out a subject for himself. His power of expression outran his real intelligence, and constantly determined his opinion; while talking about shams, he was himself the greatest of shams."

Now the witticism attempted at the close of this tirade, that the denouncer of shams was himself a sham, is not original but a variant of the old story of Thackeray, who once, when congratulated on his *Book of Snobs*, replied with an air of confidential confession, "Ah, madam, I could not have written that book had I not been myself a snob." But the witticism, if not original in form, certainly contains a statement that is strikingly original, and even grotesque in its absurdity and inappropriateness; for if there is one fact about Carlyle more certain than another it is this, that he was in deadly earnest. No one can dip into his writings without being convinced of this, and no one who has written about him save Jowett, has ever accused him of affectation or pretence. Jeffrey's complaint about him was that he was "so dreadfully in earnest." Goethe recognised in him "a new moral force, the extent and effect of which it is impossible to foretell." Froude declared that he left the world "having never spoken, never written a sentence which he did not believe with his whole heart, never stained his conscience by a single deliberate act which he could regret

to remember." The late Professor Nichol, a favourite pupil of Jowett, for whose opinion he expressed much respect, said—"Carlyle has no tinge of insincerity; his writings, his conversation, his life are absolutely, dangerously transparent. His utter genuineness was in the long run one of the secrets of his success." And let Carlyle speak for himself. On finishing the *French Revolution*, he said to his wife—"I know not whether this book is worth anything, nor what the world will do with it, or undo, or entirely forbear to do (as is likeliest); but this I would tell the world: you have not had for a hundred years a book that came more direct and flamingly sincere from the heart of a man: do with it what you like, you —."

Jowett offers no evidence in support of his accusation of shammy against Carlyle. The Master of Balliol has spoken, and Carlyle is gated for evermore. He says, indeed, that Carlyle, while exhorting to serious work, would be the first to laugh at anyone who tried to embark in it. "If I were engaged," he writes, "in any work more than usually good (which I never shall be) I know that he would be the first person to utter a powerful sneer, and if I were seeking to know the truth he would ridicule the very notion of an *homunculus* discovering the truth." But this would not be a sham but sardonic derision, and the allegation is unwarrantable, for no one revered the truth-seeker more than he, who had fought his way from the "Everlasting No" through the "Centre of Indifference" to the "Everlasting Yea." It was not the honest truth-seeker, however humble, but the man who, while feigning to seek truth, had all the time a furtive eye to his own advantage, that earned Carlyle's contempt. He could be unstinted in his appreciation of good work. No doubt he was too prone to ascribe unworthy motives; but that is not characteristic of the sham, whose best weapon is wholesale and servile flattery. No doubt he was severe and hasty in his strictures on his contemporaries—an unpardonable offence in these mutual admiration and log-rolling days—but many of his proleptic remarks upon them have been justified by events; and it is rank falsehood to assert that he had never a good word to say of anyone. He has spoken with liberal approbation and esteem of scores of men, public characters and private friends, of Lockhart, Sterling, Shaftesbury, Milnes, Landor, Cavaignac, Mitchell, Graham, Redwood, Baring, Erskine, Pusey, Clough, Cockburn, Thirlwall, Foster, Tyndale, and so on.

Granted, as Jowett suggests, that Carlyle might scoff at some of those who were striving to give effect to his teachings, there was not necessarily any insincerity in that, for one may lay down general principles without committing oneself to approval of every well-meaning essay at their practical application. It is permissible to advocate the building of breakwaters and still to smile at Mrs. Partington's mop. The over emphasis and exaggeration of which Carlyle was unquestionably guilty were, one phrase makes me think, relied on by Jowett as indicating that he was a sham; but this is strangely to misinterpret them, for they were in his case not the trumpeting of the quack, but the wrathful denunciations of a righteous man, who sees wrong prevailing around him and can be angry and sin not. It was impossible for him to be so sluggish, indifferent, or cool. He thought deeply and felt strongly, and was by organic necessity imperative and aggressive in urging his conclusions. He had abounding humour, too, and this often led him into exaggeration, and often pulled him up in it. A friend tells us that he has seen him many times check himself in a tumult of indignation with some ludicrous touch of self-irony, wander into some absurd phantasy, and end in a burst of uproarious laughter. Carlyle gave up his best prospects in life for conscience sake—he chose toil and poverty, he was just and generous to all who had claims on him, he trampled on the idols of the market place, he never budged an inch to threat or cajolery, or fawned on the rich and powerful. He declined the Grand Cross of the Bath and a civil pension, and he is represented by Jowett as having been a sham and not in earnest. Carlyle a sham! Carlyle not in earnest! Is the lightning in earnest? Is the umbrous torrent that rushes through Crichope Lynn in earnest in its search for the sea? No more fervid and sincere man ever breathed the breath of life. And I suspect that those who charge him with lack of earnestness are not in earnest themselves, and cannot understand him.

That Jowett had a grudge against Carlyle is tolerably clear. He never forgave him the epigrammatic flash with reference to the *Essays and Reviews*. "The sentinel who deserts should be shot," and he never lost an opportunity of a thrust at him who had inflicted this sore hurt. Soon after Carlyle's death reference was made in Jowett's presence to Proctor's speculation that it was not impossible that about the year 1897 a comet might strike the sun and raise its tem-

perature just so much as to cause the destruction of all animal life on the earth. Upon which Jowett remarked: "How pleased Mr. Carlyle would have been to hear this if he had been alive." Towards the end perhaps there was some mitigation of his rancour, for in 1891 he delivered himself of a more favourable opinion of Carlyle, which does not, however, enhance one's estimation of his critical acumen. He had been reading *Obiter Dicta*. I daresay some of you recollect the reception of *In Memoriam* by one critic, who committed himself to the opinion that it was obviously the work of a widow, written in memory of her late husband, who was a military man. Well, Jowett fell into a similar error with reference to *Obiter Dicta*, informing Mr. J. A. Symonds that it was written by a lady at Clifton. What does the member for West Fifeshire say to that? "It contains," he continues, "an excellent favourable criticism of Carlyle, and many new and well-expressed thoughts. I find that my old feeling about Carlyle comes back again, and when a man has written so extremely well you don't care to ask whether he was a good husband or a good friend."

It is not for me in defending Carlyle to assail Jowett. I admire, as all must do, the simplicity of his character, his aversion to what was unreal, his power of imagination, his industry, his generous patronage of youthful talent; but at the same time I cannot shut my eyes to the fact that he was intellectually and morally immeasurably inferior to Carlyle in every respect, and had a lower and narrower range of vision. He was a gentleman who was very much at ease in Zion. He knew few or no privations, and had the finest educational advantages; while Carlyle had to wrestle with difficulties for a great part of his life, felt the pinch of poverty, and had really to educate himself. Jowett identified himself with the interests of his college, which became, it was said, an embodiment of selfishness and greed; while Carlyle embraced the universe in the magnificent sweep of conceptions, and had a passionate sympathy with human helplessness. Jowett entertained the great of the land sumptuously at the Master's Lodge; while Carlyle gave a dish of tea to a few choice spirits in the dingy little drawing-room in Cheyne Row. Jowett's name is known to a few scholars—he can never touch the masses; Carlyle's to multitudes wherever our language is spoken.

Jowett has freely recorded his opinion of Carlyle. Carlyle, as far as I am aware, never said anything about Jowett. He

received from him, I know, a copy of his *Plato*, five bright-looking volumes, but he only cut a few leaves of it. I can well conceive, however, with what scathing scorn he would have disposed of Jowett's comfortable philosophy and of his views upon many subjects. Jowett held that civilisation owed more to Voltaire than to all the fathers of the Church, that Louis Napoleon was a genius worthy of admiration, that the Commune in Paris included a number of fine fellows, that Governor Eyre ought to have been hanged, that increased facilities should be given for divorce, that when there were various readings of the New Testament the least orthodox should be preferred, that a gentleman's motto ought to be "regardlessness of money, except in great things and as a matter of duty," and the tradesman's "take care of the pence and the pounds will look after themselves."

It is to be borne in mind, too, that Jowett himself, with his "cherubic chirp, commanding forehead, and infantile smile," for thus does an enthusiastic admirer describe him, was not free from suspicions of insincerity. He was ever undecided, sitting on the rail, and sent away his hearer puzzled not only as to what his opinions were, but as to whether he had any opinions at all. No wonder that the parodist summed up his teaching in the jest which will still bear repetition: "Some men will say that this day is hot, and some, on the other hand, that it is cold; but the truth is it is neither, or rather both, for like the Church of Laodicea, it is lukewarm." And this is the teacher who said Carlyle was regardless of truth and called him a sham!

Let me tell you an anecdote illustrative of Carlyle's abiding hatred of shams in small matters as well as great. I had an opportunity lately of asking the Duke of Rutland whether there was any truth in the story which I have heard many times repeated, that in 1851 he (then Lord John Manners), Mr. Disraeli, and other members of the Young England party, deeply impressed by the *Latter Day Pamphlets*, waited on Carlyle to invite from him some practical hints for legislation, only to be met by vague but tremendous exhortations to get things mended on pain of eternal perdition. "There is no truth in the story," said the Duke. "No doubt we of the Young England party were all much struck by *Latter Day Pamphlets*, but we never supposed that Carlyle was the man to draft a Bill. It was general inspiration, not detailed instructions, that we

expected from him. I only met Carlyle once," the Duke added, "and that was in the house of Sir William Stirling Maxwell. Thinking to interest him, I told him that I had just returned from Dumfries, and was sorry to notice that the stones in the Burns Mausoleum there were crumbling away from exposure to the weather. 'Sorry!' exclaimed Carlyle, 'I am very glad to hear it. I hope they will go on crumbling till there is not one stone left upon another. To think of it, that a man whose name was Turner, and who called himself Turnerelli, should have been employed to make a monument to the greatest genius that ever lived!'"

I have bestowed some attention on the unkind things Jowett said of Carlyle, because his eminence and the deference paid to him by a select group of old pupils and admirers, some of them writers of high attainments, is not unlikely to secure to them wide currency and some acceptance. They were at once quoted in the *Times*. But Carlyle has foes fiercer and more implacable than Jowett. Some superior literary persons in London refer to him with undisguised contempt; and a distinguished member of the literary fraternity, a friend of my own, in conversation with me not long ago, utterly denied him any claim to greatness. He was, he declared, a commonplace man, who raved portentously with nothing to say, whose scholarship was meagre and inexact, whose history was untrustworthy, whose style was detestable, whose knowledge of French and German was very limited, and who twisted and distorted the English language. We must go back, my friend concluded, from the vehemence of Carlyle to the clearness and serenity of the eighteenth century.

If I might keep you till midnight, I should have something to say under each count of this indictment, but in view of the clock I must leave it as a horrid example of the lengths to which the vilification of Carlyle may go. Fortunately, those holding such extreme views are few in number, and there is reason to believe that the calumniators of Carlyle of all shades are a diminishing body. The slump is over, and a steady appreciation, if not a boom, has set in. Mr. H. D. Trail, who takes as comprehensive and trigonometrical a survey of the field of literature as anyone now living, has written this very year: "Time has been swift of despatch in the case of Thomas Carlyle. His award has been delivered within fifteen years of Carlyle's death, and it confirms the judgment of his contemporaries as

to his literary greatness. The appeal of his posthumous detractors is dismissed with costs." Mr. Augustine Birrell, too, who is quick to read the signs of the times, has written within the last two months—"Oh, young man, do not be in too great a hurry to leave your Carlyle unread." Naming the greatest historians of the day, Mr. Birrell adds: "But no one of them is fit to hold a candle to Carlyle. . . Excellent Thomas."

"Come back in sleep, for in the life
When thou are not
We find none like thee. Time and strife
And the world's lot
Move thee no more, but love at least,
And reverent heart,
May move thee, royal and released
Soul as thou art."

Mr. Arthur Balfour, speaking at Dumfries in August, while confessing that he was not of the "straitest sect" of Carlyle's admirers, was obliged to admit that he was a great genius, and had in him a force and originality which enabled him to speak to two generations of his countrymen with a power and force on some of the deepest and most important subjects which can interest us, as no other man has perhaps been able to do.

CLINICAL NOTES AND CASES.

A Case of Concussion of the Brain simulating Delirium Tremens. By J. R. AMBLER, M.R.C.S., L.R.C.P.,
Assistant Medical Officer, County Asylum, Chester.

A man, aged 50, was admitted on 4th October and died 15th October, 1897. The medical certificate stated that he was suffering from delirium tremens.

On admission.—The left side of his face was much bruised, both eyes blackened, and there was a wound on the nose; coagulated blood was formed in the left ear. Mentally he was dazed and stupid, restless, muttering and incoherent in conversation.

Past history.—While on a voyage from London to Belfast some days previous to admission he had a serious fall which rendered him unconscious for a time. He, however, recovered sufficiently to be able to attempt the journey from Belfast viâ Dublin and Holyhead to London. He was found wandering about Crewe, and was ultimately taken in charge by the police and sent to this asylum.

For three days after admission he improved, became more coherent and rational, and was able to answer questions. Three days later he relapsed into the former rambling, restless and incoherent state, and gradually sank. Throughout the day of his death he was unconscious, with stertorous breathing, and died somewhat suddenly at 9.15 p.m.

Post-mortem examination.—Thirteen hours after death. Calvarium normal. A large quantity of serous fluid escaped on opening the dura mater, which was firmly adherent along the sides of the superior longitudinal sinus. Arachnoid and pia mater normal.

There was an effusion of blood on surface of brain in the Sylvian fissure and adjoining sulci on both sides, also on surface of left frontal lobe. The left cerebral hemisphere was congested, the right pale. There was also a small effusion of blood in the floor of the fourth ventricle on the left side.

The left lung contained a small calcareous tubercle. The aorta was atheromatous; calcareous nodules were noted on an attached border of the semi-lunar valves; slight incompetency in consequence. Liver large, fatty and friable. Spleen normal. Small cysts in right kidney.

Remarks by Dr. Lawrence.—The large quantity of serum underneath the membranes had probably been accumulating for some time before the accident, and was coincident with, and the cause of certain mental symptoms which had been observed for a few months previously. At the time of the accident rupture of capillaries had taken place; there had been a gradual oozing of blood, which, mixing with the serous fluid already in the Sylvian fissure and adjoining sulci, retained its fluid condition and ultimately produced the symptoms of compression which ushered in death. No symptoms directly traceable to the small clot in the floor of the fourth ventricle were observed.

The degree to which recovery of consciousness was manifested for three days is noteworthy.

Notes of a Case Introducing a Discussion on the Making of Wills by Certified Patients, and the Duties of Medical Men in regard to this. By W. B. MORTON, M.D., Resident Medical Officer, Brislington House, Bristol.*

The subject of these notes was a gentleman who was admitted under the care of Dr. Deas, at Wonford House, in

* Read at the Autumn Meeting of the South-Western Division, 1897.

June, 1895, and remained there until his death in July, 1896.

I do not propose to give a minute description of his symptoms, which were those of a typical case of mental stupor, but to note chiefly those which were of medico-legal interest.

He was a gentleman of private means and no occupation. He was 50 years of age, and had a marked history of insanity in his family, both his mother and maternal grandfather having been insane. There was no history of any exciting or other predisposing cause.

For several months previous to his admission his manner had been peculiar and his conduct eccentric, so much so that in January, 1895, a petition for an enquiry was presented.

At this time his mental condition varied much. At times he was morose, preoccupied, and almost taciturn; at others excitable and confused, without apparently knowing what he was doing. He wrote many extraordinary and unintelligible letters, incurred liabilities greatly exceeding his income, burnt newspapers in an hotel, threw the bedding out of the window, and wandered about at night time. Some days he ate little, but at times had as many as three dozen raw eggs in twenty-four hours.

Shortly after the presentation of the petition, improvement in his mental condition occurred, and he quickly became apparently quite himself again, so that no further steps were taken. However, in June a relapse occurred, and he was certified on the 15th and admitted into Wonford House.

His mental condition then was one of melancholia, with a tendency to stupor.

After his admission the stupor rapidly increased and became the most marked feature, and this was essentially his condition until June, 1896, the exceptions being:—

(1) For a few days in August he began to eat his food, and seemed brighter and apparently intelligent, but still taciturn.

(2) In December he spoke once or twice voluntarily, but quickly relapsed.

(3) In February he whispered a few sentences intelligibly, but apparently with difficulty, and occasionally when pressed to answer he would whisper, chiefly in monosyllables.

In May and June his health began to fail, and he was confined to bed with recurring attacks of pleurisy and basic pneumonia, probably of a tubercular origin, and at the height of one of these attacks he was said to have conversed quite intelligently for an hour with his night attendant.

Quite suddenly on June 29th the stupor passed off, and having been sent for I found him dressed and eating his breakfast. He said he was quite himself again, and I satisfied myself that this

really was so, for, during an hour's conversation, he spoke clearly and intelligently, and gave me details of his property, and commented on events which had occurred both in and out of the house during the time when he was apparently unconscious of his surroundings. He could give no explanation of his long silence, except that he felt that it was impossible for him to speak, and I could get no suggestion that it had been due to delusion, nor was there any evidence of the existence of delusion at any time during his illness.

During the afternoon of the same day he relapsed into his former condition of stupor. It took place quite suddenly whilst he was talking with his attendant.

This was clearly a genuine lucid interval, and it appeared to me that he was for the time "of sound mind, memory, and understanding."

Two days later he had another interval, which lasted several hours, and which was quite as lucid. He was very weak and ill, and said he knew he would not live long, and would like to make his will. This was drawn out two days later, but whilst it was being read over to him by his solicitor he again relapsed into stupor, and could not sign it. Four days later another interval occurred, and he sent for his solicitor and signed his will.

From then to the time of his death, which occurred after ten days, he had periods of stupor separated by distinct lucid intervals during one of which he made a codicil to his will.

His death was due to disease of the lungs, as is said to occur so often in cases of stupor. No post-mortem examination was made.

The will was contested by two relatives who had not been so well provided for as they would have been had the will been upset, but, unfortunately for present purposes, after a short hearing the case was settled out of court, and what promised to be an interesting trial was cut short.

The chief feature in the case is the lucid intervals, which were so distinctly separated and sharply marked off from the states of stupor. During the former he was seen by four medical men, who were all agreed as to the lucidity, and in the latter there was no doubt as to his complete incapacity, whilst the transition from the one state to the other occupied but a few minutes.

The question of will making by certified patients is always an interesting one. In this case the duties of the medical attendant were easy, but I have no doubt we shall hear of cases where the course was not quite so clear, and for this purpose these notes have been read as a means of introduction.

Discussion.

Dr. DEAS said, taking the case now reported as their text, it was a question that perhaps might be regarded as somewhat narrow and limited. That was so no doubt, but at the same time very difficult questions might arise in connection with such cases, and he thought it was a class of patients in regard to which it would be well for all of them to have, if possible, some definite ideas as to how they would deal with such cases when they arose. The first point that suggested itself was as to the legal question. Was there any legal reason, he asked, why persons in asylums should not make their wills? He thought the general public, and even some of themselves, had ideas which were not quite in accordance with the law in regard to these matters. There was a general feeling that as soon as a person was certified and entered an asylum he was, practically and legally speaking, dead, and had no further civil rights. That, he thought, was certainly a mistake. They knew very well that one important legal right was reserved to those who were inmates of asylums—the right of being tried for any crime which they might have committed in the same way as the members of the outer world. One might go a little further, and say that if the present legal version of the criminal responsibility of the insane were pushed to its logical limit there was no reason why an inmate of an asylum should not have the further advantage of being hanged for a crime which he might have committed, and thereby be on an exactly similar footing with those who had not the great advantage of being placed for protection within the walls of an asylum. There was no reason in law why any patient in an asylum could not make a will. The whole point was a question of fitness, and his own opinion was that in this respect a person within the walls of an asylum was in exactly the same position as a person outside. A man might make a will if he had the requisite amount of intelligence to properly express his desire to do so, and to give instructions for it to be drawn up, recording those instructions or communicating them to a solicitor. Everyone who made a will was liable to have it disputed, and to have his mental condition taken into consideration. The next question was as regards medical officers of asylums. What were their duties in connection with this matter? Supposing a patient communicated to the medical officer a desire to make a will. Was the medical officer to place himself in the position of opposing the patient's wish, or was he to place himself in the position of trying to comply with it? Personally he was rather in favour of the medical officer stretching a point in favour of the patient making a will. Of course a great deal depended on the individual circumstances of the case, but he thought they might perhaps formulate one or two propositions which would help them. He himself should say that if a patient in an asylum had sufficient mental capacity to say in a reasonable way that he wished to make a will he should be allowed to see a solicitor if he so requested. Of course one would naturally communicate with the relatives of the patient in the first instance, but he did not think that the medical officers of an asylum should put themselves in the position of opposing or interfering with the legal right of an asylum patient, subject to the opinion that might be formed as to his mental condition. Very often cases arose when a patient was dangerously ill. Now it might so happen that the relatives of the patient could not readily be communicated with. The patient's condition might be very critical. If a person in that state communicated to the medical officer the desire to make a will and asked that a solicitor should be sent for, would the medical officer be going beyond his functions by complying with the wishes of the patient at once? He thought they should reserve to themselves a wide liberty of action, and if they thought a patient was in a state of mind to be able to give intelligent instructions for the drawing up of a will, and was evidently labouring under mental anxiety to settle his affairs, surely it was their duty to take such steps as to enable the patient to carry out his wishes.

He knew that a great many people would say they would be taking a good deal too much on themselves by doing this, and interfering in matters that might lead them into great trouble afterwards. His own opinion was, however, that in such cases the medical officer would be not only justified in taking action, but that it was laid upon him to do so in the sense of a moral duty. Another point to which he would like to refer was as to the particular kind of patients who might be considered mentally capable of making a will. The case brought before their notice by Dr. Morton was, he thought, a typical case in which lucid intervals might occur, and might be looked for. They all knew how a person might remain for months in a state of intense stupor and then the whole condition was changed, and the person was practically and to all intents and purposes in the same condition as before the cloud descended. It was surprising the amount of knowledge and consciousness which patients of this kind had of what had passed in the stuporose interval. These were typical cases in which, if this clearing up took place, patients were quite capable of exhibiting testamentary powers. Then as to the number of cases one might have in the course of his experience. It would not be very large certainly, but he had three cases of the kind within the space of some seven-and-twenty-years. In all these three cases the wills were held to be good, and two of the three cases were those in which the patients were in the condition alluded to by Dr. Morton—in imminent danger. In one of the cases he wrote out the will at the patient's dictation, and signed it as a witness. One of the wills was upheld on trial in spite of the fact that he gave evidence that he thought that it was tainted by the delusions from which the patient suffered. He mentioned this as showing the wide view the law took of such matters—that there was nothing in the administration of the law to put any impediment in the way of patients in asylums making wills. In the case to which he was alluding the patient was undoubtedly suffering from insane delusions, and he gave it as his opinion that the will was, as he had said, tainted by these delusions. Still the jury upheld the will.

Dr. BOWEN considered that what they had to consider were the conditions they might be placed in at any time, and the course they would take in the event of having to come to a hasty decision as to whether they should grant these facilities or not. Thrashing out such subjects at a meeting like that naturally placed them in a better position to come to a right conclusion as to what to do when these emergencies arose. He thought the cases mentioned were just those where one would be inclined to send for a solicitor and allow the patient to make a will. There were no doubt difficulties in the way, and the last case mentioned by Dr. DEAS rather weakened his propositions, by showing that sometimes they might do mischief, and be the means of an injustice being done. The more they saw of the views of lawyers about lunatics the less one wanted to have lawyers coming to see their patients. As a rule a lawyer never could understand that a lunatic asylum was a place for treating disease. His only idea was that it was a place of confinement, and what he wanted to know was merely whether a patient was dangerous to himself or others; otherwise he was sure to do all he could to get him out. From their point of view an asylum was a place for the treatment of disease, and the treatment of a disease such as insanity was very much hindered if there were all sorts of arguments going on as to the necessity for a person being kept in an asylum or not. Where there was a case of serious illness probably then there would be no difficulty in having a solicitor present, but it might result in many persons who wanted to agitate for a patient's discharge having solicitors brought up on these pretexts. Personally he had had no experience of any patient making a will, except very informal wills with regard to directing the disposal of very small property in which no legal questions were ever involved.

The CHAIRMAN instanced the case of a patient under his care who made a codicil to a will at the suggestion of his brother, a medical man, who urged that

the will the patient had made was defective, in that it did not provide for his sisters. The old gentleman had sisters dependent upon him, and the brother suggested that a codicil might be made to provide for these sisters. He supported his wish by the fact that the Court had in apportioning the patient's income apportioned £100 a year to be divided among the sisters. He pointed out that the effect of the death of his brother under this old will would be that these sisters would be left practically destitute, and the patient's assets would go to his nieces—daughters of married sisters. The old gentleman was a simple dement, but he had remarkable intelligence when one could awaken it. The avenues of his senses were practically closed, he was nearly blind and nearly deaf, but he seemed to thoroughly understand what was said to him, and the circumstances under which he made this will, and other points which were to them and the solicitor unintelligible, he explained. He explained why certain conditions had been inserted in the will, and they were of a decidedly intricate nature, but he was perfectly clear, and they had interviews with him on the subject of the will, he believed on three occasions, the patient always manifesting the same intelligence. He grasped the situation with regard to the sisters, and said it was an omission, and that he would like to make a fresh will and correct it. His memory, however, was quite defective, and between the interviews he never once referred to the subject again. A codicil was drawn up, and he signed it, and the lawyer felt perfectly convinced that the patient thoroughly understood what he was doing, and considered the thing safe, in view of the fact that the Court of Chancery had already during his lifetime disposed of a portion of his income in the way he would be disposing of it in the codicil. He had no doubt if this old gentleman were not in an asylum, and he was one of those who at the present time might be out if his friends would look after him, there would be no likelihood of dispute. The case was a different one to that Dr. Morton had instanced. In this case they had, as it were, to open the man's senses; it was very seldom he made a remark unless he was spoken to, but he was tolerably intelligent when approached.

Dr. Fox remarked that he had had wills made at that asylum, but none that had been contested, all being on the face of them perfectly reasonable.

*Notes on a Case of Fracture of the Fibula in a Melancholic Patient, with Remarks on Treatment in Fractures Generally.** By J. F. BRISCOE, M.R.C.S., Westbrooke House, Alton, Hants.

The object of this communication is to draw from the members of the Association the modern treatment of fractures as adopted in institutions for the insane. It is obvious that the various plans, as practised in hospitals, must be considerably modified in asylums. For instance, to strap and bandage a case of fractured ribs, *secundum artem*, taxes any medical officer, unless the patient is quietly disposed and clean in his habits. However, with skill and a fairly docile patient, there should be little difficulty in the management of ordinary fractures of the bones below the elbows and the knees. From time to time one reads of

* Read for the author by Dr. Macdonald, at the Autumn Meeting of the South-Western Division.

cases of fractures of the ribs occurring in asylums, remarkable autopsies being recorded. It is difficult sometimes to give a correct history of their causation, and, in consequence, much opprobrium has been unjustly cast on asylum officials. It is believed by not a few that there is a peculiar affection of the ribs in the insane causing them to fracture readily. It is said, too, that it is common in general paralysis. Dr. Christian has stated in the *Journal of Mental Science*, January, 1886, that he is decidedly opposed to the idea that general paralytics are more liable to fracture of the bones. He gives 250 cases, and says, "I can assure you, gentlemen, I have not come across a single case of fracture among them." But no figures of the kind can be relied upon unless verified by post-mortem examination. It is not uncommon to find in the mortuaries of ordinary hospitals and asylums, and in the dissecting-room, specimens of fractured ribs, the causation of which is unaccounted for. With our present pathological knowledge of the osseous system we must withhold our verdict.

I will narrate the case of J. C., *æt.* 68, a patient in Westbrooke House, suffering from chronic melancholia. She arose from her chair one morning, stumbled, and broke her left fibula in the usual place above the ankle-joint. At first I was inclined to believe it was a simple sprain, for no displacement or crepitus was elicited when handling the foot. To seek for grating is bad surgery, as we know, and gives rise to unnecessary pain. Two days after the accident, and when the swelling had subsided, a careful comparison of the two ankles was made. There was no doubt as to the solution of continuity, the patient complaining of local pain, over the seat of which was an oblique depression. Accordingly, the foot was put at right angles, and a plaster-of-Paris crinoline bandage applied. The patient rested her leg, ringing the changes, first on a chair, then on a hassock. On or about the seventh day she was allowed to take the nurse's arm, and also bath-chair exercise in the grounds. She made an uninterrupted recovery, and the "Sayre" was removed at the end of a month, being substituted by a soft-webbing figure-of-eight bandage. Although the patient is a feeble lady, with a cyanotic condition of the extremities, yet this fracture appears to have done well. Her mental state is benefited. She seems to have quite forgotten about an imaginary tumour in her abdomen, and has been much more sensible since the accident.

To be diffuse on the treatment of fracture in the insane is not the object of the writer of this paper. Personally, I am inclined towards immovable supports, such as gum and chalk, and, above all, the plaster-of-Paris bandage of Dr. Sayre, of

New York. I should only adopt wooden splints in a quiet case; but in an extensive fracture of the thoracic walls I should sling my patient, all other things being equal, affixing a plaster jacket. In less extensive solution of continuity of the ribs I would favour a broad flannel bandage, with suitable braces to hold up the whole. In fracture of the thigh, below the neck, I can think of nothing better than a Sayre bandage to be extended figure-of-eight-fashion around the hips. To strengthen this support a convenient piece of metal or wood can be inserted between the layers of the plastered bandage. If there should be any doubt as to sores or abrasions arising from the use of plaster-of-Paris, hose should be worn next the skin, suitable cotton-wool pads being arranged over prominences; failing this, the splint must be eye-letted and laced.*

Discussion.

The CHAIRMAN said fortunately he had not had much experience in the treatment of fractures, but he had always used the ordinary means of a surgeon with the usual success. He believed his last case was a fracture of the forearm and he had considerable difficulty in keeping the patient still. He required special and constant attendance day and night, but he made a very good recovery indeed. He thought movable splints were really necessary in this case, for the patient very frequently got his splints loose and they had to be readjusted. It was rather new to him to hear—if he heard correctly—that there was any dispute about the liability of general paralytics to fracture of the ribs. He had personally seen many cases where ribs, not previously damaged, were most easily fractured at the post-mortem examination, and found to be mere shells containing an oily substance, rather than marrow, ribs that must necessarily have been exceedingly easily fractured if they had been subjected to violence.

Dr. BENHAM referred to a case of fractured leg which occurred under his care lately. The patient was of such a restless character that it was necessary to restrain him in bed, and two carefully padded leather bands were put round the wrists, with a ring at the end and tied at some distance so that the patient's hands could not be used to tear the dressings from the limb. He had a communication from the Commissioners in Lunacy, that having used leather bands of that nature he was quite going beyond their orders, and that only a bandage should be applied. What he did certainly gave the patient a very much easier time. The Commissioners in Lunacy had not visited them since that communication, and he was keeping the means of torture which he applied with a view of asking if they could suggest anything more suitable. With regard to the liability of fracture in cases of general paralytics, he had seen more than one instance where the ribs crumbled in the fingers. Very early in his asylum experience he had a case where nine ribs were found to be fractured on the post-mortem examination. As the question arose as to whether these ribs were fractured previous to admission it had to be thrashed out before a coroner and his jury. By referring to the many cases quoted in the past, it was shown clearly and convincingly that the ribs of the insane were liable to degenerate and fracture very easily. He pointed out how a fracture might easily be caused on the removal of the body from the place of death and could speak of one case where

* Paraffin wax bandages have been found very suitable in asylum practice.
—ED.

he was confident the fracture occurred after death. He thought a fact of this nature should not be overlooked. With regard to putting cases up in plaster-of-Paris, he might say that as soon as convenient he thought it was desirable to do so, but at the very first in fractures of the insane he would not advocate it.

Dr. MACDONALD said that, in the face of a most able contribution to a meeting in London, not two years ago, from the Pathological Laboratory at Rainhill Asylum, he should have thought Mr. Briscoe would have hesitated to quote Dr. Christian's older paper, especially after what was shown on the blackboard, under the microscope, and by the aid of the limelight by Dr. Campbell, all going to show and prove the degeneration of the bones of general paralytics.

OCCASIONAL NOTES OF THE QUARTER.

Sir John C. Bucknill.

The portrait of the late Sir John Bucknill, which forms the frontispiece of the present number, will forcibly recall to a large proportion of the members of this Association the personality of one who for many years held so prominent a place in their ranks.

The obituary notice of Sir John Bucknill in our last issue has fully recorded the eminent services which he performed in his various official and social relations, but we seize this opportunity of specially reminding the Association of the great work that he did for it when it was still a struggling organisation of doubtful vitality.

Such a record as this frontispiece is the very smallest expression of esteem and gratitude which we can yield his memory, and we must hope that the time may yet arrive when the Association's local habitation may admit of its gathering together, in the more artistic form of oil paintings or busts, the memories of those who, like Sir John Bucknill, have not only served it, but have added honour and dignity to its history.

Pathology in the London County Asylums.

The London Asylums Report of this year gives evidence that the Pathological Laboratory established at Claybury has borne good fruit, and gives promise of an even larger yield in the future.

The Medico-Psychological Association has already benefited from this new departure by the able demonstrations which its director, Dr. Mott, has given at two meetings in the past year; and we are glad to learn that full reports of

the work of the laboratory, in the form of *Archives*, will be edited by him.

Dr. Mott during the past year has especially devoted himself to the study of general paralysis, with the relation of syphilis to this disease, and he could not have attacked a subject of more interest and importance. Some of the results of his observations and his views of their pathological significance have already appeared in this Journal, and we shall await with interest their further development in the *Archives*.

Dr. Mott has already succeeded in one great object of such a laboratory, viz., the attracting to it of young and energetic workers; this we hope will be even more successful in the future, and lead ultimately to the establishment of a school of neuro-pathology worthy of the most wealthy and populous city in the world.

The London County Council and its Asylums Committee are to be congratulated on having made so important an advance, and on having placed their laboratory under such able management.

The Laboratory of the Scottish Asylums.

The conjoint Laboratory of the Scottish Asylums is now open and fully equipped for work. Already the pathologist, Dr. Ford Robertson, has made reports upon cases of special interest submitted to him for expert opinion, and on the 11th November the Scottish Division held their Autumn Meeting in the large room of the laboratory. Much care and thought have been bestowed upon the arrangements and fittings, with a view to thoroughly practical work, and all the necessary apparatus for histological research has been procured. The Scottish Division is to be congratulated upon having secured central and convenient premises in immediate contact with the Laboratory of the Royal College of Physicians at 12, Brisco Place, Edinburgh. This is beneficial to the College as well as to the asylums, since the close association of workers in science is both stimulating and helpful.

The duties of the pathologist are stated briefly, as follows:—To carry on original researches upon the pathology of insanity; to examine pathological material sent from the asylums and to furnish reports; to teach and give assistance to members of the medical staff of the

associated asylums in regard to research work upon the pathology of insanity; to make one visit annually to the associated asylums at the expense of the laboratory funds, and to make additional visits as required. This is a very generous scheme, and it is to be hoped that it will not unduly tax the energies of Dr. Ford Robertson and his assistant, Dr. David Orr.

It will be gathered from the foregoing that the aim of the Board has been to retain the services of a consulting specialist in pathology in the widest interests of psychiatry, and thereby to assist and develop similar work in the associated asylums. In short, the object of the scheme is to further our knowledge of the pathological processes of mental disease by instruction, advice, and encouragement. There is, unfortunately, an inevitable *aloofness* in asylum life. Medical observation and research is frequently pursued in uncongenial and remote surroundings; enthusiasm, too, often wanes in presence of dull routine and mechanical duties. Our Association has done much to bring its members together for the discussion of difficulties and the promulgation of ideas; and in a similar, helpful manner the Pathological Laboratory will keep alive that glow of intellectual vitality which medical education inspires, and will constitute a centre to irradiate the remoter hospitals for the insane in Scotland. It augurs well for the future of this scheme that fourteen institutions have already joined to set it upon a sound financial basis, and it is confidently expected that others yet undeclared will aid in developing the laboratory so that its operations may proceed with every encouragement. Under these favourable auspices, with the cordial support of the college, which was well represented upon the opening day, we may expect great results in the course of time. We venture to predict that the Scottish Laboratory will prove worthy of imitation by the other Divisions of the Association, and heartily wish success to the South-Western Division in their similar undertaking.

Irish Pauper Lunatics.

The absence of a law of settlement in Ireland is beginning to be acutely felt in connection with the chargeability of lunatics. The insane who are sent to public asylums in Ireland are not paupers in the same sense as in England, for they do not necessarily come first within the purview of the

Poor Law. A considerable number of broken-down people of Irish birth, however, who become insane in England and Scotland are deported by the Poor Law Authorities in the latter countries to Ireland, and are then transferred to District Asylums.

This is regarded as a grievance, inasmuch as the richer island has had these poor people's services perhaps for many years and sends them home to die when their work is done.

Within the island itself the law which ordains that a lunatic shall be sent to the asylum for the district in which he may chance to be arrested, weighs unfairly upon the districts which happen to have a large floating population. Thus the Metropolitan area, which contains numerous hospitals and prisons and several very large workhouses, and which naturally attracts a steady stream of vagabonds as well as of the unemployed from all parts of the country, pays a heavy tax for its "advantages" in the shape of a very undue proportion of rate-supported lunatics. The same state of things appears to exist, though in a less degree, in Belfast and Cork.

We learn from the Dublin newspapers that the Guardians of the Dublin Workhouses are co-operating with the Governors of the Richmond Asylum in an endeavour to bring the matter under the notice of Government with a view to its being dealt with in the forthcoming Irish Local Government Bill.

We hope this is not the only branch of Irish Lunacy Administration which Government will then take up. We observe that a member of the Board of the Metropolitan Asylum is anxious to press forward the question of the boarding-out of lunatics, and proposes to call upon Government to take it up. Why this has never been done before we cannot imagine. The same desperation which, according to Sam Weller, prompts a man when he has no money for anything else to plunge in oysters must surely actuate the Irish neglect of a cheap method of dealing with a certain section of the insane. If boarding-out is ever tolerable anywhere it surely ought to be worth attempting in Ireland, where it is so hard to get money for asylum purposes and where there is no other alternative than the asylum or the workhouses. The revelations of the last few years with regard to the condition of the sane sick, and of the insane in Irish Workhouses have sufficed, we hope, to put an end to any of the projects, once freely canvassed, for the cheaper

treatment of lunatics by transferring them to such institutions from asylums. Even the Poor Law Guardians themselves, not generally very humane or very advanced in their views about such matters, are beginning to feel that workhouses are hardly suitable places for the insane on the lines of management which have hitherto characterised those unhappy establishments. In discussing this subject more than a year ago our contemporary, the *British Medical Journal*, pointed out that "to feed an Irish convict for one week costs 3s. 11d.; to feed a healthy Irish lunatic costs 3s. 5d.; to feed a healthy Irish pauper for the same period costs 1s. 5d.; and an aged and infirm pauper 1s. 4d." To which of the two last enviable classes the workhouse lunatic is supposed officially to belong we are not informed.

The Temporary Treatment of Incipient Insanity.

The sudden collapse of the Lunacy Bill last year brought to a standstill the work of the conjoint Committee of the British Medical Association and our own on this subject.

This Committee, it is to be hoped, will still continue its labours, and be prepared, before the next Session of Parliament, with a workable adaptation to the English law of the Scottish clause dealing with the same stage of mental disease.

The Lord Chancellor will almost certainly introduce a "Lunacy Acts Amendment Bill" in the coming Session, and it would be a reflection on the business capacity of the profession if this found us unprepared with a practical proposition, on a point regarding which there had been such an emphatic expression of professional opinion.

The profession at large is too apt to undervalue the power it possesses of influencing legislation, but in the passing of the recent Lunacy Acts we had many opportunities of proving how great this power really is, a fact which should be remembered as an encouragement to future efforts in the same direction.

Provision for the Poor Private Insane.

The last Report of the General Board of Lunacy for Scotland contains a most important and urgent appeal for legislative measures in relief of the poorer classes of the insane

in Scotland. It is a closely reasoned declaration of the opinion of the Commissioners in view of the fact that the Royal Asylums are no longer adequate to meet the requirements of those who are but little removed from the "pauper" class. This has been apparent for some time, and the conviction, which has grown in strength, has found utterance in the suggestion now made, viz., that the powers conferred upon the County Lunacy Authorities of England should be extended to the District Lunacy Boards of Scotland. The existence of tracts of country where no provision has been made for those in narrow circumstances, the want of sufficient accommodation in existing institutions, the unfortunate results of the present condition of affairs have weighed with the Commissioners in urging that a measure of relief should be granted by Parliament.

We note, however, that an important restriction is to be laid upon the District Boards of Lunacy in respect of the rates to be charged. It is evident that the position of the Royal Asylums and their beneficent work should not be endangered. There is no intention to provide accommodation at the cost of the ratepayers for those otherwise able to command it. On the contrary, the Commissioners attach great importance to the limit of the rates of board to the sum charged for pauper lunatics, with the addition of a sum in name of rent to be levied as the District Boards may see fit. And, further, this sum in name of rent is to be calculated on the net cost of what may be required to provide the buildings. The Commissioners point out that higher rates than those indicated would defeat the very object for which this measure has been proposed. There is no intention to lessen the burden of the ratepayers by profits from keeping private patients, but rather to prevent burdens falling on the rates by offering no excuse for the acceptance of parochial aid.

We trust that the temperate, judicious, and benevolent scheme thus propounded may be carried into effect in the near future.

Straits Settlements Asylum.

Those of our members who listened to Dr. Ellis' interesting paper on Latah will be interested to read his report on the lunatic asylum over which he presides.

Dr. Ellis has a nearly complete pathological and bacteriological laboratory, and his remarks on the special causes of

insanity (malaria, etc.), on the forms it assumes, and on the endemic diseases with which he has to contend, are of the utmost interest. Chief among these is beri-beri, to the consideration of which affection he devotes a large portion of his report.

The pioneers of science and civilisation, scattered over our colonies and possessions, can send us not only much that is new, but also much that is instructive, and we should do our utmost to keep them in touch with us, not for their advantage only, but for our own.

Lunatics at Large and the Public Press.

The daily Press, or at least a certain section of it, oscillates between two extremes in its views of the treatment of lunatics.

If some half-cured lunatic succeeds in attracting popular attention, the Press loudly advocates legislation that will prevent "incarceration" in an asylum, or, if a discharged patient commits a crime, it is equally forcible about "lunatics at large," and the wrongfulness of letting insane persons out of asylums.

The "lunatics at large" of which complaint is thus made, it should be remembered, are largely the outcome of the recent legislation, which was mainly based on these illogical outbursts of the Press.

The difficulties in placing a sick person with mental disorder under treatment resulting from the recent Lunacy Act, leads to many of these becoming "lunatics at large," until their lunacy is placed beyond all dispute. This is often arrived at by the uncertified lunatic committing some overt act, such as assault, homicide, suicide, or homicide followed by suicide, and thus proving that he needs or has needed treatment.

The number of "lunatics at large" thus created is probably considerably increased by the periodical recertification of lunatics under the recent Act, which may lead to the discharge of patients, who although manifesting no certifiable symptoms while under detention, develop their lunacy very shortly after discharge. Many of these "lunatics at large," therefore, are not under control, not from want of evidence of their insanity, but because this evidence is not within the personal observation of a medical man at the time when he is called on to certify.

The Medical Certificate evidently does not cover the ground, and it is obviously desirable that there should be some other procedure whereby a known lunatic could be placed or detained under care, when from any reason the written evidence of a medical man is not available.

The crimes which result from this defect of the law appeal by their striking character to the popular mind. They are, however, of little importance in comparison with the mass of mental suffering, prolonged even to lifelong lunacy, produced by the hindrances to treatment which the law entails in demanding written evidence (as on oath), from a medical man, as the only means whereby a sick person can be appropriately treated.

The "liberty of the subject" has been the popular cry on which this lunacy legislation has been based, with the object of preventing the most improbable possibility of a sane person being sent to an asylum. In this zeal for liberty many hundreds of sick persons are annually deprived of the liberty of obtaining the medical treatment they require, obtaining in exchange only the liberty to commit suicide or homicide.

The public should be clearly instructed that the annually recurring and possibly increasing horrors from the crimes of "lunatics at large" are the price it pays, under the existing lunacy law, for protection from an illusory danger to the "liberty of the subject." "Oh, liberty! liberty! how many crimes are committed in thy name."

The Evil of Irresponsible Criticism.

Perusing certain remarks made recently by a Mr. Berdoe in a lay paper, anent a therapeutic enquiry by Dr. Berkley at the City Asylum, Baltimore, and weighing these after a consideration of criticisms to be found in the *British Medical Journal* of September 18th and September 25th last, the thoughtful ratepayer—especially of the Metropolis, where Mr. Berdoe's superfluous energies find a vent—may well pray to be saved from his friends. Everywhere, and especially, probably, in the Metropolis, any painstaking investigation having for its object the determination of means whereby mental disorders may be arrested before they pass into the interminable night of chronic dementia, would be cordially approved of by those who contribute to the maintenance of county asylums, which look to become vast

hostelries for the incurable in mind. Dr. Berkley records in the *Bulletin of the Johns Hopkins Hospital* for July, 1897, the results of the administration of thyroid extract in cases that "had either passed, or were about to pass, the limit of time in which recovery could be confidently expected." We need not here describe Dr. Berkley's work, of which our readers can judge in the original. We content ourselves with the observation that it is the record of the trial of a medicinal agent, carried out scientifically, and for the benefit of the patient. To Mr. Berdoe, however, it appears that Dr. Berkley's work was "a study of poisoning, as a poison might be tested on an animal." Viewing the matter in this lurid light, Mr. Berdoe felt forcibly that the interests of the public were in jeopardy, and, thus agitated in mind, was constrained to seek out a sympathetic confidant, whom he found in the *Daily Chronicle*. The "up-to-date" and democratic organ upon which Mr. Berdoe's choice fell was far too astute to miss the opportunity of heading a letter "Experiments on Lunatics;" and consequently we find his feelings concentrated under that harrowing title in an issue of the above newspaper. Those members of the profession who may have seen his letter, though it may be denied them to gauge the intensity of Mr. Berdoe's feelings, will not fail correctly to estimate his action in this matter. They cannot but regret that he should have condescended, not merely to have addressed his strictures upon a medical colleague to a lay organ, but further—to quote from our medical contemporary above-mentioned—to have made statements which "are not accurate," and to have given "a very unfair version of the facts."

The Evil of Unrestricted Zeal.

But, while we condemn libel on a professional brother, while we protest, alike in the interests of humanity and of our profession, against any stupid effort to excite prejudice against the proper use of new methods, we would denounce any real "experiment" upon lunatics unhesitatingly. It is not too much to say that such a procedure would be cowardly, immoral and infamous. On similar grounds we are inclined to condemn the practice of pressing into the service of science criminals under sentence of death. This has, however, been occasionally carried out. Thus Küchenmeister

gave twenty *cysticerci cellulosa*, on two occasions, to a criminal; and it is recorded that "afterwards" nineteen tapeworms were found in his intestines; and thus the converse of feeding pigs with the proglottides of the tænia was experimentally manifest. It appears to have been reserved for a Viennese specialist to make what is probably the first experiment upon an insane person, and we record the fact with regret and reprobation. Those members of the Association who attended the Moscow Congress, and who heard the discourse of Kraft-Ebing on general paralysis, may be already aware of the circumstances; for we gather from an account of the proceedings of the Congress (as they related to Psychiatry) which appears in our French contemporary, *Annales Médico-Psychologiques* (Nov.-Dec., 1897), that this address made mention of the experiment alluded to. The announcement, it is stated, caused considerable surprise and emotion, as we can readily believe. It would appear that a certain specialist in Vienna, whose name is not disclosed, being desirous of throwing light upon the question of the relationship between syphilis and general paralysis, conceived the idea of inoculating with the former disease nine general paralytics taken at random from his clinique. Of these six remained free from syphilis, but three contracted it, the conclusion being that syphilis was not the cause of the general paralysis in these latter cases. The moral laxity which permitted this shameful indulgence of scientific curiosity was justly censured by the public Press. The *Deutsches Volksblatt* of August last has an article upon the subject entitled "Human beings in place of rabbits for experimental purposes." The enemy have indeed had occasion to blaspheme.

PART II.—REVIEWS.

The Fifty-first Report of the Commissioners in Lunacy, England, July 5th, 1897.

Notwithstanding their special supplement issued earlier in the year, dealing with the alleged increase of insanity, the Commissioners in Lunacy most unwisely open their Annual Report to the Lord Chancellor for 1896 with an expression of "regret" at the very large increase in the number of lunatics in England and Wales on January 1st, 1897. This indiscre-

tion, for such alone it can be called, after their very deliberate conclusion that insanity is not greatly increasing out of proportion to the increase of population, has naturally been followed by a buzz of excitement in the lay Press, which at this season of the year is but too keenly anxious to grasp at any sensational item from which to elaborate highly speculative articles and alarmist leaders. Following the line of argument we have all along adopted, the Commissioners in their supplementary publication accepted certain influencing factors as undoubtedly operative in minimising, to a great extent, the apparent *pro rata* increase of the insane in our midst, and, making a slight bid for consistency, they add a weak explanatory paragraph further on in this Report accounting for the apparent increase during the past year. Why, then, if this increase can so logically be explained, should they express regret? Is it, perhaps, that their onerous duties, which are steadily increasing year by year, are so heavily weighing on them that the expression is fathered by a hope that additional Commissioners may ere long be appointed to aid them in their inspections, their visitations, and their criticisms? If so we are entirely at one with them, for we are certain that the number of active Commissioners is far too small efficiently to cope with the enormous amount of work that has annually to be done; but could a veiled official desire, if such it be, not have been less ambiguously worded? The ordinary reader of this Report, and the lay Press critic when trenching on matters dealing with lunacy statistics is very ordinary indeed naturally accepts their expression of regret as an authoritative acknowledgment that insanity in its more active phases is a rapidly progressive malady in the community, likely ere long to encompass its ruin. The result of this is that we have, as in previous years, to clear the way by combating these erroneous conclusions with a wearisome reiteration of all our old arguments. Shortly to summarise the factors we deem of sufficient importance to affect this question, and which we have for some years past insisted upon as quite impossible to disregard, we may mention: 1. The increase of population. 2. A gradually diminishing death-rate in asylums. 3. A gradual prolongation of age-periods in asylums above the middle age-periods. 4. The improved facilities for location in asylums of paupers and the increased popularity of asylum care, etc. 5. The more ready transference of pauper insane from workhouses to asylums

for the sake of the 4s. grant. These and certain other minor influences are effectual in swelling the aggregate without in the least, as we have so often shown, increasing the true ratio of occurring insanity to population. From the Report we learn that the total number of patients under the supervision of the Commissioners on January 1st, 1897, amounted to 99,865, an increase on the number on the same date in the previous year of 2,919, and this increase is the cause of the Commissioners' "regret." We endeavoured last year to show that to adopt a date-estimation as a basis of calculation in taking an asylum census thus is an error, and that a far more reliable comparison of yearly work is the difference between the average number resident in all institutions, for the occurrence of insanity is, as we maintained last year and as the Commissioners themselves show elsewhere in this Report, liable to periodic quantitative fluctuations, so that an enormous number of admissions at one period may be followed by another of comparative inactivity and *vice-versa*. Whether our criticisms of their Report are ever to have weight with the Commissioners we cannot say, but we can only express the hope that ere long many of their statistical tables will be subjected to a thorough revision, so that information more precise and valuable, which might certainly be collected from the numerous returns and reports supplied by institutions to their office, may be granted us. Many of these tabular summaries have in their present form been served up annually for half a century, and it is high time they were regarded as trite and out of date.

The increase in the reported number of insane on the date chosen by the Commissioners is the largest on record, and assuming the numbers for a moment truly to represent the increase of insane in asylums, etc., the average annual increase for the decade has thereby been raised from 1,437 last year to 1,847. The ratio of reported insane to the population, according to the Commissioners' calculation, rose on January 1st, 1897, from 31·40 to 32·00, a differential increase of ·60 on last year's ratio, making an average annual ratio for the decade of 30·38 per 10,000. This, and the preceding table (Nos. I. and II.) are especially noteworthy as monuments of inaccuracy, for reasons we gave last year, and their continuance in their present form in an official publication is certainly deplorable. The same remark applies, but perhaps with not such force, to

Table III., that dealing with the ratio per 10,000 of the number of patients admitted into various institutions during the year. Did the Commissioners but content themselves with merely a tabular statement of the actual numbers, discarding all ratios to population (save those ratios dealing with insane to sane paupers) as untrustworthy, their totals would then be of importance and interest, but where all sorts and conditions of admissions, which at the same time happen to be those insane only who come under the Commissioners' cognisance (first admissions, recurrences, relapses, transfers and recertifications), are heaped together and then made to bear comparison with an estimated whole population value, we are merely obtaining a little elementary arithmetic of no particular value to anyone who has ever given lunacy statistics a thought. The Commissioners evidently accept their own calculations as quite unimpeachable, for they freely comment on their value to two places of decimals, speaking of the slight decrease of $\cdot 01$ per 10,000 in the ratio of private patients to population. The results to be gathered from Table II. are exactly not what the Commissioners would have us believe; we are asked to accept as a conclusion, from the absurd miscalculation in this table, the absolute (not the approximate) deduction that one person in 313 is insane, and that this ratio is a progressively diminishing one, from which an indiscreet statistician has quite recently in a popular publication computed the startling result that in A.D. 2301 we shall all be mad! Such is one of the simple results of the Commissioners' arithmetical fallacies.

The ratio per cent. of pauper insane to paupers of all classes (Table IV.) is one of the few sound numerical summaries in the Report. We have here the actual number of pauper insane on a given date compared with the actual number of sane paupers on the same date, and as the pauper insane with but very few exceptions come under the review of the Commissioners' office, we may, knowing that the ratio of sane paupers to the population is almost constant, make a fairly approximate estimation of the prevalence of insanity in England and Wales. The table is, therefore, one of some value. We shall find on examining it that the ratio per cent. of insane to sane paupers is almost a fixed quantity, the average for the decade being 10 per cent., a value differing not materially from that of previous decades. Fluctuations above that percentage can reasonably be put

down to a greater readiness to resort to asylum treatment and care. The steady rise in the actual number of pauper insane during the last five years (the average per annum increase being 2,287), while the ratio shows no greater variation above 10 per cent. than 71 per cent. at any time during that period, is perhaps the most convincing numerical proof of the stationary condition of insanity; every other computation bristles with inaccuracies.

While the total number of patients under detention on January 1st, 1896, amounted to 73,580, or an increase on the number on the same date in the previous year of 2,265, the total number of admissions during 1896 was 18,854, a number only 60 in excess of the previous year's admissions.

The following table shows the variations as to increase and decrease in admissions during the year in the various institutions and modes of care:—

	County and Borough Asylums.	Registered Hospitals.	Metropolitan Licensed Houses.	Provincial Licensed Houses.	Naval and Military Hospitals.	Criminal Asylum, Broadmoor.	Private Single Patients.	Idiot Establishments.	Total.
Increase	206	—	3	—	7	—	—	—	276
Decrease	—	68	—	77	—	3	9	59	216
Total increase									60

As compared with last year's admissions we once more have to note the remarkable fluctuations presented by these figures in occurring insanity so far as can be gauged by admissions into asylums; then there was a marked increase both among the pauper and private insane, and it merely shows how utterly useless it is to attempt any dogmatic inferences from figures which deal with but a section of the insane population. The remarkable diminution in the number of certified private patients, however, calls for remark, and we shall briefly deal with this subject later on.

The table dealing with transfers is inserted merely in support of the adjacent tables; nothing of practical interest can be gathered from it.

The readmissions on fresh reception orders due to the expiry of previous reception orders remains in total nearly the same as that of last year.

Recoveries during 1896 numbered 7,178, an increase on

the previous year's total of 105, the increase occurring mainly in County and Borough Asylums, where the greater number of patients renders the range of fluctuation greater.

The percentage of recoveries to the total number of admissions rose from 38·18 to 38·53, an increase of ·35 per cent., but still below the percentage average of recoveries for the five preceding years by ·85 per cent. The Commissioners are careful to regard these merely as "stated recoveries," and the table must therefore be looked upon as only approximately trustworthy. The proportion of recoveries to the average number resident (which, as we showed last year, it would be perfectly fair to tabulate, seeing that the only possible objection to such a calculation, viz., that for comparison of recovery-rates the computation would be a fallacious one, as the average number resident depends on varying causes in different asylums, here falls to the ground in a general survey of all classes of asylums) shows diminution in the recovery-rate by ·24 per cent. on the previous year's ratio. We are inclined to regard such a calculation as more reliable than the usual rational estimation of recoveries to admissions, for admissions can bear but a subordinate relation to recoveries which on the other hand are closely bound up with the average number resident in all institutions. For the sake of comparison of recovery-rates of different asylums, however, the ratio of recoveries to admissions is the only correct method of estimate. On examining the tables given below, showing recoveries to admissions and recoveries to average number resident, we may observe the steady declination in the average recovery rate for each successive quinquennial period during the last twenty years, a possible numerical illustration of how asylums have of late become crowded with non-recoverable cases.

The actual total number of deaths during 1896 amounted to 6,806, a decrease of 429 on the previous year's number, diminishing the asylum death-rate (properly calculated here to the average number resident) from 10·01 per cent. to 9·05 per cent., a remarkable diminution, and the lowest recorded during the last twenty years. We give as usual a table of comparative death-rates (per 1,000) taken from the Commissioners' tables, and the Registrar-General's ratio (per 1,000) of deaths in the whole population to the estimated whole population for 1895. Comparing the

insane to sane death-rates at various age-periods for the three years 1893-1895, it may be noted (discarding the extreme age-limits) that the main variations in death-rate occur at age-periods in which it may be presumed acute manifestations of mental disease are more common, while in the age-periods 45 and upwards, the rate remains fairly constant. This will serve also to show that in asylums the death-rate of cases over the middle age-period not only tends to approximate more closely to the sane death-rate as age advances, but also remains very nearly constant. Hence it is that we have so great an accumulation of senile cases, especially females, in all asylums.

Year.	Percentage Ratio of Recoveries to Admissions.	Percentage Ratio of Recoveries to Average Number Resident.
1877	37·30	10·71
1878	39·94	11·31
1879	40·50	10·96
1880	40·29	10·77
1881	39·72	10·51
1882	39·41	10·22
1883	38·50	10·28
1884	40·23	10·30
1885	41·99	9·89
1886	41·16	9·73
1887	38·56	9·41
1888	38·71	9·54
1889	38·81	9·44
1890	38·59	9·87
1891	41·04	10·58
1892	38·94	10·08
1893	38·45	9·95
1894	40·21	10·13
1895	38·18	9·78
1896	35·53	9·54

The Commissioners make a passing comment on the increase in the percentage of paupers treated in asylums, and the diminution (amounting to exactly the same total) of the proportion of paupers treated with relatives, etc., and

in workhouses. "This tendency," they say, "has an important bearing on the amount of asylum accommodation which it becomes necessary to provide. In the last 10 years there has been an advance of 6·6 per cent. in the proportion of pauper lunatics treated in asylums, hospitals, and licensed houses. The effect of this advance has been that 7,938 more pauper lunatics are now maintained in these institutions than would have been so maintained under the proportion existing at the commencement of the period."

Age Periods.	Death-rate per 1,000 Reported Insane, 1895.	Death-rate per 1,000 whole population, 1895.	Death-rate, Insane to Sane, 1896.	Death-rate, Insane to Sane, 1891.	Death-rate, Insane to Sane, 1895.
Under 5	{ M. } — { F. }	{ M. 64·4 } { F. 53·7 }	58·5	—	—
5—9	{ M. 42·9 } { F. 94·1 }	{ M. 3·9 } { F. 4·0 }	3·9	17·5 to 1	25·5 to 1
10—14	{ M. 60·1 } { F. 74·8 }	{ M. 2·4 } { F. 2·5 }	2·4	23·0 to 1	22·9 to 1
15—19	{ M. 78·1 } { F. 66·8 }	{ M. 3·7 } { F. 3·7 }	3·7	11·4 to 1	11·1 to 1
20—24	{ M. 47·8 } { F. 38·9 }	{ M. 5·1 } { F. 4·6 }	4·8	9·0 to 1	11·7 to 1
25—34	{ M. 81·7 } { F. 71·9 }	{ M. 6·8 } { F. 6·3 }	6·5	11·8 to 1	10·4 to 1
35—44	{ M. 113·7 } { F. 57·5 }	{ M. 11·4 } { F. 9·8 }	10·6	7·8 to 1	7·5 to 1
45—54	{ M. 106·3 } { F. 65·5 }	{ M. 18·9 } { F. 15·0 }	16·9	5·0 to 1	5·1 to 1
55—64	{ M. 132·1 } { F. 82·4 }	{ M. 35·7 } { F. 30·2 }	32·9	3·2 to 1	3·7 to 1
65—74	{ M. 224·6 } { F. 144·9 }	{ M. 70·2 } { F. 62·1 }	66·1	2·7 to 1	3·0 to 1
75—84	{ M. 383·3 } { F. 265·4 }	{ M. 155·3 } { F. 144·3 }	149·8	2·1 to 1	2·7 to 1
85 and upwards	{ M. 379·3 } { F. 522·4 }	{ M. 305·2 } { F. 275·6 }	290·4	1·5 to 1	1·3 to 1

The causes of death are again tabulated, and there is a notable increase in the number of deaths from general paralysis (28·6 per cent. in 1896, as compared with 15 per cent. in 1895 of the total number of deaths), but the other main causes, pulmonary phthisis (14·03 per cent. in 1896, 14·7 per cent. in 1895), senile decay (8·69 per cent. in 1896, 7·5 per cent. in 1895), pneumonia (6·37 per cent. in 1896, 7 per cent. in 1895), cardiac valvular disease (5·73 per cent.

in 1896, 4·7 per cent. in 1895), exhaustion from mania and melancholia (3·62 per cent. in 1896, 3·8 per cent. in 1895), apoplexy (3·21 per cent. in 1896, 3·1 per cent. in 1895), chronic Bright's disease (2·56 per cent. in 1896, 2·9 per cent. in 1895), and bronchitis (2·46 per cent. in 1896 and 2·8 per cent. in 1895) appear to maintain a fairly constant proportion to the total number of deaths, the remaining ratios being distributed over a large number of diseases. Of the total number of deaths, accident, suicide and violence are represented by only ·85 per cent.

Table XV. is new. It gives the actual number of patients admitted into various institutions during each month of the year 1895, classified into the principal forms of mental disorder, as well as the daily average for each month of these disorders. "In calculating these averages," say the Commissioners, "Sunday has been omitted, as few if any admissions take place on that day." The table of total numbers for each month, if continued for some years, may possibly be of some use in giving us an idea from year to year of the fluctuations of occurring insanity, so far as this can be estimated from certified cases only, though it is falsified in a degree by the inclusion of recurrences, relapses, fresh reception orders through inaccuracy, lapse, etc., but the daily average table is, so far as we are able to judge, useless. Such a tabulation is but of small value when limited to a single year and made exclusive of Sundays, an absurdly fanciful method of calculating a daily average. The table of totals for each month is an eloquent condemnation of the Commissioners' method of taking asylum statistics from which to draw conclusions, for if their total number of patients in asylums had been taken at the end of May, for instance, with its 1,707 admissions, there would have been a surprising difference between their sum total and the one taken at the end of the year, with but 1,357 admissions in December. We maintain, therefore, that no possible judgment approaching accuracy can be formed of the numerical increase of even officially recorded cases of insanity by the present system of enumeration on a particular date, to compare this with a like enumeration on the same date in the previous year. An ordinary censal estimation cannot be applied to asylums for the purpose of determining the increase or diminution of insanity under various forms of care when such wide departures from the monthly average, as in one case 252 above and in another 303 below, can be observed

to occur. The method of estimation, however, is a departmental one which custom has hallowed, notwithstanding its glaring errors, and we must fain be content.

The remark the Commissioners make on Table XV. is so very characteristic of the manner in which in all departments of their work they draw arbitrary inferences from wholly insufficient premises, that we cannot refrain from quoting it in full. Speaking of this tabular arrangement of the numerical incidence of insanity during the one year 1895, they say: "It would thus appear that insanity in a form requiring treatment away from home is more frequently developed in the spring and summer months than in the autumn and winter." Parchappe's study of the seasonal incidence of insanity is certainly in accord with this conclusion, but he was not so illogical as to draw his valuable deductions from one year's observation.

With regard to Table XVI. we can but repeat what we said last year, that as an official summary of the occurrence of insanity in various professions and callings it is absolutely untrustworthy. The yearly average of the total number of lunatics under the Commissioners' cognisance for the five years 1891-1895 is compared with the actual census enumeration in 1871 in some cases and in 1891 in others. The ratios thus calculated are erroneous and misleading.

The table giving the yearly average occurrence of the principal forms of mental affection for the five years 1891-1895, so far as is known officially, shows that 48·8 per cent. were the subjects of mania, 27·3 per cent. of melancholia, and that 4·8 per cent. were the subjects of senile dementia. The antiquated classification here adopted of "mania; melancholia; dementia, ordinary and senile; congenital insanity; and other forms" shows either a weak official clinging to routine or a lack of faith in more recent scientific classification. Maniacal and melancholic conditions alone are expressive of such varied types of mental aberration that the massing together of these under two common headings minimises the value of this table to a great degree. Of the yearly average, 70·5 per cent. were first attacks, 8·1 per cent. epileptics, 8·4 per cent. general paralytics, and 25·1 per cent. suicidal cases.

The causes of insanity are dealt with in Tables XXIV.-XXVII. This official classification of causes is almost universally accepted as satisfactory, but we are inclined to the opinion that it might greatly be improved upon; to

take one objection only, it is almost impossible clinically to discard the influence of physical causes when mental causes apparently are prime factors, and *vice-versa*, and this is just what the Commissioners from the foot-note to Table XXIV. attempt to do. It is however recorded that 20·9 per cent. of the yearly average of admissions of males, and 8·5 per cent. of females, are insane through alcoholic intemperance, a disproportion between the sexes we are somewhat inclined to question, that 20·8 per cent. of males and 25·9 per cent. of females are hereditarily predisposed, and that 16·4 per cent. of males and 22·0 per cent. of females have had previous attacks. As might be expected, mental anxiety, worry, and overwork is nearly twice as fruitful a cause among private as among pauper patients, and alcoholism, though not differing so markedly in the two grades, is a greater causative influence among paupers. On comparing this table with that for the quinquennial period 1888-1892 we find but little difference between the percentage proportions. There is no appreciable distinction between the ratios of the causes of general paralysis and the causes of all other forms of insanity, and this in the light of recent scientific elucidation of the true origin of the malady is somewhat absurd.

The number of voluntary boarders remaining in Registered Hospitals on January 1st, 1897, was 92, in Metropolitan Licensed Houses 18, and in Provincial Licensed Houses 32. Of the 326 admitted during the year only 87, or 26·7 per cent., were certified. We could, did space allow, say much on this matter of the admission of boarders, but the Commissioners should surely know by this how frequently the privilege has been abused merely to save the publicity and trouble certification before admission would entail.

The admissions into the seventy County and Borough Asylums during 1896 amounted to 16,164, or 2,513 in excess of the decennial average. The recoveries came to 6,188 and the deaths to 6,123, in 4,893 of which (or 79·9 per cent., a proportion exactly the same as last year) post-mortem examinations were made. The Commissioners shortly enumerate the changes among the Medical Superintendents of Asylums during the year, but they make no special comment on the much discussed appointment to Portsmouth Borough Asylum. Particular mention is made of the enquiries at Norfolk County Asylum, the second of which certainly reveals a lamentable want of care and good

management. The insufficiency of asylum accommodation for paupers is as usual the subject of remark. It will be many years before local authorities can be brought to see the necessity of early and prompt provision for the ever growing insane population. As it is not only in well-to-do counties and boroughs, but also, and mainly, in the more needy that asylum care is called for, it naturally follows that there will always in the latter class be an insufficiency of accommodation, and it may ere long become needful for the Legislature either to make the matter of asylum provision a national one or so to reorganise county boundaries as to help poorer districts out of the difficulties in which they will sooner or later be struggling. The insanitary condition of certain asylums (seven of these were mentioned in last year's Report, one has been in the insanitary list for three years, and another for four years in succession) is detailed in a special section of the Report. There were twenty-two deaths from suicide, but only fourteen of these can properly be considered as having occurred while under treatment; ten of these were males and four females. Of the males three committed suicide by drowning, two by hanging, one by cutting his throat, one by poison, one by throwing himself under a train, one by precipitation from a height, and one by strangulation. Of the females two committed suicide by hanging, one by drowning, and one by setting herself on fire. We observe that the Commissioners are anxious to impress on the Lord Chancellor how vigilant they have been in urging the removal so far as possible of all conditions which may rank as adventitious aids to suicide. We are not so sure that the safety so acquired is not counter-balanced by a resultant lack of watchfulness on the part of attendants; besides, is it not one of the first principles of medical treatment of the insane to render their surroundings as much as possible perfectly normal and ordinary? An obtrusive withdrawal of all possible means to do harm to himself is frequently as suggestive to a suicidal patient as a careless non-observance of ordinary precaution. The deaths by misadventure numbered but six, two of which were from epileptic suffocation. The cost of maintenance in County and Borough Asylums per week per head shows a slight diminution on the amounts given last year.

In a short paragraph dealing with Registered Hospitals as a whole the Commissioners allude to certain of these "in which the income is large" and "in which a small pro-

portion of it only is devoted to charitable purposes." It is perfectly well known to which institutions allusion is here made, and we may well ask why is this permitted? Registered Hospitals are placed on the same footing as regards privileges with licensed houses, but their conduct and control is absolutely autocratic, and they may if they please, armed with their bye-laws from the Secretary of State, snap their fingers at the Commissioners. They contain, as pointed out by the Commissioners in their Report for 1894, more than a third of the private patients under the review of the Commissioners' Office, and were one half of the irregularities which are constantly occurring in some of them perpetrated in licensed houses these latter would suffer a serious annual diminution in their number through revocation of their licenses. That Registered Hospitals are devoted to charity and Licensed Houses to venality is a false conception which for many years has dimmed the Commissioners' mental vision; can it be that the official eye is beginning to see more clearly? It is apparently a matter of congratulation that "the reports upon the Holloway Sanatorium have recently been of a favourable character."

The Commissioners very properly draw attention to the fact that the Legislature has largely neglected the care and management of idiots, and their suggestion that institutions for such should be put on a line with asylums for the insane will probably bear fruit in the near future. There is, however, a serious lack of special accommodation throughout the country for the large number of idiots and imbeciles who are at the present moment most improperly being treated in county asylums, private asylums and workhouses.

The Commissioners pertinaciously adhere to the statement we corrected last year that there are seventy-five licensed houses. We have again gone through their list—Appendix L—and again can find only seventy-two. Two suicides, both males, occurred in Metropolitan Licensed Houses, and one suicide and one death through misadventure in Provincial Licensed Houses. Copies of the entries made by the Commissioners at their last visit in the year are again furnished, and from these we gather that on the whole the management of licensed houses is generally satisfactory.

The number of single patients shows a further diminution, and the Commissioners remark that they are "unable to avoid the conclusion that while this form of treatment has

not diminished, the tendency has increased to apply it without resort to certification and its concomitant notification," and they are perfectly right, only the matter is not one of speculative opinion, but a glaring fact. The undisguised way in which patients are received uncertified into the houses of medical men, "nursing homes," "sanatoriums," etc., etc., conducted by medical men and others, is undoubtedly scandalous, and so great has the abuse grown that it is beginning seriously to diminish the number of certified insane of the private class. The open way in which the law is being evaded certainly does not redound to the credit of the Commissioners' Office. This and the gradual steady increase in the number of boarders can be due only to the publicity and difficulties with which certification nowadays is hedged around.

The Commissioners have, we all know, much to do, but were they to adopt a more scientific elaboration of the material supplied to them we should all benefit more largely; as it is, we can be but thankful for the crumbs of useful information with which they supply us in their Annual Report to the Lord Chancellor.

Thirty-Ninth Annual Report of the General Board of Commissioners in Lunacy for Scotland. Edinburgh. 1897.

The changes which have occurred in the registered lunatic population of Scotland during 1896 have resulted in the addition to the total number of 383, a considerable increase over that of the preceding year. This represents a percentage increase during the twelve months of 2·8, the estimated annual percentage increase of population being only 0·75; and the ratio to population has risen from 330 to 336 per 100,000. Taking Table V., of Appendix A, as an index of the occurring insanity of the country, the record of 1896, too, compares unfavourably with that of 1895, for, while in the latter there was an actual decrease of 4·6 per cent., in the former there is an increase of 2·9 per cent., the ratio per 100,000 of population rising from 56 to 57·2. But in making these comparisons it is only right to bear in mind that 1895 was, as regards lunacy in Scotland, a distinctly favourable year, and one cannot but regret that the good record of that year has not been maintained.

The table on p. 2 shows the manner of distribution of the total number of lunatics on 1st January, 1897, and the

NUMBER OF LUNATICS AT JANUARY, 1897.

Mode of Distribution.	Male.	Female.	Tot. al.	Private.			Pauper.		
				M.	F.	T.	M.	F.	T.
In Royal Asylums	1,910	2,229	4,139	789	899	1,678	1,121	1,340	2,461
„ District Asylums	2,302	2,371	4,673	57	73	130	2,215	2,298	4,513
„ Private Asylums	51	86	137	51	86	137	—	—	—
„ Parochial Asylums, i.e., Lunatic Wards of Poorhouses, with unre- stricted Licenses	716	789	1,505	—	—	—	716	789	1,505
„ Lunatic Wards of Poorhouses with restricted Licenses	414	438	852	—	—	—	414	438	852
„ Private Dwellings	1,104	1,676	2,780	38	75	113	1,066	1,601	2,667
Totals	6,497	7,559	14,056	935	1,123	2,058	5,592	6,466	12,028
„ Lunatic Department of General Prison	43	19	62	—	—	—	—	—	—
„ Training Schools	226	126	352	93	63	159	130	63	193
Totals	6,766	7,734	14,500	1,031	1,156	2,217	5,652	6,529	12,221

changes that have taken place during the year have resulted in the following differences:—In Royal and District Asylums there is an increase of 17 private and 502 pauper patients; in private asylums a decrease of 7; in parochial asylums a decrease of 109; in lunatic wards of poorhouses an increase of 11; and in private dwellings an increase of 2 private and a decrease of 33 pauper patients. The total increase of 383 registered lunatics is made up of 12 private and 371 pauper patients. The number accommodated in establishments has increased by 414, while in private dwellings there is a decrease amounting to 31.

The private patients admitted to establishments during the year were 33 less than in 1895, and the number of paupers was 111 more than in 1895, and 217 more than the average for the five years 1890-94. In Scotland, as in England, there appears to be a greater liability to insanity on the part of the male population, for, while in every 1,000 of the population there are 35 more females than males, in every 1,000 admissions there were in 1896 only 28 more females, and in the five years 1890-94 33 more females than males.

As will be seen from the following table the recovery-rate in establishments, with the exception of parochial asylums, shows no falling off on that of the preceding year.

Classes of Establishments.	Recoveries per cent. of Admissions.		
	1890-94.	1895.	1896.
In Royal and District Asylums	39	35	33
„ Private Asylums	38	26	40
„ Parochial Asylums	43	46	41
„ Lunatic Wards of Poorhouses	7	6	6

The recovery-rate for all classes of establishments has been for the past 25 years a steadily diminishing one. In the 15 years ending 1884 it was (Tables VII. and VIII. of Appendix A) 46.1 per cent. of admissions, excluding transfers; in the succeeding 10 years it had fallen to 43.5, and in the year under review there was a still further fall to 42.8. The explanation of this fact is, no doubt to a great extent, due to the greater number of old and broken-down cases which are now sent to asylums. Still, it is not a

satisfactory feature, and it will be interesting to note in the years to come whether the recent appointment of the pathologist to the Scottish Asylums will effect any increase in the proportion of cures in these institutions. That is what one naturally looks for, and it will be disappointing if it eventuates otherwise.

The death-rate in establishments during 1896 is 1 per cent. lower than in the previous year, and, as the following tables show, the lowering takes place entirely among pauper patients, though it applies to all classes of establishments.

Classes of Patients.	Proportion of Deaths per cent. on Number Resident in Establishments.		
	1890-94.	1895.	1896.
Private Patients... ..	7.6	6.5	6.8
Pauper Patients	8.7	9.3	7.9
Both Classes	8.5	8.7	7.7

Classes of Establishments.	Proportion of Deaths per cent. on Number Resident.		
	1890-94.	1895.	1896.
Royal and District Asylums	8.8	8.4	7.6
Private Asylums	6.3	10.8	6.4
Parochial Asylums	9.6	10.8	10.1
Lunatic Wards of Poorhouses	4.6	5.7	3.7

It is noteworthy that the year under review is characterised by a still increasing proportion of general paralysis as a cause of death. In 1895 21 per cent. of male and 3.5 per cent. of female deaths were due to this affection, and in this year the proportions have risen to 26.2 and 5.8 respectively. The total number of deaths in establishments is 87 less than in 1895, and this represents a percentage diminution of 9.2—10.6 for males and 7.8 for females; while the deaths from general paralysis have increased by 20, representing a percentage increase of 16.8—11.6 for males and no less than 50 for females. This question of the increase of general paralysis was very fully gone into by the Commissioners

in their Report for 1895, and the further experience of another year has certainly thrown more light on it and of a quite unmistakable sort. It is a curious fact that this considerable increase in general paralysis in Scotland should be coincident with a diminished proportion of these cases in the admissions into asylums in England.

In their comments upon changes among attendants and servants in asylums there is one recommendation of the Commissioners which we feel sure will meet with the approval of all who have the interest of the insane at heart, and that is the provision of comfortable separate cottages for married attendants. Something has, no doubt, been done in this matter, but that its extension would in the end be a real economy hardly admits of doubt, and such an official recommendation as is given in this Report will undoubtedly encourage asylum authorities in their efforts to improve the service of the institutions entrusted to their care.

Twelve suicides occurred during the year, which is double the number recorded in 1895, and on the whole the record of this year is not a favourable one. In the five years 1890-94 the percentage of deaths from suicides and accidents was 1·5, while in 1896 it was 2·3. Patients in Scottish Asylums are allowed a comparatively large amount of liberty, and this may in some measure explain the greater frequency of these causes of death, which in England amounted to only 0·8 per cent. of the total number of deaths in 1895.

While pauper patients have increased in establishments during the year by 404, representing a percentage increase of 4·5, there has been a diminution in the numbers of those accommodated in private dwellings by 33, a percentage decrease of 1·3. The proportion of patients in private dwellings on 1st January, 1896, was 23·2 per cent., and the changes during the year have reduced this to 22·2 per cent. The Commissioners "attach no special significance to the decrease," but that it is due to certain restrictions—restrictions made entirely in the interests of the patients—placed upon the increase of licences for more than two patients and upon the tendency to too great aggregations of patients is, we think, more than probable, for it has only been during the past two years, during which these restrictions have been in force, that any decrease has taken place. These restrictions must too have the further effect of increasing the expense of accommodation in private

dwellings, with the result of further approximating the cost of this mode of provision and that in asylums, and thus indirectly tending to the reduction of the proportion of patients outside asylums. The average daily cost per patient has increased by $\frac{1}{4}$ d., and the increase is the same for establishments other than poorhouses and for private dwellings, whilst in lunatic wards of poorhouses there is a decrease of $\frac{1}{4}$ d. The general result of which is that, taking the average cost as 100, that for lunatic wards of poorhouses is reduced from 80·3 to 75·8, and that for other establishments remains unaltered, while that for private dwellings has risen from 70·5 to 71.

The position of affairs in regard to lunacy administration in Scotland has changed greatly since the General Board was constituted. The Commissioners, impressed by the fact that legal provision for the poor private insane is now inadequate, have made a strenuous appeal in their interests. It is stated that the only institutions now available for the care and treatment of the poorest class of private insane are Royal Asylums and District Asylums. The means possessed by the District Asylums for receiving this class of patient have, however, always been very limited, and are yearly becoming more so. District Lunacy Boards have power to provide accommodation for pauper patients alone; they can only receive private patients when accommodation provided for pauper patients happens to be vacant.

The Report goes on to show how it has proved impossible to meet the wants of this class of patients, although new asylums have been built. The Commissioners freely acknowledge the beneficent work done by existing institutions, and explain how it has been limited. They say:—"The Royal Asylums provide admirable accommodation for the more affluent class; but the increasing demands for the reception of this class . . . continue to limit more and more their power to receive private patients at unremunerative rates. It must not be understood that they do not provide for a large number of private patients at very low and sometimes at merely nominal rates. On the contrary, most of them maintain many such patients. Still their action is mainly confined to special cases, and to the counties and localities in which the asylums are situated. . . . But there are large areas of Scotland, such as those of Inverness, Fife, and Ayr . . . which contain no District Asylum possessing accommodation for private patients, and which have no

special claim on any Royal Asylum for the accommodation of their insane; and in the case of some Royal Asylums, where such claims may be said to exist, the pressure on their accommodation and resources is such that . . . only a very few of the demands for accommodation of patients at low rates of board can be met. The doors of some of the Royal Asylums are, indeed, practically closed to all but two classes—the comparatively rich and the pauper patients of certain districts or parishes for whose reception contracts have been entered into. The poorest class of private patients, pressed between the growing demands of these two classes, are being thus gradually placed in a position of increasing difficulty. . . .

“The impossibility of finding accommodation at a low rate of board for such patients results in some of them, for whom asylum care is urgently needed, being kept at home, and in others being placed in Royal Asylums at rates much beyond what their relatives can really afford, in the hope that recovery may be rapid, or, if the hope should not be fulfilled, that a reduction may be made in the rate of board. But the great majority have no course available but to apply for assistance from the parish council. . . . As soon, however, as the relatives realise that the patient is by this procedure completely pauperised, and no longer therefore in a position in which he can derive any benefit from their contributions, they not unnaturally endeavour to escape wholly, or as far as possible, from the burden of maintaining him. It must be a matter of great difficulty for parish authorities to control this, in the absence of any certain knowledge of the capacity of the relatives to pay, especially where there is no legal obligation to do so. . . .

“We have therefore, in consideration of all the facts before us, come to the conclusion that fresh legislation on the subject is desirable, both in the interests of private patients of the poorer class, and of the ratepayer. In the report of 1891 of the Committee on Lunacy Administration in Ireland, of which Sir Arthur Mitchell . . . was chairman, it is recommended that District Boards should be empowered to provide accommodation for private patients, and a like permissive power, which is being largely taken advantage of, is conferred upon county lunacy authorities in England under the Act of 1890. We think that the time has now come for conferring a similar permissive power upon District Lunacy Boards in Scotland. . . .

“ In the framing of a measure empowering District Lunacy Boards to provide accommodation for private patients in District Asylums, we think it would be desirable that the following principles should be kept in view :

“ 1. District Lunacy Boards should be authorised to receive private patients, and also to provide accommodation for such patients, if they should see fit, by erecting separate buildings or by setting apart for the purpose sections of existing buildings.

“ 2. Private patients being once received should be regarded as having a right of accommodation, and should not be liable to be removed to make room for pauper patients.

“ 3. The rate of Board chargeable for maintenance should not be higher than the maintenance rate charged for pauper lunatics, with the addition, if the District Board should see fit, of a sum in name of rent for the accommodation afforded.

“ 4. This sum in name of rent should not exceed a charge calculated on the net cost of what may be required to provide the buildings, and we believe it would be an eventual saving to the ratepayers if the District Board were empowered to charge the maintenance rate only in cases where they are satisfied that a higher rate cannot be afforded.

“ We attach great importance to the limit of the rates of board indicated in heads 3 and 4. Permission to District Lunacy Boards to charge higher rates than those indicated would not only bring District Asylums into undesirable competition with Royal Asylums which have sunk large sums in providing for private patients, but would defeat the very objects for which the measure is proposed. It would not be one of its objects to lessen the burden on the ratepayers by the profits from keeping private patients, but to prevent burdens falling on the rates by offering no excuse for the acceptance of parochial aid. Anything in excess of the lowest charge in repayment of expenditure would both nullify the encouragement intended to be held out to relatives to support their insane, and would tend to replace the class of the insane for whose benefit the proposed legislation is specially intended, in the position in which they are at present. It is believed that the class of private patients referred to would not, as a rule, differ greatly from the class from which many of the pauper patients are drawn. Pauper lunatics are not drawn wholly from the classes of the community which produce ordinary pauperism ; they include

all, from the poorer or less successful professional man or man engaged in commerce downwards. Private patients in District Asylums may be therefore expected to be drawn chiefly from those occupying much the same social status as many of the pauper patients. They might be engaged in useful healthy work, such as the present pauper inmates of asylums engage in, and they would not require a better dietary or more expensive accommodation than that provided for pauper patients."

It will be observed that the Commissioners ask for extension to Scotland of the powers granted to County Lunacy Authorities in England, and that they safeguard the position of the Royal Asylums, the welfare of the insane, and the interests of the ratepayers, by proposing very definite restrictions on the rates to be charged by District Lunacy Boards. Such a scheme deserves well of all classes. It would constitute a measure of relief to the ratepayers, it would conserve Scottish independence, it would benefit large numbers of the deserving poor. We therefore commend it to the active support of our Association.

There is ample evidence in this Report that, as regards its lunacy administration, Scotland continues to maintain the high position it has hitherto held. We do think, however, that there is a still higher duty than that of making adequate provision at a reasonable cost for the existing lunacy of the country. The never-failing stream of lunacy goes on year by year in undiminished, if not increasing, force; and we trust that it is not an impossible task to devise some means of stemming it and thereby adding not a little to the happiness of the people and easing the burden which becomes ever more onerous.

Forty-Sixth Report of the Inspectors of Lunatics, Ireland, for the year 1896.

The tide of lunacy seems ever flowing. We wait in patience, as those who have gone before us have waited, for the turn, but it does not come. Each year we scan the high-water mark, and hope, but with only a half-hearted expectancy, that the maximum limit has at last been reached, but the flood still creeps upward with a wearisome, irritating persistence, and we look in vain for the ebbing. And yet it must come. On *a priori* reasoning, if there were no other grounds for the conviction, it must come. In Ireland we

have the phenomenon of a fast-waning sane population, reduced to one-half within the last fifty years, and at the same time a rapidly increasing insane population—more correctly speaking, an increasing population of registered lunatics. If this process were to go on indefinitely the insane must eventually out-number the sane. Such a contingency is so utterly outside the bounds of probability as to rank with the impossible. Sooner or later finality must be reached. The tide must turn. But when?

The latest Report of the Inspectors (for 1896) has nothing in it to indicate that the wished-for change is at hand. It has to chronicle the same monotonous fact which has appeared with such unbroken regularity in its predecessors, that there has been a substantial increase in the number of insane under care. The following is the Inspectors' summary of the numbers and distribution of insane in establishments in 1896 and 1897 respectively:—

	On 1st January, 1896.			On 1st January, 1897.		
	Males.	Females.	Total.	Males.	Females.	Total.
In District Asylums	7,287	6,045	13,332	7,680	6,361	14,041
„ Central Asylum, Dundrum ...	140	23	163	145	20	165
„ Private Asylums... ..	305	358	663	318	358	676
„ Workhouses	1,724	2,388	4,112	1,636	2,356	3,992
„ Prisons	1	—	1	—	—	—
Single Chancery Patients ...	47	39	86	45	47	92
Total	9,504	8,863	18,367	9,821	9,142	18,966

The total increase for the year was 609, a figure largely above the average of the past ten years, 405. One grain of comfort appears; the number of insane in workhouses has decreased by 120. That the population of the District Asylums has been increased very considerably by the transference to them of workhouse patients is an admitted fact. But the data for estimating the actual amount of increase traceable to this particular source are not forthcoming. And they ought to be. What would be easier than to have a return included in the annual statistics of each asylum of the number of patients transferred thither from the various unions? It would not be a very difficult task to compute

the number of admissions from workhouses for the past ten or fifteen years. Such a table would serve a useful purpose, and place us in a position to estimate with tolerable accuracy the part these transfers play in the "increase of insanity." As regards workhouse patients, however, even the meagre amount of material at our disposal enables us to make more than a mere conjecture as to what is taking place. A reference to the Census Table quoted on page 3 of the Inspectors' Report shows that the insane in workhouses numbered 1,511 in 1861, 2,457 in 1871, 3,479 in 1881, and 3,957 in 1891. That is to say there was an increase of 946 in the first decade, of 1,022 in the second, and of 478 in the third. It is a matter of grave doubt whether these census figures are at all correct. As the table has appeared with unflinching regularity in no fewer than six successive Reports, it is to be assumed that the Inspectors themselves have confidence in its accuracy. To the ordinary mind, however, the fact that it makes the total number of idiots increase by 1,897 during the ten years 1871-1881, and decrease by 2,396 in the succeeding decade seems inexplicable. What possible cause could bring about such a result? There is also a serious discrepancy between the numbers given in the Census Table and those given in Table L. on page 44, presumably on the Inspectors' authority. In the Census Table the number of lunatics (7,547) and idiots (1,896) stated to be in asylums make a total of 9,443, whereas the numbers stated in the Inspectors' own table to be in District Asylums (8,978), Central Asylum (173), and Private Asylums (635) total up to 9,786, a difference of 343. This seems a greater difference than may be accounted for by the fact that the numbers were computed at different times during the same year. The difference between similar returns for 1891 amounts to 247. In the late Inspectors' Reports the numbers of insane in workhouses for 1871 and 1881 are given as 2,914 and 3,640, showing a difference from those of the Census Returns of 457 and 161 respectively. Whichever figures we take, however, it is evident that there was an increase of about 1,000 patients in workhouses during each of the decades between 1861 and 1881. In the following decade (1881-1891) there was also an increase, but it had fallen to in or about 500. (It is only possible to be roughly accurate.) But in the last half-decade, 1891-1896, if we take the figures in the Inspectors' table as correct, there has been an actual, though slight, decrease. This is a significant fact taken in connec-

tion with the circumstance that in latter years the transfers from workhouses to asylums have been much more numerous than formerly. If all the patients in workhouses were once safely housed in asylums one source of the apparent "increase of insanity" would be cut off. And if all the "insane at large" (also a diminishing quantity) could be similarly dealt with we should probably hear but little of this increase. The effect of the workhouse element may to a certain extent be gauged by the fact mentioned in the Report that the ratio of insane in District Asylums to the total number under care in 1880 was 67 per cent., and in workhouses 27 per cent.; whereas in 1896 the ratio in asylums had risen to 74 per cent., while in workhouses it had fallen to 21 per cent.

The following table, compiled from various tables in the Report, gives a bird's-eye view of the changes in respect of increase or decrease which have occurred during the past ten years in District Asylums:—

No. of Patients in District Asylums on 31st December in each year.			Daily Average.		First Admissions.			Readmissions.			Total Admissions.		
	Inc.		Inc.			Inc.	Dec.		Inc.	Dec.		Inc.	Dec.
1886	10077	205	9996	217	2140	—	—	606	—	—	2'46	—	—
1887	10499	422	10263	265	2243	103	—	620	14	—	28'3	117	—
1888	10625	326	10691	428	2190	—	53	631	11	—	2821	—	42
1889	11180	355	11019	328	2329	139	—	627	—	4	2956	135	—
1890	11488	308	11297	278	2451	122	—	644	17	—	3095	139	—
1891	11733	245	1164	347	23'0	—	101	680	16	—	3010	—	85
1892	12133	399	11966	314	2415	65	—	766	106	—	3181	171	—
1893	12434	301	1220	349	2458	43	—	749	—	17	3207	26	—
1894	12771	337	12605	298	2448	—	10	781	23	—	3229	22	—
1895	13332	581	13082	477	2458	10	—	758	—	23	3216	—	13
1896	14041	709	13735	653	2564	106	—	765	7	—	3329	113	—

From this it will be seen that in 1896 the increment in the number of patients under care at the close of the year (709) is much larger than any noted during the past ten years; in fact it is more than double the average annual increase (348) of that period. The daily average shows a similar advance,

the increase in it over that of 1895 being 653, and the average increase of the previous ten years 330. The total number under care on 31st December, 1896, was 14,041; and the daily average 13,735. The total admissions were 3,329, first admissions numbering 2,564 and readmissions 765, or an increase under each head of 113, 106, and 7 respectively. It is not possible to make any reliable deduction from these figures. The increase in 1896, especially of first admissions, is unusually large, but the numbers vary so irregularly from year to year that they baffle any attempt to frame conclusions upon them. If we take first admissions, for instance, for the past six years, what can explain the fact that in 1891 there was a decrease of 101, in 1892 an increase of 65, and in 1893 of 43; in 1894 a decrease of 10, in 1895 an increase of 10, and in 1896 an increase of 106? If we were furnished with a list of the transfers from workhouses it might help to a solution of the problem, but these we do not possess. The Inspectors comment much to this effect. If they were to issue a return of the workhouse transfers for each year this particular point—an important one—would no longer be left to surmise.

It is to be regretted that many of the more useful tables which are issued with the English Blue Book are conspicuous by their absence from the Irish one. Statistics for any single year give a certain amount of bald information; but they are useless for purposes of comparison. For this they should be extended over a series of years. This is done in Table I. (giving the number and distribution of lunatics from 1880 to 1896) at the end of the general Report, between it and the statistical tables of the first "Appendix." But why should this table not take its proper place at the head of the series as in the English Blue Book? And why should it not be followed by a table somewhat similar to the English Table II., giving the ratio per 10,000 of the various classes of the insane? A partial table of this kind is inserted in the body of the Report on page 4, but it loses half its value by the distribution being omitted, as the *relative* ratios of the various classes of lunatics through successive years constitute one of the most material points to ascertain in the study of lunacy. There is nothing in the Irish Blue Book corresponding to Tables III. to VIII. of the English one, in all of which the statistics of a number of consecutive years or periods are given, so that a comparison of figures can be made at a glance; whereas, in order to

obtain similar information, the unfortunate reviewer of Irish lunacy statistics is forced to wade with slow and painful steps through a mass of individual Blue Books. This work should not be shirked in the Irish Lunacy Office. If the clerical staff there is undermanned, then its strength should be forthwith increased, so as to give a greater element of completeness—now sadly wanting—to returns published for the information of Parliament and of the country. The Inspectors have from time to time commented upon the desirability of having Irish lunacy administration assimilated as far as possible to that of England and Scotland. Example is better than precept, and as regards statistical tables, if they were (literally) to take a leaf, or rather several leaves, out of the Blue Books of those countries the value of their own would be greatly enhanced.

One observation in the Report we totally dissent from. On page 3 the Inspectors say:—"We must repeat that, having regard to the fact that the male population in asylums in Ireland so greatly preponderates over the female, *whilst insanity is at least as prevalent amongst women as amongst men here as elsewhere*, it is to be expected that the admission of female patients will increase from year to year until the ratios of the sexes are more nearly equalised." This is an admirable instance of "begging the question." What has never been proved, or rather what statistics, if anything, disprove, is assumed as a fact, and an argument of prophetic character founded thereon. The writers speak without book. The proportion of females to males in Irish Asylums, calculated on their own Table I. of Appendix A., has remained absolutely unaltered for the past 17 years. In the first three years of this period the ratio of females in asylums to the total number of patients was 45·9, 45·8, and 45·8 respectively. In 1889 and 1890 it just touched 46·0; and in 1894, '95 and '96 it was 45·1, 45·1, and 45·2. In the face of these figures the surmise of the Inspectors must be held to be as yet unsupported by facts. In lunacy matters, as in many others, Ireland may have to be regarded as a "separate entity." Irish lunacy is said to differ from English and Scotch in one remarkable particular—the lesser frequency of general paralysis. Why should it not differ in another, viz., that the male insane should preponderate over the females? We should, it is true, expect the contrary to occur, even more than in England, emigration, presumably, having much more effect in Ireland, being on a larger scale

in proportion to population, and removing so many of the healthy male adults, leaving the more weakly ones behind. Why this should be so is another question to which we are not likely to find an answer, except such as was the unfailing resort of a once well-known grinder in Trinity College, Dublin, when he had to face an inconvenient poser from some student thirsting for knowledge, which he was not prepared to give him:—"I can't tell you, sir; it's the will o' God."

The recovery-rate in 1896 was 37·2 per cent. on admissions, that of the previous year being 39·8. The death-rate also was lower, being 6·7 per cent. on the daily average as compared with 7·1 in 1895. This lower recovery and death-rate combined must, of course, have increased the amount of accumulation at the end of the year. The highest proportion of recoveries recorded is at Omagh, which was 49·4, and following it in order came Belfast, Ennis, Enniscorthy, and Ballinasloe, all these being 48 per cent., or over. Those with lowest rate are Letterkenny, Richmond, Sligo, and Kilkenny, descending in order from 25·2 to 21·3. The dietary in use in Kilkenny Asylum, which was commented on in last year's Report, does not seem to have been improved. It has the advantage of extreme simplicity. Every morning, except Sunday, the patients, male and female, get 6½ oz. of oatmeal and 1 oz. of rice in porridge, with two-thirds of a pint of milk. On Sundays bread is substituted for porridge. Every evening the same allowance of milk with 8 oz. of bread for males and 6 oz. for females. For dinner on two days of the week 40 lbs. of meat are allowed for 100 patients, with bread and vegetables; on one day Irish stew; and on the remaining four days bread and butter and cocoa. The meagreness and monotony of this diet would hardly be conducive to recovery. Possibly extras are given freely to patients who need them, otherwise the wonder would be if any recoveries should take place. Strange to say, the recovery-rate in this asylum ran up as high as 64 per cent. in 1885. But the vagaries of asylum recovery-rates are inscrutable, Clonmel presenting a remarkable record in this respect, a recovery-rate of 81 per cent. having been chronicled in 1885, while in 1898 it sank to 17! The term "recovery" has no doubt greater elasticity of meaning in the case of insane patients than it usually has. And the fact of a patient's recovery being a matter of mere opinion, it is obvious that the number of recoveries in any asylum will depend, to a great extent at least, upon the optimistic views or otherwise of the recorder.

The average percentage of deaths on daily average was 6·7, ranging from a maximum in Omagh and Letterkenny, where conditions more or less insanitary appear to exist, of 10·4 and 10·3 respectively, to a minimum in Enniscorthy (4·5) and Armagh and Kilkenny (4·7). The mortality in Castlebar has decreased from 11·1 per cent. in 1895 to 8·4 in 1896, the reduction being, no doubt, in great measure due to the discontinuance of the use of an impure water supply, condemned in severe terms in the Inspector's Report of June, 1895. The value of this object-lesson is apparent.

The relative mortality from phthisis is an interesting but perplexing study. Two hundred and fifty-five deaths out of a total of 926 were due to this cause, representing a percentage of 27·5, which is precisely the same as in 1895. Now, the puzzling thing is this. Armagh and Belfast are both overcrowded. Of the former the Inspector in his Report says:—"The one blot is the overcrowding of the wards;" and of Belfast:—"It is quite useless to refer at any length to the great overcrowding of the parent asylum at Belfast." And yet these two asylums, each suffering from a congested population, can show the lowest mortality from phthisis, the ratio being only 6·4 and 6·8 respectively. Whereas Mullingar, deservedly regarded as one of the best managed of Irish Asylums, with an able Superintendent and a liberal Board of Governors, who seem only anxious to be up-to-date in all their arrangements—having, in addition to numerous other improvements, provided within a recent period a splendid and inexhaustible water supply, an entirely new drainage system "on the most modern principles of sanitation," the "Plenum" system of heating and ventilation, and a magnificent electric installation—this model asylum, in every way, notwithstanding its superb advantages, and as if in mockery of all our theories, has one unenviable pre-eminence—it exhibits by far the highest relative mortality from consumption, viz., 44·4 per cent. And, as a still further illustration of the irony of facts, the mortality among the females, 47·6, is considerably higher than at the male side, 40·0, the latter being overcrowded, while there has been abundance of space at the female side. It should be mentioned that the general death-rate is much the same in all these asylums, Belfast and Mullingar being almost identical (5·3 and 5·2), while Armagh is somewhat lower (4·7). Why half the females who die at Mullingar should die of consumption is an enigma which still awaits solution. The asylum has been described by the Inspector

as "a busy hive of industry." Can it be that there is too much *indoor* employment for a class the majority of whom are accustomed to spend most of their time in the open air? Desirable as employment is in the treatment of the insane, it is just possible that with the very best intentions this might be carried to an extreme. It would not be desirable to assimilate the life and surroundings of asylum patients to those of factory operatives.

Three deaths resulted from suicide—two by strangulation, in the third case the patient placed himself in front of a railway train, and was killed instantly. Only three deaths were due to accidents. The rarity of such occurrences is again a matter for congratulation, and is highly creditable to the various staffs who perhaps, on this head, hardly receive from the public the appreciation they deserve. As a writer in a lay journal has recently remarked:—"The fact that the public only become aware of what happens, and never of what is prevented in asylums should always be borne in mind in commenting upon these accidents." A graceful tribute to a class of persons whose difficulties and hourly anxieties are all but unknown to any but those who have lived in asylums themselves.

The deaths from general paralysis were 34, being five less than in 1895. The large majority of these were in the Richmond Asylum. The disease does not appear to be making great progress even in Dublin. In most of the country asylums it is said to be non-existent.

In 220 cases post-mortem examinations were held, or 23·7 per cent.; a lower proportion than last year. It is to be feared that a very long time must elapse before the prejudices of the Irish in this respect will be so far overcome that permission will be universally accorded for autopsies. It is to be regretted that the Inspectors have not the courage of their convictions in this matter, and do not adopt regulations making these examinations mandatory, in accordance with the suggestion made by the Superintendent of the Limerick Asylum in his evidence before the Trench Commission many years ago. The same reasons connected with the protection of the patients and of their attendants which have caused such a regulation to be the law in the prison service apply equally to asylums. At present the difficulty of dealing with the reluctance of patients' friends, and the risk of violating the existing rules, form a barrier to advance, and to this rather than to any

unwillingness on the part of the medical staffs must the scantiness of pathological work in Irish Asylums be mainly attributed.

Seventy-two per cent. of the admissions were on warrant, as compared with 76 in 1895. The Inspectors again express regret at the so frequent use of this method, which they stigmatise as "cumbrous and objectionable." They ought to be weary of pronouncements of this sort. What is wanted is energetic action. The Lord Chancellor is the nominal head of the Lunacy Department. The Inspectors, however, are the working heads, supposed to be fully conversant with the points of lunacy law in which reform is needed. They have the ear of the Privy Council, which has framed the "Rules and Regulations" for the management of lunatic asylums. Have they pressed upon that body the urgent necessity there is for certain changes in the law? If they fail there, why should not the Lord Chancellor be called on to intervene? A Bill for consolidating and amending the provisions for lunacy administration scattered through various Acts of Parliament should be drafted, and is just one of those measures which would be most suitably initiated and discussed in the House of Lords. In 1890-91 an important Commission on Lunacy Administration in Ireland was held. Its views and recommendations were embodied in a report, which was, of course, "presented to both Houses of Parliament by command of her Majesty." In this report the Committee dealt at some length with the question of dangerous lunatics. They say:—"It is clearly undesirable that so many lunatics, who cannot be properly described as dangerous, should be committed to asylums as dangerous, and in this matter it appears to us that the law requires change." And, after describing the provisions of the English and Scotch laws bearing on the subject, they add:—"We recommend that similar provisions should form a part of fresh lunacy legislation for Ireland. We think it would be possible to combine in a new Irish Law the distinctive characters of the English and Scotch Laws on this subject, modifying them to suit the circumstances of Ireland." Over six years have elapsed since this report was issued. Has a single step been taken to give effect to this or any other of the recommendations of the Committee? Is the report to be allowed to remain a dead letter? Was the whole proceeding, like many another Parliamentary Commission, a mere farce?

The total cost of maintenance in 1896 was £321,914 12s. 6d., of which £176,585 7s. 1d. was paid out of County Cess; £130,653 17s. 7d. was received as Government Grant; and £6,075 1s. 7d. contributed by relatives. The amount from the latter source might be considerably augmented but for the inane restriction of Privy Council Rule XXIX., which limits the amount to be contributed by a paying patient to the average cost of maintenance of a pauper patient. A different plan is found to work well in Scotch Asylums, and it would probably be to the advantage both of patients and of ratepayers if a change in this direction were to be made in the Irish regulations.

The present Irish rule taken in conjunction with the regulation which is interpreted to mean that no difference is to be made between the treatment of public and private patients, seems to have been framed for the purpose of keeping the latter class out of District Asylums, and this is hard, because there are in Ireland virtually no other places for insane persons of small means to go to.

The average capitation cost was £23 8s. 9d., or 3s. over that of 1895. As usual the various asylums differ widely in this respect, Mullingar heading the list with £29 0s. 5d., closely followed by the Richmond, where the cost is £28 13s. 11d. At the bottom of the scale are Ballinasloe, £18 16s. 6d.; Kilkenny, £18 9s. 8d.; and Castlebar, £18 6s. 3d. There must be some very radical difference in the treatment of patients in these last three asylums from what they receive in Mullingar to account for the cost of a patient in the latter institution being once and a half as great.

In their remarks on the subject of Private Asylums, the Inspectors allude to the inadequate provision for the care of the insane of limited means, who are not paupers, but whose means do not admit of their being sent to a Private Asylum. They recommend that in any future legislation the local authorities should have power to provide accommodation for the insane paying low rates of board, "but entirely separate from District Asylums." In the marginal note this accommodation is said to be recommended "in connection with Public Asylums." We presume what is meant is that such accommodation should be provided in a separate building from a District Asylum, but connected with it by being under the same administration; such an arrangement, in fact, as obtains in Morningside and other

Scottish Asylums. In this recommendation we heartily concur.

In reviewing the forty-fourth Report of the Inspectors, and commenting on the unlucky conjunction of these gentlemen with the Board of Control, we observed, "The Board of Control, unlike other great spending departments, publishes no report of its transactions." We are glad to find that our hint seems to have produced an indirect effect. At page 15 of the forty-sixth Report, the Inspectors say:—

"Inasmuch as the responsibility for structural works is made by statute to rest exclusively on the Board of Control, of which we are members, we deem it advisable to submit in full a very interesting and valuable memorandum as to all that has been done under this head, during the decade 1886 to 1896, just furnished to us by Mr. S. Ussher Roberts, C.B., the Consulting Architect to the Board."

Mr. Roberts, to whose ability and tact the Board of Control owe an immense debt, has prepared a most instructive report. It is quite true that a report dealing with expenditure of public money running to such figures as those here dealt with, should not appear as a mere parenthesis in the Reports of the Inspectors, and it is also unfortunate that we are deprived of the valuable criticisms of the Inspectors, who of course cannot assume a judicial position with regard to executive work, the responsibility of which by statute rests upon them in conjunction with others. In asylums built before 1895 the estimated cost of works already executed and those in progress is £727,189; and that of asylums which have commenced to be built since 1895 £631,600. The latter include new asylums for Londonderry, Antrim, and Belfast, as well as an additional asylum for the Dublin District at Portrane. The old asylums of Londonderry and Belfast being situated within their respective cities are about to be relinquished, and the old district of Belfast, which consisted of the County of Antrim and City of Belfast, is being divided. Apparently all the District Asylums stood in need of extension, and extensions are being carried out everywhere. The Board of Governors of the various asylums seem to have assented in a very liberal spirit to the claims made upon the local purse, and though, here and there, a pretty loud clangour has arisen, as the rusty wheels of the rickety bureau were being got into work, there prevails in most places a wonderful harmony which may be put to the credit of Irish patience or

to the discredit of Irish indifference. Neither of these qualities is likely to be much longer subjected to the severe strain which the relations of the Board of Control and the Boards of Governors to each other involved.

The memoranda of inspection made at the various district asylums contain much that is interesting and that seems to show much activity on the part of medical officers. We note a strongly personal tone in these memoranda. Eighteen years ago or so we noted, in dealing with the Inspectors' Reports of inspection, that those gentlemen always spoke in the first person singular, and we then commended the Scotch Commissioners for eschewing this practice even though they do not hunt in couples after the English fashion. Though the *personnel* of the Irish Commission has changed, the custom we refer to remains. Even where the matter of these memoranda is not, as in some cases, distinctly suggestive of controversy, the manner is personal to a degree that is unusual in official reports, and is perhaps calculated to deprive of their due weight the carefully considered utterances of the Inspectors. At the same time it is right to say that the reports on individual asylums and their officers are frequently kindly and appreciative.

L'Année Psychologique. Publiée par M. ALFRED BINET.
Paris : Schleicher Frères, 1897. Pp. 825. Price 15 fr.

The title-page of the third issue of this valuable year-book shows that various alterations have taken place since the previous issue. Prof. Binet is now nominally, as he has been virtually throughout, at the head of the undertaking; M. Victor Henri, as his chief assistant, is editorial secretary, and the publisher has been changed. There are also certain alterations in the work itself. The volume is smaller by 200 pages than the previous volume, the diminution being entirely accounted for by the decreased space given to original memoirs, a section of the work to which we alluded last year as the least essential to such a year-book. The other change is less satisfactory; morbid and abnormal psychology receive far less attention in this than in the second volume; there may be adequate reason for this discrepancy, but it certainly seems to render the work less valuable, not only to the medical, but also to the purely psychological student, both of whom need to recognise the intimate

relationship between the normal and the abnormal in psychology. At the same time, however, abnormal psychology is by no means wholly banished from the volume. On the whole the work is carried out with all the care and thoroughness which we have now learnt to expect from its accomplished editors, and Mr. Farrand and Mr. Warren are again responsible for the admirable bibliography of 120 pages.

The first of the original memoirs is a short paper by Prof. Ribot, on the Abstraction of Emotions; it is the complement to the chapter in *Psychology of the Emotions* on the Emotional Memory which the author regards as the first stage in the abstraction of emotions, and incidentally there is an interesting analysis of the method of procedure of the symbolist school of poets. This is followed by an experimental study by Binet and Courtier, on the diurnal changes in the form of the capillary pulse, in which it is shown that without exception the influence of meals is translated into an augmentation of the capillary pulse or an accentuation of diastole, independently of temperature, and that whatever accidental variations may be due to exercise, emotion, intellectual work, fatigue, etc., a regular rhythm still persists. This study is the first of a series by the same authors, on the psychological aspects of the circulation; in the next and following memoirs the influence of muscular and intellectual work on the capillary pulse is investigated. The idea of an antagonism between the circulation in the brain and that in the limbs is rejected (as it is also by Mosso, who formerly propounded it), and it is concluded that a short and energetic intellectual effort produces functional excitation, vaso-constriction, acceleration of heart and respiration, followed by slight slackening of these functions, and in some subjects diminished diastole; while intellectual effort, prolonged for several hours with relative immobility of the body, produces slowing of the heart and diminished circulation in the peripheral capillaries. The last and longest of this series of studies is on the influence of the emotional life on the heart, respiration, and capillary circulation. It is not easy to summarise briefly the conclusions of this interesting series of experiments; it is shown that all the emotions are really stimulants (though pain to a much less extent than, for instance, fear), producing an acceleration of respiration and of the heart, and provoking vaso-constriction, the effects increasing with the intensity of the emotion. In a few rare cases emotions of pain and sadness have produced slight slowing

of the heart (it must be remembered that we are dealing only with short, sudden emotions in healthy persons); and there is some reason to believe that the form of the capillary pulse changes with the quality of the emotion, "which may some day permit a classification of the emotions according to their physiological effects on the form of the pulse." A detailed investigation into the physiological effects of music on a single subject is embodied in this study. The following study, by Binet and Vaschide, deals with the influence of intellectual work, emotion, and physical work upon the blood pressure, investigated by means of Mosso's sphygmomanometer, which the writer considers of great value; it is shown that all these influences are stimulants of the nervous system, physical work being the most intense, and intellectual work the least intense stimulant. In a subsequent memoir, V. and C. Henri, working on the answers to a *questionnaire* concerning the earliest recollections of childhood, find that the third year is the chief epoch for such recollections, that they are far more often visual than auditory, and that when they are very trivial it has often happened that the really serious emotions, associated with the visual reminiscence, have been forgotten. The following memoirs are by Vaschide, on the Localisation of Memories; by V. Henri, on the Localisation of Tactile Sensations and Aristotle's Experiment; by the same writer, on Psychic and Physical Work and the Factors Involved, with special reference to the labours of Kraepelin and his school; and by Binet, on the "Paradox of Diderot," in which he shows by investigating the experiences of the leading actors at the Comédie Française, that emotion plays a real part in the actor's work; and, finally, a study by Binet, founded on the descriptions of the same photograph, furnished by a number of children and noting the various psychological types revealed by such descriptions.

L'Evolution des Idées Générales. Par TH. RIBOT. Paris: Alcan. 1897. Pp. 260. Price 5 fr.

The present volume follows closely after the same author's *Psychology of the Emotions*, and while it shows Prof. Ribot's customary ability and erudition in expounding and simplifying psychological problems, it is much less interesting than that volume. The psychology of the emotions opens up so many difficult and fascinating problems, affecting every part

of life and many fields of science, that any fairly adequate discussion of the matter must needs prove generally attractive. The evolution of abstract ideas is a much less impassioning subject, and, moreover, the author has much less new light to throw on it. He mostly contents himself throughout with a methodical summary and lucid presentation of those views of the question with which he is in sympathy, confining himself so far as possible to the evolution of general ideas and ignoring the quarrels of nativists and empiricists as to their essential nature. "This is," he writes, "a study of pure psychology from which everything relating to logic, the theory of knowledge, and philosophy has been strictly eliminated; we are here only concerned with genesis, embryology, evolution. We must therefore rely on observation, and on the facts in which mental work is incarnated and revealed." In pursuance of this evolutionary idea, Prof. Ribot seeks his documents among animals, children, uneducated deaf-mutes, primitive and half civilised races, and in the development of scientific notions, theories, and classifications.

Starting from the statement that intellectual activity may always be reduced to one of two types, either association and verification, or dissociation and separation, Ribot finds that abstraction belongs to the second type and is "a natural and necessary process of the mind dependent on attention, that is to say the spontaneous or voluntary limitation of the field of consciousness," and, so far from being rare, is one of the commonest of mental acts. He finds the simplest type of generalisation in the formation of a "generic image," using a simile derived from Galton's composite photographs, and first applied to psychology by Huxley. This generic image results from a *spontaneous* fusion of images, and is produced by the repetition of more or less similar events. It consists in an almost passive process of assimilation, is not intentional, and only deals with the grossest resemblances, of which it is the accumulation and summation, moulded at last into a solid kernel, from which minor differences have fallen away, and which becomes capable of further development. This early evolution is studied through three chapters, in animals, in children, and in deaf-mutes, in regard to whom much material is found in the early work of Gerardo, dating from a period when deaf-mutes were less frequently subjected to education than at present.

After a fairly full and interesting discussion of speech, in the course of which regret is expressed that linguistics has yet received so little attention from psychologists, Ribot passes on to deal with the superior forms of abstraction generally, and then to the evolution of the principal concepts—number, space, time, cause, law and species—to each of which a chapter is devoted. With regard to the conception of number, Ribot appears to be in essential agreement with James that it is primarily the stroke of our attention in the discrimination of things, being thus directly reducible to what the author regards as the essential and fundamental condition of abstraction. Space is traced from its first concrete form in the intuition of definite extension. Time is considered to be a complex state or, rather, process; the vital rhythmic sensations, like respiration, constitute its kernel—"it is an internal chronometer fixed in the depths of our organism"—and to this subjective element are added and co-ordinated other objective elements, the regular successions arising from external sensations, and forming the envelope of the kernel. The conception of cause is briefly developed from its primitive form in experience as a force, a power which acts and produces, to its final development in the law of universal causality.

In the concluding chapter the author points out that the progressive march of abstraction and generalisation depends on two principal causes, the first (of general character) being its utility, the second (more accidental and sporadic) the appearance of discoveries, corresponding to spontaneous variations in evolutionary biology. The development of abstraction is thus due to social causes—to utility and to imitation. If the progress of abstraction, from its lowest to its highest stages, is considered from another point of view in relation to its aims, it is found to have followed three main directions in its historical course: practical, speculative, scientific. It is to a considerable degree an unconscious process, and the author concludes that the psychology of abstraction and generalisation is in large part the psychology of the unconscious.

It may be added that this volume is a summary of lectures delivered at the College of France during 1895, and that it is the first of a series which Prof. Ribot hopes to publish, dealing with the whole range of psychology: the unconscious, perception, images, will, movement, etc.

Psychologie als Erfahrungswissenschaft. Von HANS CORNELIUS.
Leipzig: Teubner. 1897. Pp. 445.

This work is an attempt to give on an empirical basis a descriptive account of psychology which shall be scientific and, one might add, philosophic. It is in striking contrast to many recent works which are crowded with facts and details of individual psychology. The author seeks to ignore individual psychology altogether, and only to present the broad aspects of psychic life in their most abstract and generalised forms. His relationships may perhaps be most clearly realised by his sympathetic and admiring references throughout to Kant, James, Helmholtz, Avenarius, and Mach, while to Wundt and his school very little reference is made. He is opposed to "atomistic" psychology, which seeks to account for mental processes by a synthesis of hypothetical elements; he is opposed to a *merely* associational psychology; he is still more opposed to a psychology founded on brain physiology ("the psychic phenomena are certainly in some degree *dependent* on the physiological processes in the nerve substance, but they are not *identical* with them, and the description of one is not the description of the other.") Nor will he found psychology on any metaphysical hypothesis. It must, like every other science, be a description of facts. He lays great stress on the assertion (made by Kirchhoff in relation to physics) that all explanation is a simplification of description, and he desires to describe psychic facts as completely and as simply as possible; a mere reckoning up of isolated observations he regards as the least simple method of explanation, not worthy to be called science at all. Like James (whom he couples with Hume) the author regards consciousness as a stream, and sometimes also (as James would not) as a chain. His most fundamental idea is what he calls "the principle of unity" (*Einheitsprincip*). This law is described as "the endeavour manifested throughout our psychic life to bring together various parts, according to their resemblances, under *common* symbols." In other words it is the tendency "everywhere so far as possible to indicate by a comprehensive symbol the common element in varying phenomena." Psychology for the author may thus be said to deal very largely with the formation of abstract ideas. He finds his principle of unity already indicated by Berkeley, but more especially developed by Mach and Avenarius. It is the

former's principle of economy in thinking, the latter's principle of thinking with the least expenditure of energy. (Herbart and Beneke have set forth somewhat similar principles). We seek, so far as possible, to range all our experiences under already known ideas, to bring them under the same symbols as previous experiences, and in so doing we are seeking to classify them with greatest economy, least expenditure of energy or most simplicity. Scientific endeavour is thus the continuation of a really primitive mode of thinking, which may be traced throughout, and which has as its object the abbreviation of our experiences; such abbreviation is, in science, a theory of these experiences.

It is scarcely necessary to follow the author through his broad and comprehensive, but very bald and colourless, discussion of psychic phenomena. The author throughout deliberately avoids definite illustrations or detailed facts. This seems to be a mistake, for, as Ribot has shown, even the most abstract conceptions may thus be to a large extent illuminated. One may again compare this book with Professor James's great work, *The Principles of Psychology*, which also deals with psychology on a broadly descriptive and non-metaphysical basis. James's work is full of instructive and interesting detail, which certainly enriches rather than impedes the argument. The present work, notwithstanding its ability, is scarcely adapted for a textbook, or for other practical purposes, while its baldness renders it somewhat unprofitable to read.

Leçons de Clinique Médicale. Par le Dr. PIERRE MARIE.
Paris : Masson et Cie, Editeurs. 1896. Pp. 296 ; figs.
57. Price 6 fr.

These 16 lectures were delivered by Marie at the Hôtel-Dieu Hospital, and include quite a variety of subjects—no doubt largely determined by the kind of case which happened to present itself at the Clinique, so that the volume before us may best be described as a collection of monographs on interesting medical diseases, and as a rule illustrated by more or less typical cases. It is a curious fact that the publication of books of this kind (collections of clinical lectures) is very much more frequent in France than in our own country, probably for reasons of a complex kind; but it seems to us that medical science benefits by the practice,

especially when the pen is wielded by the skilful hand of such a good clinical observer as Dr. Marie.

Rheumatoid arthritis is the subject of the introductory lecture, and Marie draws special attention to the form of this disease, which is distinctly of infectious origin, and which presents certain marked characteristics; it readily affects the serous membranes in connection with joints, and is especially obstinate. Salol appears to be the only drug which may influence it.

Lect. ii. and iii. deal with the important subject of thoracic deformities and their relations with certain visceral affections. In these days of refined diagnosis, where bacteriology and the phonendoscope are expected to solve all chest-problems, it is well to be reminded that it may be useful to carefully inspect the thorax of a patient. Congenital influence often plays an important part in the production of these deformities, and the author remarks on the frequent presence of the funnel-shaped thorax in the degenerate. The association of a thorax flattened laterally and bulging forward just above the xiphoid, with congenital heart-disease is, as Marie points out, a strong argument against the view that congenital cardiac malformations generally arise from endocarditis during foetal life. In connection with the chest deformities associated with various nervous diseases (progressive myopathy, Friedreich's disease, acromegaly, etc.), Marie hazards the opinion that our friend Punch is a type of acromegaly, and supports his thesis by reference to certain historical documents obtained from his friend Dr. Toso, of Turin.

In the next three lectures, devoted to glycosuria, we find a number of interesting points discussed—the question of surgical interference in cases of diabetes, the explanation of conjugal diabetes (Marie inclines to the theory of true contagion), the pathology of pancreatic diabetes, the special characters of hemiplegia in diabetics, the causation of the angina pectoris which is not unfrequently observed in these cases, etc. The importance of remembering that diabetes is only a syndrome, like jaundice, and not a disease strictly speaking, is wisely emphasised.

The record of a case of “diabète bronzé,” a disease first described by Hanot and Chauffard in 1882, is given in Lect. vii. Only 11 cases have so far been recorded, and apparently all in France. The disease, which is usually met with in adult males who drink, begins more or less suddenly. With

the ordinary symptoms of diabetes we find distension of the abdomen, enlargement of the liver and spleen, marked weakness and emaciation, and a characteristic uniform pigmentation of the skin. It is rapidly fatal—generally within a year.

Marie inclines to the view that the hæmoglobin of the blood plays the principal part in the pathogeny of bronzed diabetes, and that it is a morbid entity and not an epiphenomenon of ordinary diabetes.

Cyclical albuminuria is discussed in Lect. ix. and x. in connection with an interesting case observed on and off for six years by the author. Various circumstances in this case, and the examination of certain conditions recorded in other cases, lead him to look upon the condition as a sympathetic affection. Antipyrin he has found useful in the treatment of certain symptoms in his case.

Cyanosis in congenital heart-disease, and the subject of congenital malformations of the heart generally, are ably treated in Lectures xi., xii., and xiii., including among other interesting questions a discussion of the mode of origin of these malformations, and of the mode of production of cyanosis, the causation of increase in the number of red corpuscles, etc.

Finally, we are given a good account of that curious condition in which neurofibromata are found scattered all over the body (except the hands and feet), either as molluscum nodules or as nævi. Certain psychical symptoms, such as depression, torpor, with marasmus, are usually associated with the disease, but beyond congenital influence we are ignorant of its causes, nature, and mode of production.

Leçons de Clinique Médicale—Psychoses et affections nerveuses.
Par GILBERT BALLEZ. Pp. 451; Figs. 52. Price 9 fr.
Paris: Octave Doin, Editeur. 1897.

This is a collection of 24 lectures, for the most part given by the author at the Hôpital Saint-Antoine during the winter session of 1895-1896, but including a few previously given at the same hospital and elsewhere in former years. They are clinical lectures in the best sense of the term, and while they must have been fascinating to listen to, they prove most interesting to read, and deal incidentally with many questions recently solved, or being solved, in the pathology

of nervous diseases. Clearness of diction and an endeavour to make the descriptions of cases as objective as possible are, the author informs us, his great aims; that he has succeeded we feel sure will be the verdict of his readers. We will consider more especially in this review the lectures dealing with mental diseases.

The first lecture deals in a general way with mental pathology and is a plea for the careful analysis of symptoms, not forgetting physical signs, in the study of mental cases; the futility, in the present state of knowledge, of taking normal psychology as a basis of classifications or researches in mental diseases is wisely emphasised; and great stress is laid on the importance of the evolution of mental troubles as an element of differentiation in diseases.

Chronic delusional insanity is the subject of Lecture ii., and while Ballet accepts Magnan's classification of these cases into two marked groups—delusional insanity of persecution with systematic evolution, and the delusional insanity of the degenerate, he is fully convinced that there are a number of intermediary types. In cases of the former group we may certainly find stigmata of degeneration; we may find certain morbid mental symptoms years before the onset of the delusional insanity; on the other hand the unmistakably degenerate may become affected with typical chronic systematised delusional insanity. The onset of the latter disease may be comparatively early in some cases.

Lect. iii. deals with a group of persecuted insane who are "self-accusing" instead of innocent victims, and in whom very often the origin of the disease appears to be some hypochondriacal preoccupation. They may not be as passively resigned as the average melancholiac, but they do not evince the anger and the hatred of the ordinary persecuted patient.

In this connection the case of a patient possessed with a tendency to indecently expose himself—an "exhibitionist" to borrow the denomination suggested by Lasègue—is recorded as a type of the self-accusing persecuted, who always present stigmata of degeneration. Closely related to these, and belonging to the large class of degenerates, are what Ballet calls the "*persécuteurs familiaux*" (Lect. v.), whose delusions are related to their family identity; such patients believe that they are sons or fathers of personages (generally distinguished) in reality quite unrelated to them, and not unfrequently exhibit few or no abnormal ideas beyond these leading delusions; *i.e.*, typical

monomaniacs according to Esquirol and other writers. A more careful examination, however, shows that, as a rule, these patients are intellectually weak or morally oblique; in some, other delusions crop up after a time; so that the leading false conception is but the revelation of a more general and deeper mental trouble.

Lect. vi. and Lect. vii. deal with the important question of puerperal psychoses, and Ballet discusses the relations between the various aspects of insanity observed in connection with the puerperal state and the physical condition of the patient. While, on the one hand, as in the case of such neuroses as chorea, hysteria, Graves's disease, pregnancy may be one of the occasional causes of a psychosis, so, on the other hand, certain psychoses may be purely toxic (perhaps on occasions uræmic). But, independently of these two groups, there are intermediary cases in which auto-intoxication intervenes and awakens a latent psychosis; so that between the two extreme views as to the causation of the puerperal insanities, truth would lie in a wise eclecticism. On p. 124 the author suggests a classification into five groups of the various mental troubles which appear during pregnancy or the puerperium—a classification taking into account their physiognomy, their evolution, their probable or certain pathogeny, and their relations with eclampsia or infection.

With the progress of our knowledge, hypochondriasis (Lect. viii.) as an entity appears to us less common than formerly; for many cases so labelled *prima facie*, are now classified as cases of melancholia, of recurring insanity, of general paralysis, etc.; nevertheless Ballet recognises that a certain number of cases remain which are not easily relegated to any definite variety of insanity, and he does not favour the tendency of certain authorities to classify them all as cases of mental degeneration.

Lect. ix. deals with an interesting case of hypermnesia with exaggerated vividness of cerebral images, and incidentally lays stress on the importance of being watchful in presence of individuals who exhibit a markedly abnormal development of certain faculties, especially that of mental representation.

In Lect. x. some very important remarks are made on the question of the long prodromal period which may be noticed in some cases of general paralysis of the insane; especially with prodromata assuming a neurasthenic form, which may extend over months and even years (v. page 173-174, case

1, three years; case 2, seven years). Comparatively recently, one of the most brilliant French novelists of the last quarter of this century was energetically treated for several months with douches, as a neurasthenic, before the obvious signs of general paralysis were observed. On p. 178, Ballet mentions a few characteristics which may help in diagnosing preparalytic neurasthenia from simple neurasthenia.

In Lect. xi. a consideration of the eye troubles in general paralysis (so important in diagnosis) is undertaken, the author drawing attention to the excellent work done by Bevan Lewis on this subject. He shares the views of the latter as regards the "paradoxical" reaction of the pupil in early general paralysis, and its sluggish dilatation or the absence of dilatation after irritating the skin of the body, etc., under the same circumstances. As regards changes in the optic papilla, Ballet's observations confirm those of Gowers; in 37 cases of general paralysis examined with the ophthalmoscope in conjunction with M. Jocsq, no particular lesion of the fundus was detected.

In connection with a case affected with neurasthenia, Graves's disease and hysteria, some interesting facts are recorded in Lect. xii. concerning the nature of the artificial sleep induced by simply closing the patient's eyes and ears (there is in the case complete anæsthesia, loss of muscular sense, loss of smell and taste). Various experiments made on this patient confirm the conclusions of Janet and others that the anæsthesia in hysterical patients is only apparent; the tactile impressions are not perceived, owing to narrowing of the field of consciousness, but they are conducted to the brain and stored, as may be shown by experiment. The remaining lectures are devoted to purely nervous diseases.

In Lect. xiv. Ballet considers and discusses an interesting case of pseudo-bulbar paralysis in a syphilitic man, aged 34 years, due probably to a specific double lesion in the right and left cerebral hemispheres (usually involving the central grey nuclei). The close resemblance to Charcot's disease (amyotrophic lateral sclerosis) in the symptoms: glosso-labial paralysis, spasmodic paralysis of the limbs with amyotrophy, absence of sensory and sphincter troubles, is worthy of notice. Spasmodic laughing and crying, ably described by Brissaud in *Rev. Scientif*, 1894, was present in Ballet's case.

Acroparesthesia is the subject of Lect. xv., three cases

of which are described, and the final lectures deal with the subjects of multiple neuritis and infectious myelitis, in which are embodied the most recent researches in the pathology of these diseases. While we do not dwell more fully here on the subject of these concluding lectures, they are certainly most attractive to all students of nervous pathology. After perusal of Dr. Ballet's volume one cannot resist feeling that one more name should be added to the already long list of French medical writers who excel in the art of clinical exposition.

Results of Thyroid Feeding in Insanity. By ROBERT CROSS, M.B., C.M., Assistant Medical Officer, Midlothian and Peebles Asylum. (Reprinted from the *Edinburgh Medical Journal*, Nov., 1897.)

The literature on thyroid feeding in the insane seems to increase *pari passu* with the growing scepticism as to its efficacy. Although the method was initiated on very loose empirical grounds, it was so well written up that many thought that in it we had a panacea for all diseases the mind was heir to. Experience has shown otherwise; and while in no hands has it had the same measure of success as in those of its originator, in most instances its results have been practically *nil*. Usually one finds much useless repetition in these communications upon thyroid treatment, and this suggested the scheme for collective investigation published in a previous number.

These reflections are suggested by a perusal of a reprint we have before us on the "Results of Thyroid Feeding in Insanity," by Dr. Robert Cross. It is a record of 20 cases of various types of insanity, in which thyroid extract was exhibited. The cases seem carefully recorded, and show evidence of painstaking enquiry. On applying these cases to Dr. Lord's scheme* we find that out of the 20 cases, one recovered, one was improved, seven were affected prejudicially, and 11 showed no improvement. These figures fully bear out the statistics already published, and the addition of these cases to the latter yields the following figures:—

Out of 78 cases of various forms of insanity 18 recovered, of which 15 were permanent; 14 improved, of which four

* "A Scheme for the Registration of the Results of Thyroid Treatment Mental Disorders," by John R. Lord, M.B., C.M., *Journal of Mental Science*, July, 1897.

were permanent; 34 did not improve; 12 were affected prejudicially.

Dr. Cross is of the opinion that this method of treatment should receive a fair trial before any patient is considered as hopelessly incurable. Unfortunately, the available experience does not justify the hope that an unfavourable prognosis is likely to be modified by the use of thyroid; on the other hand, one need not abandon hope because of comparative failure in these results.

La Confusion Mentale Primitive : Stupidité, Demence Aigue, Stupeur Primitive. Par le Dr. PH. CHASLAIN, etc. Paris : Asselin et Houzeau, 1895. 16mo, pp. 264. (Primary Mental Confusion : Stupidity, Acute Dementia, Primary Stupor, etc.)

The second title of this work shows to some degree the position in which the author would place the form of mental disease with which he deals. Before laying forth his own views, however, he deals at some length with the contributions of previous authors. Two incidental remarks will be sympathetically received by English readers. Chaslain observes that though Morel's conception of degeneration was an advance, it has done harm by the exaggeration with which it has been pressed in France. On the other hand, in Germany, a language which is not very clear, a terminology too profuse and often contradictory, and a profusion of anatomical and psychological hypotheses have contributed to confuse our subject not a little, so that it is frequently not easy to understand precisely what thought the authors wish to express. But our satisfaction is dashed by the remark that on this particular topic Italy and England but reflect the views of Germany!

Not to delay over scattered and fragmentary observations of earlier writers, it seems clear, as Dr. Chaslain points out, that Delasiauve was the first author who recognised fully the existence of this form of mental disease: "it is to him that we owe the first good description of mental confusion, to which but little has since been added. It was he who grouped under this name facts which were scanty up to his time and which we shall find scanty after his time." Delasiauve recognised that hallucinations and delusions occurred, but pointed out that confusion was the basis of all.

“The predominant fact which results from the cerebral condition is the impairment of the exercise of the intellect. In its simple form every external manifestation is not interrupted, as in the grave, but the mental operations lose their clearness, reflection its power, the will its decision, action its elasticity. The patient does not care either to converse, to amuse himself or to work; he often even feels his head weighed down as if by a leaden cap; he is conscious of his lack of initiative and complains of the inexplicable chaos of his thoughts.” The relation of occurring hallucinations to the fundamental state is the relation of dreams to sleep. Thus also isolated ideas remain when the confusion has passed away (simulating monomania), and this is but the “survival of a strong impression in the pathological dream.”

It is instructive to note how Delasiauve divides the general class—“*stupidité, confusion, chaos*”—into the following subdivisions—“Ordinary; epileptic, ecstatic: hysterical, etc.: delirium tremens: delirium saturninum: following other poisons: following serious fevers.” In other words the symptomatic insanities fall into this class. This accords with the modern view, accepting which, “several authors have endeavoured to find the origin of this affection in auto-intoxication and infection.”

The second part of the work before us begins with a description of the symptomatology of the affection. There is nothing very characteristic in the incubation, though these patients are conscious rather more often than others at this stage that their mental power is impaired. Onset is sometimes gradual, sometimes sudden. The fully developed condition is characterised by confusion, incoherence, an emotional state either variable or indifferent, a certain degree of torpor, perhaps hallucinations varying and transient, with delusions quite unsystematised and usually varying frequently. Looking at divisions of insanity purely from the clinical standpoint, we see that an acute insanity thus described is by far the most frequent form of acute insanity, being much more prevalent than the classical forms of mania and melancholia. While it is surprising that so common a type of disease should be so generally overlooked, it must be also said that there is some danger lest so wide a definition should serve to include more than one division, lest in fact “confusion” should become, in old-fashioned asylum phraseology, a “refractory ward” in which the outcasts from all other forms would find refuge.

As forms more or less distinct, Chaslain describes the delirium of collapse, profound primary mental confusion (or acute dementia), typhoid and meningitic forms, etc. He glances at various forms of confusion symptomatic of various intoxications, and other morbid states. He seems doubtful of Korsakof's polyneuritic psychosis, and leaves it for the future to decide whether the typical symptoms of that affection depend upon the association of mental disturbance with a special etiological factor or with polyneuritis. We may now perhaps regard it as decided that the former is the case. No doubt many of the most exquisite cases of confusion occur in association with alcoholic neuritis, but the same mental phenomena are to be found in chronic alcoholism without neuritis.

The physiology and pathology of confusion are considered in a chapter which is of course chiefly speculative, the fascinating but probably unsubstantiated theories of Meynert being considered at some length, and set out with great lucidity. Diagnosis is considered in another chapter. The demarcation from mania or melancholia is rarely difficult once it is admitted that mental confusion exists as a distinct form. The chief point is the differentiation of confusion from what the Germans call acute paranoia (or *Wahnsinn*). It must be said that these affections are often very hard to distinguish, and that they probably often overlap each other. The recognition of either as a common form of acute mental disease is a distinct clinical advance.

Prognosis largely depends upon association with other diseases. Etiology and pathogenesis are also chiefly concerned with its relations to other morbid states, and to the very interesting and not yet fully worked question of infection and auto-inoculation.

Dr. Chaslain considers at some length the place of mental confusion in relation to classification. He discusses Meynert's view as to its being a condition of exhaustion and also the questions of infection, etc., in their bearings upon this point of view. He clearly inclines to place confusion among what Krafft-Ebing calls the psycho-neuroses rather than among degenerations (using the latter word in the limited sense). He concludes this chapter with a definition:—

“Idiopathic primary mental confusion is an affection, commonly acute, commonly consecutive to the action of an appreciable cause, usually an infection. It is characterised by the physical phenomena of impaired nutrition, and by

mental phenomena. The essential basis of the latter, immediately resulting from the bodily state, consists of a form of intellectual weakness and disassociation, which may or may not be accompanied by delusions, by hallucinations, and by agitation, or, on the other hand, by motor inertia, with or without marked variations of the emotional state."

The last chapter deals with treatment. Naturally, in the present state of our knowledge, there is not much special to be said under this head.

The work on the whole will enhance its author's repute as a clinical observer and as a thoughtful physician. It fittingly completes the work of the earlier French writers in the delimitation of the clinical forms of acute mental disease.

La Descendance d'un Inverti. Contribution à l'hygiène de l'inversion sexuelle. Par CH. FÉRÉ. Extraite de la *Revue Générale de Clinique et de Thérapeutique (Journal des Practiciens)*. (The Descending Heredity of an Invert: A Contribution to the Hygiene of Sexual Inversion. By Ch. Féré. Reprint, etc.).

The little work before us is characterised by that completeness which all Dr. Féré's writings show. His numerous works on nervous diseases and teratology, and his beautiful experiments on the influence of poisons and mechanical injuries on the development of the embryo, have all the common note of a search for definite concrete facts, worthy of the author, who tells us that "science is that which can be measured."

This paper forms in a manner the complement of an earlier one in which Dr. Féré related the case of a gouty patient in whom attacks of morbid impulse or obsession, taking the form of sexual inversion, used to appear at times in place of the customary attacks of podagra, and used to pass away when classical gout returned. In that case the symptoms seemed to depend upon a definite poison, and might be compared to the sexual excitement, of a more normal type indeed, but still perfectly morbid in appearance and degree, which results from poison by cantharides. There seemed to be no question of corruption or any causative influence on the moral side. Now, if we believe that this condition can result from a definite poison, though we cannot precisely trace how the poison acts, we can hardly deny the possibility of its occurrence in connection with

other physical causes equally well recognised in their etiological import, and perhaps not more obscure in their precise mode of action. First among these causes heredity suggests itself, and thus Dr. Féré's podagrous patient throws a side light on the question of congenital sexual inversion.

A more direct light is cast on the subject by the case now brought forward. An epileptic patient of Dr. Féré's, who was imbecile and impulsively violent, developed tendencies towards pederasty. The epileptic was the eldest of his family. There were two other sons who were idiots, and a daughter had died of convulsions in infancy. The mother had died in childbirth. No hereditary taint was recognised on her side, and she herself had been a healthy woman. No overt trace of neurotic heredity was discoverable in the father's family, but when his son developed this aberration he became much distressed, and confessed to Dr. Féré that he himself had been always a sexual invert. He dated his troubles from his sixth year, when the sight of naked men aroused sexual feelings. Later on he practised masturbation, not mutually. Women were repugnant to him, and he only married through social compulsion. He never, at least in his adult years, gave way to his morbid instincts or allowed them to appear. He was a man of fine character and unusual ability.

The evidence which this case affords, so far as it goes, is of value. We look upon the vast volumes of confessions of wretches who have given way to sodomy, mutual masturbation, etc., and who *coram foro*, or in the doctor's confessional, protest that they are congenital inverts, as absolutely valueless. They are what the law calls infamous witnesses, and their uncorroborated evidence counts for nothing. An impudent fallacy lies under the arguments of most of these gentry, for they assume that people when once they have swallowed the doctrine of congenital aberration will make no bones of the notion that the aberrant passion is also quite uncontrollable. But there is really no reason why abnormal passion should be pled as an excuse for crime more than normal passion, and we are glad to notice that this opinion, for which we have long contended, has been accepted by one of the foremost German criminal anthropologists, Dr. Hans Kurella (see his article "Fetischismus oder Simulation" in *Archiv. f. Psych.*, Vol. xxviii.).

To return to the matter in hand, Féré argues from the

case of his epileptic that congenital sexual inversion is a degeneration and therefore transmissible, and further that such being the case it is wrong to prescribe marriage or to endeavour to bring about such a degree of cure as will result in the further transmission of this painful and shocking condition. However, the very postulate of all the arguments as to congenital inversion gives this, and the astonishing attempts at "curing" a "congenital" condition are a singular proof of the looseness with which some men think and write.

"Truly, even if acquired perversions are capable of being effectively treated by such means as apply to pathogenic conditions, still congenital perversion is quite beyond the range of medicine. It is no more possible to restore the sexual sense in a sufferer from congenital inversion than to restore colour vision to a sufferer from Daltonism."

It is hard to understand the logical position of those who gravely propose to expel nature with so very feeble a pitchfork as hypnotism, or who think that medical methods will really alter congenital instincts. Equally illogical appears to us the advice of the "puella." Sexual intercourse undertaken for experimental purposes is in itself a perversion, and is little likely to be efficacious in overcoming distaste for the opposite sex (on whatever cause depending), as anyone with the most elementary acquaintance with human nature might see.

Happily we are not likely to hear much more either of hypnotism or the "puella" for a while. Dr. Féré seems to firmly believe in the gospel of self restraint as preached, not always in too restrained a way, by Raffalovitch.

With regard to both Dr. Féré's cases above referred to, though we cannot fail to see their force, we are prepared to hazard certain interpretations which if tenable may to some degree impair their validity. The first case recalls a case recorded in this Journal some years ago in which an habitual sufferer from asthma was seized by an obsession instead of his usual asthmatic attack. His obsession was a dread of killing or an impulse to kill his mother. Was this a true perversion of filial instinct, or is it not rather to be regarded as an effort of the pained or poisoned brain to interpret itself, and analogous in a way to the horrible delusion of the melancholiac? And the second case, the subject of the paper we are especially considering, would prove more if it did not prove so much. The sexual perversion shown by the epileptic imbecile may be said to go

for nothing. Aberrations of any appetite are to be expected in such mental states of degradation, and the mode of life of such a patient would tend to foster the growth of the abnormal rather than the normal appetite. As to the father we would read his history thus:—In the indifferent period before the appearance of the true sexual instinct he was curious about male sexual matters, certainly no uncommon condition among children. He subsequently gave way to masturbation and thereby probably interfered with the due development of his sexual instincts. It does not appear to us to be beyond dispute, either that his sexual irregularities were the cause of his children's degeneracy, or that both conditions were indications of an increasing degeneration of the stock, though the latter view is no doubt consistent with the facts. Still the occasional "spontaneous" appearance (that is to say, appearance without any cause that is evident to us) of a family of idiots and imbeciles among a formerly healthy stock is not rare, and cannot be accounted for in many cases by the supposition that it is the terminal stage of a degeneration showing itself in earlier generations only in its effects upon the reproductive instincts.

Leçons Cliniques sur les Maladies Mentales et Nerveuses (Salpêtrière, 1887-1894). Par Dr. J. SÉGLAS. Recueillies et publiées, par Dr. Henry Méige. Paris: Asselin et Houzeau. 1895. Un vol. in 8vo, 835 pp. 20 fr. (Clinical Lectures on Mental and Nervous Diseases, etc., by Dr. J. Séglas. Collected and brought out by Dr. Henry Méige, etc.).

These lectures delivered at the Salpêtrière remind us of some of the best features of the work of the late Benjamin Ball. They have the same lucidity of statement, the same moderation of theory, the same strict adherence to observed facts. They are inferior to Ball's lectures only inasmuch as they do not attempt to treat insanity systematically nor to cover the whole ground.

The first two lectures treat of hallucinations. The author accepts the definition—a perception without an object—and adopts Tamburini's view that an hallucination is a functional trouble of the cortical centres. He proceeds to analyse hallucinations in accordance with the centres engaged, pointing out the correspondence of the elements of function, the varying conditions of destruction of function, and the

varying disturbances occurring in hallucination. Thus in the case of hearing we have consciousness of sound, recognition of the general nature of concrete sounds, and audition of words: similarly we have gross cortical deafness, psychical deafness, in which the sound though heard cannot be referred to the object which produces it, and finally verbal deafness; in the hallucinated we may have the hearing of vague noises, the hearing of definite sounds, the hearing of words and sentences, all existing without objects. In the same way with vision, we can have elementary visual hallucinations (fire, lightning, &c.), common visual hallucinations (devils, angels, &c.), or verbal visual hallucinations (written words: *mene tekel peres* and the like). When the associated motor centres are engaged with verbal hallucination of hearing we have the existence of psycho-motor hallucination in which the patient seems conscious of words through sensations that appear to him to be derived from movements of the muscles of phonation and articulation, &c. Dr. Séglas has entered very fully into the subject of psycho-motor hallucination in his monograph, *Troubles du langage chez les aliénés*. Hallucination may be confounded with or complicated by illusion or by delusional interpretation.

The various forms in which hallucination occurs, sometimes exquisitely distinct, are more often mixed and vague. The examination of the hallucinated often presents great difficulty, partly owing to their habitual suspicion, partly, as the author points out, because they are bad psychologists and usually analyse their own symptoms incorrectly. Therefore, in order to facilitate clinical examination, as well as for scientific purposes, it behoves the physician to be familiar with the varying forms in which hallucinations occur so as to be on the look-out for each.

The co-existence, association, and combination of hallucinations are considered and analysed in detail.

The three following lectures treat of obsessions or impulses with consciousness (*impulsions conscientes*). Under the general head of obsessions, Dr. Séglas includes impulses, the various "phobix," and the *Zwangvorstellungen* of the Germans. He combats the notion, prevalent among his countrymen, that obsessions are to be regarded as stigmata of mental degeneration. He points out, quite truly, we hold, that "the simple obsession may be met (in a very attenuated form, it is true) among the most normal persons." He also shrewdly notes that "this strange stigma of

degeneration becomes the more rare the more the degenerative state which it ought to characterise becomes marked, and that it is an endowment of so-called superior degenerates while it diminishes in frequency even to disappearance in the most marked forms of mental degeneration." Speaking generally we feel that the term degeneration is used too loosely on the Continent even by scientific writers, and that facts are not infrequently made to accommodate themselves to theories of degeneration. In the matter before us clinical experience seems to show that the tendency to impulsive acts accompanying insanity is often associated with other indications of constitutional mental diseases and is so far an indication of "degeneration," but that the milder forms of obsession, certain insanities of doubt, are not only very curable, but are actually to some degree incidental to certain callings (for instance, *Grübelucht* among printers and press correctors). Having glanced at the neurasthenic theory of obsessions, our author goes on to divide the condition into the congenital and the acquired forms, taking the eclectic clinical view of facts.

The characteristics of the paroxysm are laid down: the presence of the besetting idea, its irresistibility, retention of complete consciousness, before, during, and after the attack; concomitant distress; subsequent satisfaction. Séglas points out that complete consciousness during the crisis is not always present. He finds in the crisis something analogous to the reduplication of personality in delusion—a reduplication of personal consciousness. In opposition to Falret, he holds that hallucination and obsession may be combined. In obsession he says there is an hypertrophy of the involuntary spontaneous attention to the detriment of the voluntary and deliberate attention. Not only are the patients aboulie, but by psychical contrast the involuntary attention dwells upon matters most repellent to the saner elements of the mind.

Several lectures are given to the consideration of primary mental confusion. Dr. Séglas recognises confusion as occurring as a secondary symptom in various mental states; as a state of alienation symptomatic of various toxic and other conditions; and as a primary state. He adopts generally the views of Chaslain on this subject. In a separate lecture he discusses the diagnosis of primary confusion from general paralysis. It appears to us possible, by the way, that some of the earlier cases of recorded cure in general paralysis may have really been cases of alcoholic

poisoning (confusion, amnesia, loss of power owing to polyneuritis).

The lectures on melancholia contain a good description of melancholia sine delirio. With regard to suicide, Dr. Séglas says:—"It is, in my opinion, incorrect to insist, as is often done, on the skill, the thought, the energy, and the tenacity which melancholiacs display in their attempts at suicide. Without denying that these conditions sometimes exist, I believe we should in such cases recognise the existence of circumstances quite exceptional and peculiar, because such energy and resolution can by no means correspond with what we know of the state of the will in melancholia. Undoubtedly most melancholiacs meditate very long over their projects for suicide and invent all sorts of plans. But they put off the execution of them from day to day, and this wealth of combinations really only serves to conceal the absolute want of decision and initiative which is inherent in their very condition as melancholiacs."

Insisting upon the secondary character of the delusions in melancholia, the author makes some acute observations on the mode in which this relation is often concealed by the retrospective nature of the delusional ideas.

He points out that in melancholia it is not infrequent to find psycho-motor verbal hallucinations—the internal voice—and that this is the condition to the relative frequency of which Schüle draws attention under the name of pseudo-hallucinations.

Special attention is given to delusions of self-accusation. These Séglas has found not only in true melancholia, but in recurrent insanity, in folie circulaire, in conjunction with obsessions, in folie du doute, in senility, in alcoholism, in primary mental confusion, in acute paranoia, and in general paralysis.

The existence of acute paranoia is maintained. It is again subdivided into two forms—the simple and the hallucinatory. Transition to acute confusion is admitted.

Delusions of negation (*syndrome de Cotard*) form the subject of a lecture.

Several lectures are devoted to systematised insanity, paranoia, and especially to delusions of persecution. These chapters are lucid, picturesque, and full of clinical acumen. The description of the method of examining the persecuted, often so difficult, is excellent. The contrast between the centrifugal and divergently radiating mode of thought in

the melancholiac and the centripetal convergently radiating mode in the persecuted is well worked out. "There is a profound difference between the litany of the melancholiac and the romance of the persecuted." Magnan's fanciful division of insanity of degeneration from chronic delirium and fanciful description of the latter affection find no support from Séglas. He does not think that logic has much to do with the formation of insane delusion. "It is very difficult to admit in view of the complete identification of the patient with his insane conceptions that the latter are only the result of abstract reasoning. To bring about such ineradicable conviction they must have roots much deeper in the essential nature of the individual personality; they must attach themselves to an entirely earlier system of intellectual and emotional states." As indeed reason never persuaded any sane man of anything he did not choose to believe, how are we to imagine that it would have more power with lunatics? even though the litigious paranoiac is the most "logical" of all creatures.

Two chapters of great practical value are devoted to a description of the morphological examination of lunatics and idiots. The author does not allow anthropological hobbies to run away with him, nor does he generalise on isolated facts.

A consideration of some senile phenomena, of exalted and persecutory obsessions, of delusions of defence, of abasia and astasia, and of certain hysterical troubles, complete the work, which we can heartily recommend to our readers as a book of high ability and great clinical value.

PART III.—PSYCHOLOGICAL RETROSPECT.

AMERICAN RETROSPECT.

By C. Hubert Bond, M.D., B.Sc.

Sclerosis of the Cornu Ammonis in Epilepsy.—Dr. W. L. Worcester (*Journ. Nerv. and Ment. Disease*, April and May, 1897) details his experience as to the frequency with which this lesion is found when systematically searched for, and discusses its relation to the pathology of epilepsy. He prefaces his own observations by a summary of previous ones, dating from those of

Meynert in 1868. From these it would appear that the preponderance of authority is in favour of the view that the lesion in question is a result rather than a cause of the convulsions observed during life. Worcester's experience is based upon the appearances presented by the brains of forty-three epileptics, which he examined at the Arkansas and Danvers Asylums. In only nineteen of these was there an absence of any gross cerebral lesion. The one under consideration, namely, sclerosis of the cornu ammonis, was present on one or both sides in twenty cases, in eleven of which no other abnormality was found; while in nine it was accompanied by other and more extensive lesions which he believed had a common origin with it; and this association appeared to him to throw light on the nature of the connection between it and convulsions. Of these associated abnormalities the most frequent he found to be microgyria of an entire hemisphere. The histological characters of the diseased cornu ammonis seemed to have been remarkably uniform, and consisted of a general sclerosis, involving destruction of the neurons having their origin in the stratum pyramidale and nucleus fasciæ dentatæ. Such a condition the writer failed to note in a series of over a hundred and fifty brains of insane patients, save in those of epileptics. Exception, however, must be made to this generalisation, for the case of a patient dying subsequently to the printing of this monograph. It was that of a general paralytic in whom there was no history of epilepsy, nor had he suffered at all from convulsions; yet after death changes were noted identical with those above described. Still, the frequency of this condition in epileptics and its great rarity in those not subject to this disease, would seem to place it beyond the pale of mere coincidence. The question is whether the epilepsy causes the anatomical changes or they the epilepsy. The chief reason why the former view is held by the majority appears to be due, rather to the improbability of this convolution, from anything that is known, having any special relation to epilepsy, than to any definite theory as to the way in which epilepsy could bring about such changes in a single convolution. The writer himself would rather lean to the supposition that the condition of the cornu ammonis is the cause of the convulsions. In support of this view, he cites the fact that it is known that a cicatrix of the cortex may act as a focus of irritation, and gives references of evidence proving that irritation of the temporal lobe may excite convulsions. He does not wish it to be understood that he believes in this convolution having any special prerogative in this respect, but rather that a scar in any part of the cortex may have such an effect. Neither, also, would he assert that all epilepsies originate in any part of the cerebral cortex, for the certainty that epileptiform convulsions may be due to peripheral irritations and to toxæmic conditions is too clear.

Tactile Amnesia and Mind Blindness.—Such a case is recorded

(*Journ. Nerv. and Ment. Disease*, May, 1897) by Dr. C. W. Burr as occurring in an apparently healthy woman of sixty years of age. Her mother and one brother had died of some paralysis, and her father in a fit. The onset of the affection was sudden, for, while the patient was sitting at supper, her vision began to fail and decreased so rapidly that at the end of two days she could not distinguish objects at all. A numbness of the upper lip and slight frontal headache were also at the same time complained of, but these rapidly passed off. Spontaneous speech was normal; she understood all that was said to her and replied coherently, but she appeared to be dull and apathetic, and exhibited a certain amount of congenital stupidity. Examination of her eyes failed to elicit any cause for the poor vision complained of. As a matter of fact, however, she could see well enough to walk and avoid obstacles, though there was a slight impairment noticeable in her gait. She could also tell when an object was placed before her, but entirely failed to recognise what it was, its shape, or its colour. For instance, in answer to a question as to whether a pair of scissors, placed in her hand, were a knife, she replied, "Yes, because it feels sharp"; and again, she was entirely unable to recognise a watch placed in her hand, but immediately it was held to her ear she said "It is a watch; I hear it tick." She could button her clothes, but if handed a loose button did not know what it was. Touch, pain and temperature senses appeared to be normal in the arms, legs, and face, and she could localise sensations correctly, her failure being the ability to identify by touch even familiar objects. Taste, smell and hearing were also normal. The writer adds some remarks upon the extreme rarity of the loss of tactile perception, as manifested in this case. Her condition, he says, seems to be a memory loss, a partial amnesia. There is the possibility, however, that her trouble may be in grouping together the many sensations received from one object by touch; the making of them into one whole, rather than in the loss of old mental images with which the new are in health compared. Burr would assume that there is some definite area of the brain concerned with tactile mental images, but that its location is as yet questionable.

The Aim of Modern Education.—This is the title of a forcible and commendable article (*Appleton's Popular Science Monthly*, Aug. 1896), from the pen of Dr. Hanford Henderson, a perusal of which would well repay those engaged in the cares of education. A school, he says, is a tool, and his contention is, that the present methods adopted in the majority of them are not basal enough—they tend towards the solving of minor riddles, leaving the question of the sort of men and women we wish to produce too much untouched. The success of the teacher should be measured by "the fulness of life that he opens to the children," and gauged in this way, many, he fears, would be found wanting. The lines in

which their methods are guided are, in his opinion, not psychological; they are too cramped and narrow, and instead of appealing to and encouraging the emotional side of life, their aim is rather one of inhibition. Children, he says, are "reservoirs of feeling, bits of concrete sentiment, bundles of desires," all of which the endeavour of our schools is too often to crush out. This emotional life leads to action, and it is this self-activity that is the cornerstone to the success of the kindergarten system. Thus, instead of the thwarting and incessant cry of "Don't"! what is required is the encouragement of these emotions and desires and their guidance into the most wholesome channels, so that the activity may spend itself along the most hopeful lines. What the teacher should most dread is the child devoid of feeling and desire, the quiet little mouse whom some would hold up as a pattern; it is the troublesome child, full of action and desire, that is really the most promising. As to the teachers themselves, they should be selected not for mere knowledge alone, they must neither be bookworms, artisans, nor fragments of any sort whatever, but earnest men and women, the "very flower of the race, to whom nature and circumstances have been kind, who have caught sight of the vision of the complete life, and who would make this vision prevail."

The Phenomena of Inhibition.—In a most suggestive paper (*State Hosp. Bulletin*, April, 1897) Dr. Onuf puts forth a tentative explanation of some of the phenomena of inhibition on a histophysiological basis, including a hypothesis concerning the functions of the pyramidal tracts. He expresses his belief in Joseph Fränkel's recently stated views upon absence of the knee-jerk, in which he maintains that the simple spinal reflex arc is not alone sufficient for the production of the knee-jerk. A second arc is required, consisting in a set of vertical ascending and descending cerebellar neurons, which connect the simple transverse spinal reflex arc with the cerebellum. Also that clinical facts enforce the conclusion that the cerebellum exhibits a tonic influence upon the motor anterior horn cell, which is in response to, and maintained by means of, those pathways which convey the sensory impressions from the muscles, tendons and joints to the cerebellum. Many physiological facts can only be explained on the supposition of some inhibitory nerve apparatus; such a mechanism is ascribed to the fibres forming part of the pyramidal tracts. But, although the theory of inhibition has frequently been applied to explain, for instance, the exaggeration of the knee-jerks in lateral sclerosis, no one, Onuf believes, has attempted to give an idea what manner of connections must be postulated either for excitation of a given neuron or to facilitate inhibition of the action of such a neuron. The theory he wishes to offer is, in his own words, thus:—"For the excitation of a nerve cell, the nerve current has to pass in the direction from the cell-body or its protoplasmatic processes toward the nervous process; for the

inhibition of the cell, the current has to pass in the opposite direction, that is from the nerve process, or its collaterals, back to the cell-body. In other words, to produce excitation of a given cell, the current must enter this cell from the surface of its cell-body or of its dendrites; but in order to inhibit or moderate the action of the cell, the nerve current has to enter the cell from its nerve process or collaterals thereof." Diagrams are appended which make this easier to grasp, and he maintains that the connections there portrayed have to a large extent been proven: the objection, that might be made concerning the peripheral ramus of the T-shaped fibre of the spinal ganglion cell, could be met by the results of investigations on invertebrates, which go to show that it is actually not a nerve process, but the homologue of a protoplasmatic process. Thus the fibres, conducting the tonic innervation from the cerebellum upon the motor anterior horn cells, should so end that their arborisations cling to the *protoplasmatic processes* or to the cell-body of the motor anterior horn cells; and the terminations of the cortico-spinal pyramidal fibres come in close contact with those of a *collateral of the nerve process* of the motor anterior horn cell. Onuf would indeed say that the pyramidal fibres have chiefly an inhibitory, moderating action upon the peripheral motor neuron; at any rate the investigations of others, he says, show there probably must be at least one other motor pathway besides the pyramidal tract—thus, he would compare the function of the latter to that of a rheostat in the application of the galvanic current. In testing the knee-jerk, the peripheral motor neuron, then, is acted upon from three directions:—From (a) the peripheral sensory nerve fibre, probably through a collateral thereof; (b) the cerebellum; and (c) the cortico-spinal fibres, which have an inhibitory action and thus counteract (a) and (b). Assuming this to be true, interruption of the cortico-spinal pyramidal fibres would give rise to exaggerated knee-jerks, by loss of the inhibitory influence; while interruption of the cerebello-spinal motor tract would result in absolute loss of the reflex, because the sensory stimulus coming from the tendon will be entirely counterbalanced by the inhibitory action of the pyramidal fibres.

GERMAN RETROSPECT.

By WILLIAM W. IRELAND, M.D.

The Effect of Poisons on Nerve Cells.—Nissl gave a demonstration of the result of his researches to the meeting of German alienists, held at Heidelberg, 18th September (*Centralblatt für Nervenheilkunde*, October, 1896). He thinks it useless to discuss the question how far the nerve cell which we see under the microscope resembles that in the living organism; but he aims at having a pattern or

typical cell not altered by our treatment. For this purpose the animal should be killed in a particular manner, and the preparation always made in the same way. Then any deviation from the pattern cell must be owing to some other causes. In this way he has studied the changes in the large motor cells of the anterior horn of the spinal cord of the rabbit after administration of strychnine, veratria, arsenic, alcohol, phosphorus, and the toxin of tetanus. He had also studied the motor cells and the cells of Purkinje and those of spinal ganglia of the rabbit after giving lead, the cells in the sympathetic after poisoning by arsenic, and the cells of the cortex of the same animal after poisoning by alcohol, morphia, and lead. He had also studied the cells in the human brain in a case of poisoning by phosphorus and typhus fever. Nissl's method is to give the animal sufficient doses to maintain a toxic effect without ending life. He compares the cell thus acted upon with a healthy cell from the same locality. He has found that after the action of these poisons the effect is not uniform in all the nerve cells; some are more affected than others, while different cells are affected through different poisons. He observes that in some the nuclei are altered, becoming rounder and more homogeneous and take a deeper colour. Dr. Nissl gave twenty-four illustrations of his preparations coloured in his own methods; he also demonstrated the various kinds of nerve cells and pointed out the relation of different species of cells in the nervous centres of vertebrate animals to the different functions. He thought that with the help of a more thorough clinical and psychological analysis we might hope yet to find out the function of different cells in the nerve tissues. He observed that when there are marked alterations in the nuclei, the cells can no longer be restored to their normal functions. Hitzig observed that in tetanus there was found vacuolisation of the nerve cells on dyeing with carmine; but Nissl holds these vacuols to be an artificial product.

Micro-Photography.—Trömner gave to the South-West German Psychological Association at Karlsruhe (*Allgemeine Zeitschrift für Psychiatrie*, lii. Band, 6 Heft) a demonstration of the pathological changes in the nerve cells. He showed the great advantage of micro-photography over the subjective coloured drawings which sometimes illustrate monographs and text books. The photogram is objective, lends itself to no theories, is convenient for measuring, and can be taken in much less time than a drawing. It adapts itself readily to a series of views which show the successive changes in nerve cells under pathological conditions. Trömner showed magnified a hundredfold the appearances in normal and paralytic conditions. He also demonstrated the changes in the nerve cells of the dog after poisoning with alcohol and trional, comparing them with nerve cells in the normal state. The following changes were noted in a dog to whom 120 grammes of alcohol had been administered in two days. Some change of colour in the

spinal ganglia, but no structural change. The motor cells of the anterior horns of the cord and of the nuclei of the cranial nerves admitted of dyeing (by Nissl's method), which they resisted in the normal state. These coloured cells also showed traces of granular degeneration. There were also swelling and degeneration of the cells of Purkinje, and in the pyramids of the medulla there was degeneration of the processes of the nerve cells. In a dog poisoned by trional there were noted similar changes in the spinal ganglia in the motor cells of the anterior horn; the blue colouring brought out five granulations. The processes were less affected than the bodies of the cells. The cells of Purkinje were in part atrophied with granular degeneration, and also vacuolisation here and there.

1. It was found to be common in both these kinds of poisoning that the ganglion cells were scarcely affected in comparison with the motor cells.

2. Cells comparatively healthy were seen lying near cells deeply altered.

3. The degeneration was found in many cases to commence from the foot of the axis cylinder. In poisoning by alcohol the processes, and in trional the nerve cells were more affected.

The After Dinner Sleep.—Dr. Römer (*Centralblatt für Nervenheilkunde*, October, 1896) has observed that after a long sleep the mental activity remains for some time much less than usual. The feeling of weariness is so much the greater the deeper the sleep from which the person has emerged. When the awakened person had fallen asleep early the evening before, and had slept deeply, the inertness was not so great as with those who had fallen asleep slowly and took their rest principally in the morning hours. Römer made similar experiments on the alteration of mental activity in persons who went to sleep after dinner, which the Germans generally take about the middle of the day. He found that the persons experimented on also fell into two categories. Some felt very heavy after dinner, soon fell asleep, slept deeply, and generally awoke of themselves. The others did not feel heavy, were long of falling asleep, required to be awakened, and then showed a considerable diminution of mental activity. This was tested by learning off by heart arithmetical addition and power of selection. An hour was allowed for the siesta. From this it appears that those who generally feel heavy after dinner should not resist the inclination but take a little repose, after which they may expect to be more capable for work.

On the Problem of Unconscious Estimation of Time. By KARL GROOS (*Zeitschrift für Psychologie und Physiologie der Sinnesorgane*, Band ix., Heft 5, n. 6).—Dr. Groos remarks that it is a well known but hitherto unexplained fact that some persons can estimate with surprising exactitude a long duration of time without any external methods of limiting time. This capacity is specially exerted: (1)

In fixing the hour by day and, also, if the person accidentally awakes during the night. (2) When the person awakes to the exact minute intentionally, or at a time fixed by custom. (3) After the post-hypnotic suggestion that he should do something an hour or so after awaking. Dr. Groos quotes the following anecdote regarding the calculation of time in animals. Mr. Thomas Geering stated that a number of geese in a small town in England came regularly every fortnight after the market to pick up the corn spilt on the street. Once, the market day being postponed, they came on the regular day as usual.

In the effort to explain such facts one thinks of all the outer distinguishing marks which could work unnoticed, of the difference in the light, on the peculiar external signs of public and home life to the different times of day, and on the different days of the week. In this way one can easily understand why a cat returns from her wanderings exactly at meal times; why a dog waits for his master at the night hour at his office, or remarks when it is Sunday; why a man awakes at the usual time.

Many little outward marks of time are associated with the act, so that they may serve as unconscious measures of time. However, there are cases where such explanations are insufficient. He quotes Munsterberg, who says, "that probably in calculation of time of long duration the rhythm of our breath plays its part." Dr. Groos quotes the case of a lady who was certain to awake at a given time, if before going to sleep she repeated aloud "one, two, three, four, etc., o'clock I will sleep." If this be correct, we have here an experiment or act along with auto-suggestion, which divides the whole series of time into short rhythmic periods. Dr. Groos mentions a case which seems shut out from all those means of guessing time by outward signs. In the *Gartenlaube* of 1860 there is a story about an orang-outang which had been captured in Sumatra and was kept on board ship during a voyage to Europe. He always slept twelve hours, and his going to rest and awakening were punctual as the clock. As Sumatra lies on the equator, his going to sleep and his awakening were timed by the setting and rising of the sun; but sailing westward and southward the ship lost time. It was noticed that the ape went every day sooner to bed, and as he slept twelve hours he got up so much earlier. When the vessel reached the meridian of the Cape of Good Hope the orang went to sleep about 2 p.m., and rose at 2 o'clock in the morning. We are told that he kept this time as long as he lived (how long this was is not said), although the time differed by two hours, for by correct geographical time the ape should have gone to rest at noon, as the difference of sunset between Sumatra and the Cape of Good Hope is six hours. Thus though the inward valuation of time shown by this ape was not quite exact, still if we consider that all the outward signs of the progress of the day were altered, and the bodily activity of the animal much restrained, it seems

wonderful how nearly its going to sleep and its awakening corresponded to the times in its native forests, where the days and nights are equal.

Dr. Groos comments upon the perception which men have of traversing a certain distance with shut eyes, which he explains as an unmarked valuation of the rhythmical repetition of the paces. This, however, rests upon the perception of space, not of time.

That we have an inborn sense of the lapse of time lies in the nature of the human mind. Men could only have arrived at the belief that the rising and setting of the sun recur at regular intervals from an initial sense of the duration of time which they compared with their perceptions of the motions of the sun. This sense of time is more or less exact in different persons; it is capable of being cultivated by use, and is impaired by the habit of often consulting watches and clocks.

In opposition to Wundt's definition that expectation is a condition in which the active attention is directed not upon a present but upon a coming impression, or a number of such future impressions, Dr. Groos states his view that attention is not the concentration of the mind upon a present impression, but always and exclusively the expectation of a future impression, which will be answered with a more or less lively reaction. He distinguishes three principal forms—motor, theoretical, and æsthetic attention. In motor attention one awaits the occurrence of an instinctive or voluntary motion; in the theoretical form one awaits the coming of a certain association of ideas, and the æsthetic form is associated with the expectation of a burst of feeling which comes into the front ground of consciousness. The first form is especially related to the will; the second to the conceptions, and the third to the feelings.

It seems to me that our natural sentiment of the lapse of time is also shown by the correct anticipation of sounds which are apt to recur at regular intervals. After experiencing a succession of sounds, musical or otherwise, we learn to count upon their recurrence after a certain lapse of time.

THERAPEUTIC RETROSPECT.

By HARRINGTON SAINSBURY, M.D.

The Sedative Effect of Calomel in Large Doses.—In an interesting little book, entitled "Rough Notes on Remedies," Dr. Wm. Murray, of Newcastle, draws attention to the danger of forgetting some of our old friends amid the host of new remedies. Speaking of calomel he instances the great sedative value of this drug in large doses and the good effects which follow the administration of ten grains at the outset of delirium tremens occurring in a robust subject. Such was the practice, he tells us,

of the late Mr. Sep. Rayne. He further gives his own experience of the beneficial action of large doses of calomel in states of maniacal excitement: thus, in one case, an epileptic, suffering from acute mania, having first by a little manoeuvring got the patient sufficiently under chloroform, he administered 30 grains of calomel to him. On returning in two hours he found the patient "on the night commode, perfectly subdued, very limp and nauseated. After much profuse purging and vomiting he became as quiet as a child and fell into a sound sleep, to awake in a perfectly calm frame of mind." In another case "the patient was a man of immense strength, and naturally of a ferocious disposition;" he was in a state of acute mania, and though secured hand and foot could scarcely be approached, having bitten his attendants severely. Dr. Wm. Murray contrived to throw a towel saturated with chloroform over the patient's head and to maintain it there until the man was unconscious. He then administered a teaspoonful of calomel, which proved to be about 80 grains. The patient became "nauseated, subdued, and occupied by his own internal sensations, and ere long his fury entirely left him." The patient was then removed to an asylum and made a good recovery. Dr. Murray thinks that the "nausea peculiar to calomel" is most valuable in these cases, also that the action upon the disordered secretions generally present in these cases is most beneficial. These are the remarks of a practical man.

A Case of "Delirium Tremens Paraldehydicum," reported by Dr. G. Reinhold. *Therapeutische Monatshefte*, June, 1897.—The writer refers to V. Krafft-Ebing's original case, to which he gave the above title in a paper read at a medical meeting in Steiermark in 1887; also to two other cases discussed by Krafft-Ebing, one a neurasthenic who took daily 35 grammes of paraldehyde, the other a woman who was treated for the chloral hydrate habit by paraldehyde, and eventually substituted this drug for the former. The latter patient was found to be taking at least 40 grammes *pro die*. Jastrowitz's case recorded in the *Deutsche Med. Wochens.* for 1889 is the only other one which Dr. Reinhold has been able to collect; in this case, besides a daily dose of 6 grains of morphine, paraldehyde was taken to the extent even of 30 grammes a day.

Dr. R. proceeds to describe his own case admitted under the care of Prof. Emminghaus at Freiburg.

The patient, a gentleman, *æt.* 41, whose father had not been quite normal mentally, but who gave no other history of psychosis, had acquired the habit of taking paraldehyde for sleeplessness caused by business worries. Before admission he had latterly taken as much as 60 grammes daily.

On admission the patient showed marked physical weakness, but he was very conscious of his state and anxious to be cured: his speech was somewhat syllabic and stumbling. There was

general malnutrition with pale earthy complexion. The hands and tongue were very tremulous; pulse about 90, somewhat irregular. Sensation was intact; the patellar reflexes somewhat weakened; Romberg's symptom present to a slight degree.

Within the first four days after admission and cessation of the paraldehyde the patient developed an increasing confusion of thought up to a delirium on the 3rd and 4th days, and in addition to delusions of persecution and visual hallucinations (cats on the edge of the bed and sofa) there was marked insomnia. These symptoms arose in spite of a full alimentation with beer or wine and a nightly dose of bromide and of trional. From the 5th day on there was improvement and gradual recovery and the patient was allowed to leave on the 16th or 17th day.

Dr. Reinhold's case justifies completely Krafft-Ebing's nomenclature, and it is to be recorded that the patient had not been the victim of any other narcotic drug before succumbing to paraldehyde, so that the effects are quite uncomplicated. That paraldehyde should be able to cause a delirious state resembling alcoholic poisoning is not to be wondered at seeing the close chemical relationship of the two drugs.

Though paraldehyde is thus shown to be occasionally poisonous by its prolonged and excessive use, the very largeness of the doses required to act thus and the rare occurrence of toxic symptoms prove its comparative safety; this is further borne out by the readiness with which the poisoning is recovered from. Moreover cases of poisoning by massive doses are rarely fatal. Lewin, it seems, reports only one fatal case, and that a typhoid case who received by mistake a large quantity of paraldehyde. There is also in proof of its slight toxic action the case which Thomas Mackenzie records of 105 grammes taken at once with recovery after 34 hours of narcosis.

A Case of Successful Removal of a large Sarcoma of the Brain. Glasgow Med. Journal, April, 1897.—Dr. Eben Duncan and Mr. Ernest Maylard report this case.

The patient was operated on in November, 1893; his symptoms had commenced rather more than 3½ years previously, and they consisted of convulsive seizures on the left side followed by numb sensations and paresis; for the most part the attacks were not accompanied by loss of consciousness. There was at times a dull aching pain over the right parietal eminence. An incomplete specific history was present. Antisyphilitic treatment was pushed for six months without avail.

On operation a pulpy tumour was found, which it was found possible to enucleate with gentle pressure by the finger. The tumour weighed 3oz.; was oval in form, measuring 3in. by 2½in.; it was flattened. The microscope showed the tumour to be a sarcoma.

In March, 1897, *i.e.*, 3½ years from the time of the operation, the

patient was in good general health and able to attend to his business perfectly, but the left forearm and hand were rigid and paralysed, the left facial muscles paretic, the left foot paralysed, though the patient could walk "perfectly well." The fits, which ceased for a whole year, had then recurred, and in all during the 2½ years had been about twenty; they had not shown any tendency to become more frequent of late.

Mr. Maylard, commenting on the operation, states that in localising the tumour they were guided chiefly by the convulsive twitchings of the left arm, but that, as it proved, the site of pain and of tenderness complained of by the patient in the right parietal region would have been the better indication. He thinks that a more immediate closure of the wound without any attempt at controlling the slight hæmorrhage by plugging, would have been the wisest plan, and that this might not have been followed by the considerable protrusion of brain substance which actually occurred and to the loss of which the paralytic symptoms which obtained were due. He further thinks that the slight recurring fits were probably due to the cerebral cicatrix formed and not to any recurrence of the tumour, inasmuch as the fits had shown no tendency latterly to increase in frequency.

Epilepsy: Its Surgical Treatment; with Report of a Case. Dr. F. A. McGrew. *Medicine*, May, 1897. Detroit, Michigan.—The surgical treatment of epilepsy is very much exercising the minds of medical men at the present moment, and in particular the indications for interference. Many hold that where the disease is of long standing—we are speaking of the traumatic or reflex form of epilepsy—it is quite useless to operate, for the long habit will have so to speak polarised the brain, and the removal of the primary focus will fail to meet the requirements of the case, since a much wider area will have taken on the morbid condition. This appears certainly to be sound doctrine, and its deduction all will allow, viz., that interference should step in at the earliest possible period. Dr. McGrew, however, pleads for interference at all and every stage provided there be no other contra-indications, or, to quote him, he says: "But I am convinced by my own experience and the recorded experience of others that the element of *time* should, in by far the majority of cases, be entirely disregarded."

Another fundamental of present teaching is that before operating we should have precise localising, *i.e.*, focal symptoms. Concerning this Dr. McGrew says: "And moreover, heretical though it may be, the demonstration of focal symptoms should no longer be considered the *sine qua non* of operative measures. If present and interpreted properly they offer a reliable guide to the site of the cortical disturbance; but if not present there may be other and sufficient indications for attempting our patient's relief."

In a few words the writer may be said to urge that the time limit is not to be an absolute indication or contra-indication, nor are we

to hold our hands because the finger-posts do not point as clearly as they might.

We are here in a dilemma, for unless strict rules are laid down there is danger of careless operating and a discrediting of this branch of surgery. On the other hand a too narrow observance of the rules which should help will thwart the very purpose we have in view, viz., the relief of disease.

The case which Dr. McGrew quotes certainly bears him out. The disease, traumatic in origin, was of *thirteen* years' standing, and it was of a severe type, the convulsions being at least one daily, and often many times in the day. Then again the localising symptoms were very indistinct, not to say confusing.

The operation, undertaken at the earnest solicitation of the patient, was undertaken at the site of the original trauma, and without entering into the details of the procedure we may state that it was entirely successful, and at the time of writing 15 months had elapsed without the occurrence of any fits. The writer goes on to say that "experience has shown that a lapse of three years will scarcely justify us in claiming that the restoration of cortical stability is complete. But the interposition of even a fifteen months' oasis in the monotonous and hopeless desert of these unfortunate lives is worthy of the conscientious efforts of the surgeon."

The Nervous and Mental Phenomena following Surgical Operations. By Harold N. Moyer, M.D.—*Medicine*, Detroit, June, 1897. —In this paper Dr. Moyer makes some suggestive remarks upon the effects of operative procedures and of anæsthesia. He maintains that while in matters of technique, and in particular of asepsis, we have made immense advances, "our knowledge of shock is about the same as it was fifty years ago." Perhaps this is true as to the intimate nature of shock, but surely great advance has been made in the recognition of its etiology and of the means of avoiding it. For all that the writer is probably correct in saying that too little attention is paid to "the nervous states which predispose to shock." He asserts that "a confident feeling on the part of the patient in the operator, and the result of the operation is one of the most important factors in lessening shock and preventing the unpleasant nervous sequelæ which follow." Hence he urges the value of suggestion and the hypnotising of the patients before operation; he also thinks that the bromides may with advantage be given in a few full doses before operating, or in their stead alcoholic drinks and opiates. Dr. Moyer will be agreed with by all practical men when he insists upon the importance of the mode of giving the anæsthetic; he throws out a useful hint when he points to the absence of any data as to the relative influence of ether and chloroform in the production of shock.

He holds that the nervous phenomena which follow operations "often have their foundation in the pre-operative period." In the treatment of the neurasthenic state which supervenes on the

operation he lays great stress on the obtaining of sleep, and again he advocates the temporary use of bromides in large doses of thirty to eighty grains. The neurasthenia must be dealt with at once. Among the mental sequelæ of operations he enumerates hysteria, uncommon; mental disorders, such as delirium, mild or severe, the "delirium traumaticum"; certain forms of insanity of the confusional type; melancholia, hypochondriasis; "simple mania and sometimes paranoia."

Dr. Moyer opens out a wide field for the patient observer.

True Extension of the Spinal Cord in Tabes.—In the *Progrès Medical* of May 1st, 1897, there is a report of a communication by MM. Gilles de la Tourette and A. Chipault on a new method of spinal cord extension. These authors point out that the older method of extension by suspending the patient produces only an insignificant lengthening of the cord, whereas *flexion* of the spine, the patient being in the sitting posture with the legs extended, will lengthen the cord by as much as 1 centimetre, and almost the whole of the traction will take effect on the posterior portion of the cord at the level of origin of the first lumbar pairs of nerves. This statement is based on an experimental and anatomical study.

The authors then proceed to describe the apparatus of which they have made use in their clinical observations (for this we must refer to the *Progrès Medical*), and by means of which they maintain that the lower limbs and pelvis are so fixed that no slipping or giving can take place when the application of the extending force compels the patient to bend the spinal column. This extending force is on an average about 70 kilos (154 lbs.), but is not attained at the first sitting, indeed the patient in his forced attitude experiences in the dorso-lumbar region a stress which would speedily become painful if the force employed were too great. During the first five or six sittings the tolerance increases up to a certain point, when it becomes stationary. Another guiding sensation controlling the extent of traction is a sense of tension in the two sciatic nerves; this itself is the best proof according to the authors that there is a real extension of the cord and the great nerve trunks of the lower limbs. No danger is to be apprehended, it is stated, if the position ordered is accurately attended to; the respiration being unimpeded and the circulation free. The increase in the tension at the commencement of the sitting is to be gradual and in *like manner the relaxing at the end of the same*. The duration of the sitting will range between 8 and 12 minutes (the last is the maximum duration).

The clinical investigations were upon 47 ataxics, 39 men and 8 women. Selection of the cases is desirable, with exclusion of certain cases of tabes of very slow progress, also tabes in the third stage and cases running an acute course.

The authors maintain that of all methods of treatment of ataxia

flexion of spine is by far the best. Thus in 22 cases, nearly half, therefore, of the whole number, the patients were benefited as to all their symptoms. Most notably the pains were relieved; next in order the urinary troubles, in particular retention; thirdly, impotence was almost always relieved. Of the 22 cases, 12 showed a fairly marked inco-ordination, and of these 10 showed considerable improvement. The ocular and bulbar symptoms were but very slightly influenced.

In 16 cases benefit was experienced, but in a more limited degree and extent, the number of symptoms influenced being fewer. The remaining 10 cases received no benefit at all. This compares well with the *proportion of unsuccessful cases* by the suspension method, which in the practice of Charcot at the Salpêtrière averaged 35-40 per cent.

The authors advise a sitting every other day—if given every day the sittings must not exceed 5-8 minutes. They are of opinion that it is useless to continue the treatment for longer than 3-4 months (40-50 sittings). The treatment should then be interrupted and replaced by other therapeutic methods.

The Treatment of Perforating Ulcer by stretching of the Plantar Nerves. *Gazette des Hôpitaux*, April 8, 1897.—In this brief reference Dr. A. Chipault, of the Salpêtrière, reports the treatment, radical as he says, of perforating ulcer by nerve stretching. He considers that this form of ulceration is symptomatic, purely, of a large number of nervous affections, and that to treat it by a mere dressing on the one hand or to suppress it by amputation on the other is in either case to treat it inadequately and unphilosophically. By stretching the nerves presiding over the nutrition of the part at fault he considers that one goes to the root of the matter, and he claims for this treatment that it will cure permanently the most obstinate perforating ulcers. Of seven cases which he records, only one was a failure. Dr. Chipault insists upon a complete removal of the whole of the diseased surface at the site of the perforation, by a free curetting, etc., at the same time that the nerve stretching is performed. Only in this way can a direct union by first intention be obtained. This topical treatment by itself is insufficient to effect a cure.

A Note on the Phenomena of Mescal Intoxication.—In the *Lancet* of June 5th, 1897, Havelock Ellis, editor of the *Contemporary Science* series, contributes a very interesting experiment with mescal upon himself. Mescal buttons are the fruit of the *Anhalonium Lewinii*, *anhalonium* being a genus of South American cactaceæ. The fruit, we are told, is eaten by the "Kiowa and other Indians of New Mexico, and their use is connected with religious ceremony," and its properties have been recently investigated by Prentiss and Morgan in America and more recently by Weir Mitchell.

Mr. Ellis's experiments were made with an infusion of three

buttons (a full dose, he says), which was taken in three portions at intervals of an hour. The symptoms which followed were a passing drowsiness, succeeded by a consciousness of unusual energy, also temporary and quickly disappearing. Some heightening of the muscular irritability, a fall in the pulse-rate, and a feeling of faintness causing a desire to lie down were then experienced, but not till an hour and a half after the taking of the third portion of the dose did any visual phenomena (the most marked among the symptoms described by other observers) make their appearance. The coloured shadows seen with open eyes, and the yet brighter kaleidoscopic appearances which now became prominent are described in detail. The other senses seem to have shared, with the visual, the mesal effects, and Mr. Ellis speaks of the air as seeming to be filled with a vague perfume and of the sense of hearing being hyperæsthetic, so that he was "uncomfortably receptive to sounds of every kind;" he was inclined to think that at times he was the subject of faint auditory hallucinations. Returning to the visual phenomena, he seems to have been specially impressed by the coloured shadows seen with open eyes, in particular he refers to the violet shadows which gave a picture-like effect to the room. He says: "The violet shadows especially reminded me of Monet's paintings, and as I gazed at them it occurred to me that mesal doubtless reproduces the same conditions of visual hyperæsthesia, or rather exhaustion, which is certainly produced in the artist by prolonged visual attention."

Throughout the intellectual judgment seemed to the experimenter to be unimpaired, though the attention was certainly less controlled. Mr. Havelock Ellis remarks upon this that one realises under the influence of mesal how largely attention is a matter of co-ordination.

Motor inco-ordination seems to have been present to an unusual degree, and also a sense of thoracic oppression—these, he says, were the only unpleasant sensations. In summing up he remarks that the phenomena of mesal intoxication are mainly "a saturnalia of the specific senses and chiefly an orgy of vision."

The psychological interest which attaches to the whole class of "vision-breeding drugs" is evident, though the therapeutic possibilities of this agent may have to wait for their full development.

Pelletin as a Hypnotic. *Fortschritte der Medicin*, May 15, 1897. —From the *Anhalonium Williamsii* an alkaloid, pelletin, has been separated by Heffter, which he considers to be the active agent of the narcotism produced by several preparations in use in Mexico, and obtained from certain varieties of cactus plants. Experiments with pelletin were made on 40 patients with doses of 2.5 centigrammes ($\frac{1}{3}$ – $\frac{2}{3}$ grain), either injected beneath the skin or given by the mouth. In several cases the injection of $\frac{2}{3}$ grain beneath the skin caused deep sleep within a short period of time. In

some cases of severe pain pelletin was able to diminish the pain without, however, causing sleep, but in general there was no decided anæsthetic action. A pronounced retardation of the pulse was frequently observed after the exhibition of pelletin.

Desiderius Nagy on the other hand records failure with pelletin in ten cases of mental excitement. His dosage was from 2-4 centigrammes ($\frac{1}{8}$ - $\frac{3}{8}$ grain). In one case only did he obtain any sedative action, and in this case it is probable that suggestion may have played a part.

Langstein, working with the same remedy, obtained in one case the severest collapse from the hypodermic injection of 1 centigramme. There followed cyanosis, a thready, almost uncountable pulse and cold sweating; the energetic use of stimulants was needed to bring the patient back to safety.

Accordingly Langstein considers the remedy as by no means free from danger even when well within the dosage recommended by Jolly, who as a rule gave doses of 4 and sometimes 6 centigrammes hypodermically (*Centralblatt f. Nervenheilkunde u. Psychiatrie*, Aug. 1, 1897).

Phenacetin Poisoning. *Verhandl. des Congresses für innere Medicin*, 1896, *Krönig*.—A note of this case, which proved fatal, is given in the *Fortschritte der Medicin*, July 1, 1897. The blood state is specially referred to, and of this it is observed that the red cells were largely disintegrated and reduced in many cases to mere droplets of hæmoglobin, which either floated freely in the serum or were enclosed in leucocytes. These latter were for the most part swollen.

Analgen.—This anti-neuralgic and anti-pyretic is recently mentioned in the *Lancet* of May 1st, 1897. In the brief notice given its chemical affinity to phenacetin is referred to, and also the theory that it is less toxic than phenacetin because it contains in its molecule quinoline in place of phenol. Its anti-pyretic powers are said to be more controllable because slower or more gradual in development. Its effect upon the urine is further noted, viz., the blood-red coloration which is liable to appear; the administration of bicarbonate of soda along with the analgen is said to prevent this discoloration.

With regard to the latter statement, it depends perhaps upon the power of an alkali to change the red colour to yellow when added to the stained urine (see Helbing, *Modern Materia Medica*, p. 13); but we would ask whether it is advisable to prevent this staining, whether indeed this staining may not be an indication of saturation of the system, and to this extent a warning signal. In any case what we want to know is whether the alkali administered controls not a harmless colour change, but an undesirable effect.

Analgen does not seem to make great headway—it is referred to in Merck's report for 1892, issued in January, 1893, but there is no further reference to it in subsequent reports. Its dosage in

powder (enclosed in cachets) or in alcoholic solution is 8 grains some five or six times daily.

The Action of Chlorhydrins. *Journal of Physiology*, Vol. xxii., by C. R. Marshall and H. L. Heath.—This paper is an interesting contribution towards the solution of the problem of the relation between chemical constitution and physiological action. The problem concerns us all, for it would be an immense gain if from the chemical formula of a given compound we were able to give an approximate forecast as to its action upon the body, or rather, to be not quite so general, if, given the action of one compound, we were able to foretell the action of another compound allied to the first named—we all know what an immense significance attaches to the word *allied*, particularly at this juncture.

Drs. Marshall and Heath set themselves to determine the value of the element chlorine in a series of compounds, the chlorhydrins, which having the same molecular structure, differ only by the substitution of one or more monovalent groupings by one or more atoms of chlorine. The conclusions they come to are that—

1. "The introduction of chlorine atoms into a compound of the fatty series increases its narcotic power."

2. That "it increases also its toxic powers, unless the compound is greatly changed as regards its physical characters and especially its solubility."

3. That "the influence on muscular tissue rapidly increases with each increment of chlorine, and, as far as the chlorhydrins are concerned, this action runs parallel with their power of producing narcosis."

4. That "as a result of their influence on muscular tissue the circulation is distinctly affected. By the higher chlorinated compounds the heart is more quickly paralysed, and the blood vessels more markedly dilated than with those in the lower series."

Now, it is well known that we derive a large proportion of our anæsthetics and sedatives and hypnotics from the fatty series, and that one of the drawbacks or dangers attending the administration of these drugs is this very depressant effect upon the circulation. If now we are able to attach the toxic and depressant action to a given element in the molecular structure and can, so to speak, proportion the danger according to the quantitative proportion of this element, a great step in scientific therapeutics will have been taken. As Drs. Marshall and Heath point out, it is no new idea that chlorine is the element which specially exerts a narcotic and at the same time a depressant influence. The names of Richardson, Binz, Mayer, Ringer, and others are associated with this theory, and the numerous attempts at modification of the chlorine containing molecule, or at the elimination of the chlorine atom testify to the belief in the same theory. Hence have arisen the ammonia and the the amido-modifications of the chlorine contain-

ing soporifics, the ammonia and amido groupings being introduced to counteract the chlorine atoms. In spite, however, of the much work done, the chlorine theory cannot be said to be established, and there are some notable exceptions to the theory which are ill explained—*e.g.*, the weaker narcotic action of sodium tri-chlor butyrate as compared with sodium butyrate itself—to this exception the authors themselves allude.

The chlorhydrins with which Drs. Marshall and Heath experimented are bodies which "may be regarded as glycerine in which the hydroxyl is gradually replaced by chlorine" with formation of mono-, di-, and tri-chlorhydrin, and these certainly seem to show an increasing narcotic action with the rise in chlorine holding, but the toxic action did not quite follow this order, for the di-chlor compound was more powerful than tri-chlorhydrin. This the experimenters set down to the greater solubility of the di-chlorhydrin. To a certain extent then these experiments bear out the chlorine theory of narcotic and toxic action, but proof is still wanting, and if one might venture to criticise it would be to say that the experiments recorded are too few.

Morphine Habit of Long-standing Cured by Bromide Poisoning. Dr. Neil Macleod, *Brit. Med. Journ.*, July 10th, 1897.—Two very interesting cases of treatment, to say the least heroic, are here recorded. The first case, a lady aged 32, had been the victim of the morphine habit for seven years. The extent to which she had taken this drug is not given, but when she came under treatment with symptoms of great nervous irritability she had reduced her morphine to the, for her, very small dose of 10 minims of Majendie's solution (gr. $\frac{1}{3}$ rd) every four hours. She was ordered bromide of sodium in 30-grain doses every four hours, but must have trebled this dosage, for in two days 18 drachms had been consumed. She was removed to hospital, and for four days received hypodermically $1\frac{1}{2}$ grains of morphine per diem. On the three following days she had four 30-grain doses of sodium bromide, and on the second day from this 30 grains of chloralamide, thence on she received no drugs. For the four days following removal into hospital the patient was quite prostrate, passing urine and stools in bed and making no "intellectual, emotional, or volitional effort"; upon this ensued a period of "restlessness and intellectual and emotional confusion," with delusions, hallucinations, and inco-ordinate speech lasting another six days. On the 11th day of hospital treatment she could stand without help; on the 20th day she left hospital feeling quite well. From that time forwards she has felt no desire for morphine, and has been quite free from the habit.

The second case was that of a pilot aged 36, who for three or four years had acquired the morphine habit, and in the summer of 1896 "injected 40, 50, and 60 grains a day" (!) The bromide treatment (poisoning) was here more systematic, and at the outset

was accompanied by a moderate morphine dosage for some 13 days. The sodium bromide dose varied between 30-60 grains every three, four, or six hours, it was then continued for another five days without the morphine; from that time on no drug of any kind was given. The patient passed through a longer period of prostration, delirium, hallucinations, confusion, etc. On April 17th of this year, just over six weeks from the time of admission, he left the hospital, and 10 days later he left Shanghai feeling quite well and delivered of his habit.

Dr. Macleod claims for this treatment that it does away with the suffering of enforced abstinence; that the patient's cunning, a formidable bar to treatment, is circumvented; that it requires careful nursing, but no special institution or specially trained attendants; that no violence or excitement is likely to result.

ITALIAN RETROSPECT.

By *W. Ford Robertson, M.D.*

The Advisability and Efficacy of Chirurgical-Gynæcological Treatment in Hysteria and Insanity.—G. Angelucci and A. Pierraccini (*Rivista Sperimentale di Freniatria*, 1897, p. 290) have reported "the results of an international enquiry" into this question. The observation of some cases, in which removal of the uterus and appendages for hysteria had been followed by violent insanity, and the want of agreement which they found among the authorities who had written about the subject, led the authors to undertake their task. They appealed to alienists, surgeons and gynæcologists throughout Europe and America for exact accounts of their experiences, and received in reply a large number of valuable contributions, for which they desire publicly to express their thanks. They enquired of each person, to whom their circular was sent, if during the last ten years he had had any cases in which ablation of the uterus and its appendages had been practised, with a view to curing hysterical neuroses; whether in the event of this having been so, the uterus and appendages had been found healthy or diseased; if they had performed this operation in any case of insanity without manifestations of hysteria; and, lastly, they asked for a personal opinion as to the advisability and efficacy of such surgical interference in hysteria.

The authors give a long and interesting analysis of the reports submitted to them. They have collected accounts of 109 cases in which ablation of the internal organs of generation was undertaken for the cure of hysteria or insanity. The result was beneficial in only 17 cases. The remaining 92 were either uninfluenced or affected injuriously. Insanity afterwards developed in 44 of these women, 20 of whom had suffered from hysteria before the opera-

tion, while 24 had not. Other 23, who were insane and hysterical prior to the operation, were worse after it. Two, not previously hysterical, had become so. Finally, 23 who had been in part insane and in part hysterical, remained in the same state after operation.

The authors are inclined to considerably discount the reports of the 17 favourable results. They observe that 12 of the cases were represented as "cured of nervous disturbances," an expression which makes it probable that they were not cases of true hysteria, or at least not cases of grand hysteria. Further, nine of these 12 were operated upon because of disease of the organs. Of the remaining five cases, two were reported as having undergone "sensible amelioration," while three were spoken of as showing "apparent cure."

In addition to the reports of these 109 cases, the authors received accounts of six cases of hysteria which were favourably influenced by suggestion, through simulation of the operation, and they therefore think that there is strong reason to believe that the improvement which has been attributed to operation is in many cases rather the result of suggestion.

There were 76 alienists who sent in opinions as to advisability of surgical interference in hysteria. Of these 56 were unfavourable to such interference; 12 declined to commit themselves to an opinion; five said they were uncertain upon the question; only three were in favour of operation. Replies were also furnished by 18 surgeons and gynæcologists, of whom 13 were against operative treatment, while five were favourable to it under certain conditions.

The authors sum up their conclusions as follows:—(1) Ablation of the normal uterus or appendages is to be entirely proscribed as a means of cure in hysterical neuroses and insanity. (2) The existence of hysteria constitutes a contra-indication to surgical operation for the cure of gynæcological conditions. (3) Such operations are only indicated when there is grave disease of the organs, and they are to be undertaken independently of any considerations based upon hopes of eventually benefiting the neuropathic state of the patient. (4) In cases in which operation is rendered indispensable by pathological conditions of the generative organs, one can only hope to favourably influence the neuropathic state by the operative act through the exercise of suggestion. (5) After all known means of reputed efficacy for combatting hysteria have been tried without success, one may endeavour to influence the patient by such suggestion, by simulating the operation of laparotomy.

Condition of the Thyroid Gland in the Insane.—Amaldi (*Rivista Sperimentale di Freniatria*, 1897, p. 311) has made a histological examination of the thyroid gland in 107 cases of insanity and in 22 persons who were mentally sound. He describes a number of pathological changes which he has found to occur in a much larger

proportion of the cases in the former series than in the latter. He thinks that there is very frequently evidence of a chronic morbid process leading to atrophy of the parenchymatous portion of the gland and to alteration or arrest of its function. In 60 cases out of the 107 in the series from the insane there was evidence of a more or less grave alteration of this kind, while it was present in seven out of the 22 cases in the series from the mentally sound. He believes that this morbid condition of the thyroid gland is a factor of some importance in many cases of insanity, and therefore advises that where such thyroid insufficiency seems probable, thyroid extract be given in small continuous doses, as distinguished from the ordinary mode of administration in "thyroid feeding."

The Treatment of Epilepsy by Hot Air Baths.—The subject of the relation of epilepsy to auto-intoxication is one that has within the last few years assumed much importance owing to the results of the experimental observations which have been made upon it by numerous workers, especially in France and Italy. It has been proved that the blood, the urine, and the gastric juice in cases of idiopathic epilepsy have a greatly increased toxicity about the time of the occurrence of the fits. It has further been established that this increased toxicity is not merely a result of the convulsive seizure but a precursor of it. The general inference has been that in such cases the fits are produced by the action of the toxins upon a nervous system which is in some unknown respect congenitally abnormal and unstable. Various therapeutic measures have been advocated with the object of preventing the formation or accumulation of these toxins in the body, such as the free use of purgatives, diuretics, intestinal antiseptics and washing out of the stomach. Many important questions suggested by the experimental results already obtained are still unsolved. One of the latest contributions to the further elucidation of the subject is that of Cabitto (*Rivista sperimentale di Freniatria*, 1897, pp. 36 and 52), who has also deduced from his experimental results a method of treatment which appears to be of considerable importance. This observer has investigated the toxicity of the sweat of epileptics at various periods in relation to their fits. He caused the sweat glands to act by putting the patient into a hot-air bath. The chief conclusions to which his observations have led him are as follows: The sweat of epileptics in the prodromal period of the fits displays a very greatly increased toxic action. Thus while 100 c.c. of sweat from a healthy person injected into the circulation of a rabbit was not sufficient to kill the animal, 18.5 c.c., and often a much smaller quantity, from epileptics who were having fits, caused death preceded by convulsions. The toxic and convulsive power of the sweat increases as the time of the fit approaches, and diminishes shortly after the paroxysm. At a distant period from the occurrence of a fit the sweat of epileptics has no greater toxicity than that of healthy persons.

These observations led Cabitto to give the hot-air bath a careful and systematic trial as a therapeutic agent in epilepsy with a view to eliminating the toxins by way of the skin. The patient was generally kept in the bath for about half an hour. The experiments were varied in numerous ways, and the treatment was occasionally stopped in order to ascertain if the natural course of the disease was really being modified. Cabitto states that the results of his observations have convinced him that the hot-air bath is an excellent means of preventing and interrupting epileptic attacks. He recommends its use whenever the prodromal symptoms manifest themselves. He has observed that the beneficial result is not merely transitory, and therefore he believes that the bath has more than a mere diaphoretic action, probably exerting upon other organs, in addition to the cutaneous glands, an influence which causes them to eliminate the poison more rapidly. He does not recommend this mode of treatment as a substitute for the various measures that have been found of service for the prevention of auto-intoxication, but on the contrary urges that these should also be energetically carried out.

A Simple Method of Estimating the Toxicity of the Urine.—The fact that the urine of the insane has in general a much greater toxicity than that of the mentally sound has now been established by numerous observers. Pelligrini (*Rivista Sperimentale di Freniatria*, 1897, p. 114) has made a series of experiments, which go to show that the amount of potassium indoxyl sulphate present in the urine is a reliable index of the degree of its toxicity. An easy method of estimating the toxicity of the urine in any particular case is thus placed within reach of the clinician. Pelligrini recommends the use of Primavera's test for potassium indoxyl sulphate, which is as follows: Pour from 4 to 5 c.c. of urine into a test tube, and add slowly one-third the volume of pure concentrated sulphuric acid. Cool the mixture by dipping the end of the test tube into cold water. Add 1.5 c.c. of pure chloroform. Mix thoroughly, and then allow the chloroform to settle to the bottom of the tube. When the salt in question is present in normal amount the chloroform has a light blue tint. When a deeper blue is obtained it is present in abnormal quantity, in proportion to the depth of the colour. For exact quantitative estimation he uses Jaffé's method.

Pelligrini maintains that the increased toxicity of the urine of the insane is due for the most part to abnormal fermentation within the gastro-intestinal tract, and he urges that one of the chief aims that we should put before us in treating insanity is to correct any existing disorder of the digestive functions. When there is evidence of auto-intoxication suitable measures should be employed to secure proper disinfection of the whole gastro-intestinal tract.

ASYLUM REPORTS, 1896.

Some English County and Borough Asylums.

Berkshire.—Dr. Murdoch gives yet another reason for the rush of patients from workhouse to asylum.

Now, however, the workhouse authorities are providing more comfortable surroundings for their deserving poor, and consequently a greater trial is imposed upon the officials in retaining patients that in any way exhibit the least troublesome propensity. Of these they quickly relieve themselves by transferring them to asylums, unless special accommodation is provided which can only be done at the larger workhouses.

The Committee make the following statement in their report:—

This fact compels your Committee to again ask the serious attention of those Justices who may be called upon to sign orders for the reception of patients into the asylum to send only such cases as absolutely require asylum treatment.

It is difficult to see how the justices can exercise any discretion, since medical opinion is the guide as to necessity for asylum treatment, and even if a justice ignored such opinion, it would rest with other medical opinion whether the patient remained in any workhouse to which he might be sent.

Cheshire, Parkside.—Dr. Sheldon gives some extracts from his report on the alleged increase of insanity which was asked for by the Commissioners. He sides with those who believe with the Commissioners. He has carefully examined the figures of the contributing unions and shows clearly that as far as they are concerned increase of asylum patients has been accompanied by a decrease of lunatics in workhouses.

Cheshire, Upton.—This asylum was visited by a severe epidemic of typhoid fever. The first case was imported from the outside. Thirty-three cases in all occurred with five deaths. The line of communication could not be discovered at first, but a patient persistent enquiry at last ran the fault home to the principal well, which from repeated analyses was deemed to be above suspicion. A very remarkable chapter of accidents led to water being pumped, on each occasion of the engines being used, through a blind branch of a pipe which conveyed water to the mortuary. The branch had been disused for thirty years, but the end where it had been knocked up had become again patent. The water thus freed had worked back near the well, a long distance, and had been treated as a spring. As long as no peccant material was introduced in the circuitous journey no harm arose. But opportunity came for the poison to enter this unsuspected circulation, with the results above detailed. The discovery of such recondite mischief was a matter of much difficulty and only brought about by logical and creditable reasoning. It affords another example, if one were wanted, of the carelessness, often criminal, of leaving disused pipes *in situ*.

Cumberland and Westmoreland.—The different views expressed about thyroid extract are somewhat bewildering. The following statement in Dr. Campbell's report should be compared with Dr. Macphail's opinion as given below.

The treatment of cases of insanity by thyroid extract which has been much vaunted in some asylums, in one described as producing true modern "miracles of healing," proved a signal failure in such cases as it was tried in here, and so far as I can discover this form of treatment has not as yet left a marked impress on the general recovery-rate of those asylums in which it has been used.

The difference also in the recovery-rates between contiguous districts supplies food for reflection.

It is sad to notice that in Scotland the tendency of the recovery-rate seems steadily downwards, and this in spite of all we hear as to the extreme advantages of the separate hospital system and the absence of airing courts. The average recovery-rate in Scotch Royal and District Asylums for the five years ending 1884, 1889, and 1894 was 41 per cent., 39 per cent., 38·6 per cent., while the recovery-rate for 1895 was only 35 per cent.; at Garlands the average recovery-rate for the 24 years ending 1896 has been 45·6 per cent. calculated on the admissions.

Derby Borough.—Dr. Macphail writes :

During the year there have been several undoubted cures by means of thyroid feeding, a form of treatment now generally employed in suitable cases by most asylum physicians, and which was first introduced to the profession by researches carried out in this asylum three years ago.

Of the 18 general paralytics remaining on Dec. 31, no less than eight were females.

Statistics given show that in eight years of the 276 patients discharged recovered 36, or 13 per cent., have relapsed—a low proportion.

Dorset.—Dr. Macdonald reports the birth of two children in the asylum. In each case the unions to which the mothers belonged refused to receive the child on the ground that the settlement of the child was in the union in which it was born, which appears to us to be a pretty mean way of looking at things. In both cases the difficulty was got over.

At the end of the report Dr. Macdonald gives a full and most valuable account of the cost, working and distribution of the electric lighting system. The former works out at 1½d. per unit, equal to gas at 11d. per 1,000 feet. This extremely low figure is due no doubt to thoroughly sound arrangements in distribution and to economical use of steam.

Glamorgan.—Dr. Pringle pleads for the institution of a county fund, in commemoration of the Jubilee, for the purpose of giving aid to those recovered patients whose homes and circumstances have been impoverished by their illness. He rightly thinks that a little help then would do much to obviate the risks of relapse which may arise in a recently discharged case from such penury.

As to the causation of insanity he writes :

The counties that have the greatest proportion of pauper lunatics to the sane population are purely agricultural, and it is therefore not an unfair deduction that potent though drink and fast living are as causes of insanity, stagnation and intermarrying are still more so.

A point of treatment :

There were also many cases of mania of fierce but short duration, caused by drinking bouts which had not produced the disorders of the special senses characteristic of the former class. In all these alcoholic cases we find the Turkish bath invaluable after the first stage is over.

Hereford.—The year under report was marked by the retirement of Dr. Chapman, after 26 years of work, with a satisfactory pension and with the regrets of his committee and staff. Mr. Morrison succeeds him.

The Committee have adopted what appears to us a very sensible way of dealing with the blocking up of the asylum with harmless demented.

The Committee on October 14th, by special resolution, declared the asylum to be closed for the reception of all classes of patients whenever the number of beds in each division of the asylum, viz., 213 on the female and 187 on the male side, were fully occupied. This resolution was arrived at after mature deliberations connected with the overcrowding of the asylum, and the failure of the Committee to obtain any immediate relief by boarding out cases, together with the refusal of the various Boards of Guardians to deal with the chronic, harmless, and incurable cases, which the Committee were of opinion could be well provided for, in any case, temporarily at the various workhouses. To meet the convenience, however, of Guardians in dealing with any exceptional and urgent case a system of exchange has been permitted, which allows of a curable, acute, or dangerous case being received at the asylum on the removal of a chronic and harmless case to the union from which the acute case has been sent.

London, City of.—Dr. White writes that the success of the undertaking private patients has exceeded his most sanguine expectations. There are now 70 of these. We are pleased to note that five males and two females were transferred from the pauper to the private class. Doubtless in all County and Borough Asylums there are several patients who would pay enough to become private patients if a quid pro quo were given in the shape of separate and better accommodation.

Nottingham Borough.—This asylum is now overfull. In anticipation of this condition, the Visitors prepared plans for enlargement, which were duly approved by the Home Secretary. But the Council have refused to raise the money, and the responsibility for the trouble which is sure to arise is very properly thrown on it by the Committee and the Commissioners. The statement of the Visiting Commissioners that "the wards are clean, bright and cheerful, the dormitories well looked after," is quite in accord with the observations made by those members of the Association who

attended the General Meeting of February, 1897, when the asylum was visited by the invitation of Dr. Powell.

Stafford, Burntwood.—The Commissioners say of the new infirmary wards, “the result is so satisfactory that we hope that an extension of a similar character will be effected on the male side.”

They also write :

We saw every patient, and were struck by the quiet and general contentment which prevailed. Many of the patients spoke gratefully of the kindness they had received. The dinner to-day was meat pie and potato with bread. Three hundred and eighty of the patients dined in the general hall, where the meal was quietly and expeditiously served.

Dr. Spence, as is the Committee, is quite satisfied with the results of these wards and is glad to be able to say that the male side is to be similarly equipped. With regard to the character of the admissions Dr. Spence speaks strongly.

The admissions—297 in number (males, 107; females, 190)—have been of a very unfavourable type, and do not lend support to the idea which one hears expressed from time to time, that many people are sent to asylums who have no business there. Such is certainly not our experience; on the contrary, we find that patients are frequently not brought here until it is impossible to keep them outside.

We feel that on the whole he is right, though unquestionably there must be, from the experience of others, a certain quantity of old cases which could be cared for in a workhouse if a minimum of extra attention were accorded. If the 4s. grant had been available in the first instance for the supply of such extra attention no doubt there would not have been such a determined rush from workhouse to asylum. But now the impetus having been given there is but little hope of stopping it. Asylums have improved their nursing capacities enormously, while workhouses have lost from disuse what little nursing power they had.

Sunderland Borough.—It is unfortunate that in a brand new asylum septic diseases from bad drainage should have appeared. This has been the case, however, and with serious consequences. It might be supposed that such an occurrence was preventable.

The Committee gives £2 per annum extra wages for possession of the Association's Nursing Certificate. The Mayor presented on behalf of the Committee a silver watch to Charge Attendant James Anderson for following a patient who had got on a roof, run along a ridge and climbed a chimney stack. The patient, who was a lamplighter by calling, was brought down safely, thanks to Anderson's promptitude and bravery, which deserve recording.

Of the 33 deaths, nine were due to general paralysis, and 11 others to coarse brain disease as a principal cause, making 20 together.

Sussex, East.—The result of Dr. Saunders' enquiry into the alleged increase of insanity—as concerns this county—is “that the slight but upward tendency which the figures indicate does not, in my opinion, warrant any alarm at the increase of insanity.”

In relation to the efficacy of hereditary predisposition in causing insanity he writes :

The part which hereditary predisposition plays in the causation of lunacy is recognised and accepted, but the extent to which it is manifested, even in one generation, is, of course, not generally known. It may, perhaps, be of some interest to note the following examples which are now, or have been, in this asylum; and, in many instances, often repeated. Among these are: a mother and two daughters; father and daughter; mother, sister and two daughters; father and son; four sisters; two sisters and a niece; three brothers; uncles, aunts, nephews and nieces; and, lastly, going to the very root of the whole question, husband and wife. Showing how inherent the vice of constitution must be in the progenitor, it is not an infrequent occurrence to find the offspring becoming insane before the parent shows any sign of mental derangement; and for this reason the link is often missing which would connect father or mother, or both, with insane offspring.

Wiltshire.—In this county asylum population rapidly aggregates, the numbers on December 31 being, 1894, 719; 1895, 744; 1896, 789. Dr. Bowes can give no special explanation. He points out that in purely agricultural counties the ratio of sanity to insanity is highest, Wiltshire standing third on the list. In relation to causation he remarks :

There is a want of evidence that intemperance in drink causes much personal and direct insanity in this county, but the evils of parental intemperance are marked, and the cases arising therefrom more numerous. The possibility of intemperance in drink being a sign of insanity should not be lost sight of, and no doubt it is, in many cases, a symptom (the borderland) of such disease. There are other intemperances which in their evil effects are equally destructive, but go unnoticed until some crime may expose them or the bad habit necessitate confinement in an institution. Moral depravity, which exists to a great and unknown extent in rural districts, is an active generator of insanity, and it is a sad sight to see the lives of young people and persons in the prime of life wrecked by such excesses.

Worcestershire.—The Committee have, on Dr. Cooke's recommendation, made arrangements for further rewarding good service on the part of the staff.

We have found the system we instituted of presenting to both male and female attendants badges for good conduct to be so much appreciated that, upon Dr. Cooke's recommendation, we have further determined, firstly, to recognise meritorious conduct on the part of those attendants who may remain in the asylum for a lengthened period by presenting them on leaving with medals indicating such service and good conduct; and, secondly, to give to those attendants who have been in the service of the asylum three years, and who deserve the distinction, a certificate indicating that during that period they have undergone training in mental nursing, that their conduct has been exemplary, and that they are considered competent to discharge efficiently the duties of an attendant.

Some English Registered Hospitals.

Barnwood.—The epidemic of small-pox which fell on Gloucester, caused much inconvenience here. The attendants' leave was stopped for two months, and no patients were allowed to enter the town for shopping. The precautions taken were successful in

keeping the disease away. One curious result was that for three months not a single case was admitted, the friends of patients appearing to be frightened by the risk of residence near Gloucester.

The Committee has been able to purchase the Wilderness, which estate they have leased as a branch for several years past.

Bethlehem.—The new recreation hall has been finished, and is much commended.

The number of admissions in 1896 was considerably below the average, as in consequence of considerable repairs to some of the wards space was much restricted. Nevertheless, the recovery-rate was over 50 per cent. We note that melancholia provided twice as many admissions as mania.

Virginia Water.—Dr. Rees Phillips makes some very sensible remarks on the aspirations of nurses and attendants. Speaking of changes in the staff he says :

Many of the resignations were due to the efforts which have been made at St. Ann's Heath to educate and elevate the nursing staff. There is an increasing tendency on the part of nurses and attendants who have passed the examinations and obtained the nursing certificate of the Medico-Psychological Association to jump at once to the conclusion that they are fully trained, and quite competent to treat any mental case on their own account. Hence they join private nursing associations which seem to offer better pay, or set up in private business. In time many of them will find out their mistake. They will have given up permanent employment and pay in an institution, and the almost certain prospect of a pension, for an immediately larger but often uncertain salary, and the certainty that in time they will lose their work and their pay.

Wonford House.—Dr. Deas writes about patients' recreations :

In my last year's report I went pretty fully into the question of amusements and recreation. It is sometimes said that these may be overdone, and cheap sneers are launched against the idea that medical officers of an Institution like this are more likely to be successful in their work, and to gain more influence over their patients, if they are able to take a leading, or at any rate a prominent part in organising the recreations and the social relaxations of the community. But of the truth of this idea I am quite satisfied. It has to be remembered, too, that apart from the recent acute cases, or those commencing to convalesce, in which much care and discrimination have often to be exercised as to the kind and amount of amusement, there are a large number of patients, more or less incurable, whose home must be the asylum, and in dealing with whom the chief aim must be to make them as comfortable, and their lives as happy and bright as possible.

It is satisfactory to read that there is substantial improvement in the financial position of this Institution which does so much in affording assistance to the less affluent members of the middle classes.

Some Scottish Royal Asylums.

Edinburgh.—Dr. Clouston is able to report that the new Craig House for private patients is nearly full, and a success financially and in purpose. With regard to the question of managing the house, he says :

It is difficult to combine in a home for the mentally afflicted such freedom and liberty as we now aim at with such continual observation as is necessary in certain cases. It is the old story of human progress, order and safety v. liberty. The faults of the old systems and asylums are seen and remedied, with the result of the creation of new dangers to some extent. The weak points of the old East House were so vividly impressed on me that I fully resolved they should be effectually remedied in Craig House, with the result that other kinds of risks were run in doing so, and they had to be met by new arrangements.

The north seems to have been exposed to the recrudescence of influenza more than the warmer south of later years. Dr. Clouston's opinion confirms that which has been formed elsewhere as to the readiness with which this disease produces melancholia.

This was one of the years, very rare before 1890, but common now, in which the cases of depression of mind—*Melancholia*—equalled or outnumbered those of morbid elevation of mind—*Mania*. In the seven years 1883-89, the average number of our cases of mania was 46 more than of melancholia, and in no single year was there an equality or an excess of the depressed form of insanity. But in the seven years 1890-96, we have only had a yearly average excess of 18 cases of mania, and in three of these years, beginning with 1890, cases of melancholia actually exceeded in number those of mania. I believe the explanation of this change of type of mental disease to be the influenza which first appeared in this country in 1890, and has never left it since. Probably no such destroyer of nervous energy, and no such producer of nervous diseases, as the influenza poison has appeared in the world in recent times. To me this is the most striking medical fact of my time.

There is an interesting question connected with this production of melancholia by a definite cause. Does the melancholia replace mania? or is the extra melancholia an addition to the total amount of insanity?

Montrose.—The present is the last report to come from Dr. Howden's hand as forty of its predecessors have done. Though his report is matter-of-fact and guiltless of "retrospect," or other evidence of what he had done for the institution, yet the other entries of the Managers and Commissioners do not fail to express admiration for his brilliant and abiding work. We note that he will continue to give advice when wanted as consulting-physician.*

Some Scotch District Asylums.

Lanark, Hartwood.—Dr. Campbell Clark points out an etiological factor of particular importance and serious significance. It is:

One factor in the production of insanity, not hitherto referred to as of particular importance, has struck me as of serious significance. It is the suspicion and moral indifference which characterises the marriage relations on one side or both. Husbands speak with distrust of their wives, and even more so wives of their husbands. It is curious that many female patients when asked their name give the maiden name, and deny or ignore the married. How much this is due to sexual aversion the result of disease, and how much to moral and social causes, it is at present not possible to determine. We find out afterwards bits of information that point as much to the latter as the former—drunken indifferent husbands, wife desertion, etc.

* Since the above was written we have heard with great regret of Dr. Howden's death. This is referred to elsewhere.—ED.

The Commissioner remarks in his report :

The liberal manner in which the District Board have provided cottages for the married members of the male staff deserves the warmest recognition. There are 27 cottages on the Asylum estate, 15 of which are occupied by attendants and nine by artisan attendants. Of these 18, three are charge attendants, four are night attendants, and 11 are ordinary attendants. Of the male staff, whose sole duty is the care of the patients, 64 per cent. are married, and provided with suitable house accommodation. In providing these cottages the District Board have adopted a very efficacious means of securing the permanent services of good men, and of thereby promoting the interests and happiness of the patients.

Roxburgh.—The serious water question which has troubled Dr. Carlyle Johnstone so long is settled now in principle, and will be solved practically by the end of the year.

The death-rate has been remarkably low, and a fairly good recovery-rate has been attained. It should be borne in mind, however, that the best work accomplished in an asylum can hardly be displayed in figures. One may boast, or one may feel sincerely thankful, that the recovery-rate is high and the death-rate low, and that no suicide has darkened the last page of the history of the institution ; but the amelioration of the unhappy lot of those who are committed to his charge must always be the chief concern of the Superintendent of an asylum. He only knows how far he has failed in effecting this consummation, even when he publishes his brightest statistical statements.

Egypt.

Cairo.—We are very glad to be able to include in our notice the report of this asylum. To Dr. Warnock's great honour it is recorded that mechanical restraint has been abolished completely. What this means in an asylum where three years ago anything like enlightened treatment was utterly absent is possibly unknown by the public ; indeed, few of us experts would be able to say from practical experience. We may claim with confidence that of the many benefits which English administration has conferred on Egypt none shine out more conspicuously than the complete transformation which Dr. Warnock has brought about in a couple of years in the treatment of its lunatics. This he has done in the face of many difficulties, chief of which was the ignorance of the language of each other on the part of the doctor and the attendants.

Dr. Warnock has found time to work his medical facts for 1896 into tables, many of which follow the lines of our Association. The recovery-rate is given as 43 per cent. The death-rate was 8·8 per cent. on the total number, and 17·0 on the average population. Of 425 admissions 22 men and seven women were general paralytics. The hasheesh habit accounted for a great proportion of the admissions, and probably helped the recovery-rate.

Dr. Warnock comments on all matters, and makes suggestions and demands for improvements just in the style familiar to Medical Superintendents at home, and we can say nothing that speaks more strongly for the manner in which he has created order and routine.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held at the Rooms of the Association, 11, Chandos Street, London, W., on Wednesday, 17th November, 1897, under the presidency of Dr. T. W. McDowall. Present: The President (Dr. T. W. McDowall), Drs. Hayes Newington (Treasurer), T. Outterson Wood, G. E. Shuttleworth, J. Peke Richards, R. Percy Smith, Charles Mercier, E. B. Whitcombe, H. Rayner, Fletcher Beach, James Moody, W. J. Mickle, G. H. Savage, Conolly Norman, Crochley Clapham, John A. Wallis, D. M. Cassidy, R. Brayn, S. Rutherford Macphail, P. W. MacDonald, R. Baker, Walter Smith Kay, Alfred Turner, James Chambers, H. Stillwell, T. Seymour Tuka, Herbert Smalley, T. E. K. Stansfield, G. Stanley Elliot, Richard Legge, A. W. Boycott, W. H. B. Stoddart, Ernest W. White, Maurice Craig, James Greig Santar, J. E. M. Finch, J. F. Briscoe, W. H. Kesteven, G. E. Mould, W. J. H. Haslitt, J. J. Rawes A. S. Newington, H. J. Macevoy, G. H. Johnston, and Robert Jones (General Secretary). The visitors were Drs. F. W. Binckes, Silvatico, and F. Farris Piper.

The minutes of the previous General Meeting, of May 18, 1897, were read and confirmed.

The reply to the address of congratulation to her Majesty the Queen was read by the President, and ordered to be entered on the minutes.

“Whitehall, 19 October, 1897.

“Sir,—I have had the honour to lay before the Queen the loyal and dutiful address of the Medico-Psychological Association of Great Britain and Ireland, on the occasion of her Majesty attaining the sixtieth year of her reign, and I have to inform you that her Majesty was pleased to receive the same very graciously.

“I have the honour to be, your obedient servant,

“M. W. RIDLEY.

“R. Percy Smith, Esq.”

The following members were elected: William Henry Winder, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Cantab., Deputy Medical Officer, H.M. Convict Prison, Aylesbury. Robert Stuart, M.R.C.S.Eng., L.R.C.P.Lond., Visiting Physician, Newton Hall Asylum, Durham, 20, New Elvet, Durham. Wilfred Robert Kingdon, M.B.Durham, Resident Medical Officer, Ticehurst House, Sussex. Llewellyn Harris Liston, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., Assistant Medical Officer, The Lawn, Lincoln.

Papers were read by Dr. W. H. B. Stoddart, upon “Some Physical Signs in Melancholia”; and by Mr. J. F. Briscoe, upon “The Osseous System in the Insane.” These, with the relative discussions, have been unavoidably held over for future publication.

SOUTH-EASTERN DIVISION.

The Autumn Meeting of this Division was held at St. Andrew's Hospital, Northampton, on Wednesday, 13 October. The following members were present: Drs. McDowall (President), F. Beach, A. N. Boycott, D. G. Thomson, N. Rawes, F. H. Edwards, S. R. Philipps, D. Bower, R. Jones, J. Bayley, J. H. Bayley, G. E. Shuttleworth, J. Chambers, R. R. Alex-

ander, and T. O. Wood; and visitors, Messrs. C. Bayley, C. Dorman, and the Rev. J. Cunningham. From 11 a.m. till 1 p.m. the hospital and grounds were inspected. From 1 till 2.30 p.m. Mr. Bayley entertained the members at luncheon.

COMMITTEE.

At 2.30 p.m. a meeting of the Divisional Committee of Management was held. Present: Dr. McDowall (in the chair), Dr. Bower, Dr. Thomson, Dr. Boycott, and Mr. Bayley. The minutes of the last meeting were read and signed by the chairman.

The following report on boundaries was read: "Your hon. secretary begs to report that in accordance with your instructions he attended the meeting of the Boundaries Committee of the Association, when the appended resolution was passed. The resolution of the Annual Meeting, 1894, fixing the boundaries of the South-Western Division, is also appended. Under the circumstances, he sees no alternative for the South-Eastern Division but to accept accomplished facts, of which no information could previously be obtained.—(Signed) ERNEST W. WHITE, Hon. Secretary, South-Eastern Division."

Copy of minutes of Council Meeting, 18 May, 1897:—"The committee appointed at the last Council Meeting to settle the boundaries of the Divisions in England and Wales presented the following report: 'Your committee beg to report that, having in view the fact that the boundaries of the South-Western Division were duly authorised by the Association in July, 1894, they recommend that the following counties continue to form that Division—Hereford, Worcester, Gloucester, Oxford, Berks, Hants, Wilts, Somerset, Dorset, Devon, Cornwall, Isle of Wight, Channel Islands, Mid and South Wales; that the following counties should form the South-Eastern Division—Kent, Surrey, Sussex, Middlesex, Bucks, Herts, Northampton, Huntingdon, Bedford, Cambs, Norfolk, Suffolk, Essex, London; and that the following counties should constitute the Northern and Midland Division—Northumberland, Cumberland, Westmoreland, Durham, York, Laacs, Lincoln, Leicester and Rutland, Notts, Derby, Stafford, Shropshire, Warwick, Cheshire, North Wales.' The report of the Committee was received and adopted."

Copy of minute at Council Meeting, 31 July, 1894:—"Dr. Weatherly proposed and Dr. Morrison supported the application for the formation of a South-Western Division. This was carried unanimously. The application was made by thirty-two members, and the counties composing the Division were Cornwall, Devon, Gloucester, South Wales, Hereford, Worcester, Oxford, Berks, Dorset, Wilts, Somerset, and Hants."

Dr. THOMSON proposed and Dr. BOYCOTT seconded that the place of the next meeting be the Middlesex Asylum, Wandsworth, on the second or third Wednesday in April, 1898.—Carried.

Dr. THOMSON proposed a vote of thanks to Mr. Bayley for so cordially welcoming the members. This was carried unanimously, and Mr. BAYLEY replied.

DIVISIONAL MEETING.

At 2.45 p.m. the Divisional Meeting was held, Dr. McDowall in the chair. The minutes of the last meeting were taken as read, and signed by the chairman. A letter was read from Dr. Ernest White (Hon. Divisional Secretary) stating that after having made all the necessary arrangements with Mr. Bayley he was obliged to leave Northampton on the afternoon of the 12th, to accompany his chairman (the Lord Mayor Elect) and Visiting Committee on a tour of inspection of several Scottish asylums; but that Dr. R. Jones (Hon. General Secretary) would be present, and would kindly undertake his duties of the day.

Dr. Herbert Smalley, Medical Inspector of Prisons, Home Office, Whitehall, proposed by Mr. Brayn, Dr. E. W. White, and Dr. T. O. Wood; Mr.

Alfred Thomas Oliver White, Assistant Medical Officer (Acting Superintendent), Metropolitan Asylum, Darenth, proposed by Dr. E. W. White, Dr. F. Beach, and Dr. A. E. Patterson; and Mr. Gilbert Harry Lansdown, Acting Assistant Medical Officer, Metropolitan Asylum, Darenth, proposed by Dr. W. L. Andriæson, Dr. A. E. Patterson, and Dr. E. W. White, were elected ordinary members of the Association.

The CHAIRMAN stated that the Divisional Committee had accepted the invitation to hold the next meeting at the Middlesex County Asylum, Wandsworth, in April, 1898.

Dr. FLETCHER BEACH then read a paper on "Insanity in Children." At the express desire of Dr. Beach, this paper and the discussion thereon will not appear until the April number of the Journal. The meeting concluded with a vote of thanks to Dr. Beach for his interesting paper.

At 6.30 p.m. the members (about twenty) dined together at the Grand Hotel, Northampton.

NORTHERN AND MIDLAND DIVISION.

A meeting of this Division was held at the North Riding Asylum, Clifton, York, on 20 October, 1897, Dr. T. W. McDowall (President of the Association) in the chair. Members present: Drs. McDowall, Kershaw, Hitchcock, Legge, Macleod, Cassidy, Gramshaw, Header, Macphail, Mackenzie, Pierce, Holmes, Baker, Hingston, Percival, David Nicolson, Ray, Johnston, and Crochley Clapham (Hon. Secretary); and a visitor, Dr. Crawford Watson, of Harrogate.

Dr. Hingston kindly entertained the members with luncheon at the asylum. Committee.—It was proposed by Dr. Holmes and seconded by Dr. Hingston, "That the following members be appointed a Divisional Committee of Management, viz., Dr. McDowall (Morpeth), Dr. Ley (Prestwich), Dr. Campbell (Carlisle), Dr. Mould (Cheadle), Dr. Hitchcock (Bootham), Dr. Percival (Whittingham), Dr. Macphail (Derby), and Dr. Crochley Clapham (Hon. Secretary)"—Carried unanimously.

Proposed by Dr. HOLMES and seconded by Dr. PERCIVAL, "That the next meeting of the Division be held in May, 1898, and, if agreeable to Dr. Mould, at Cheadle."—Carried unanimously.

Proposed by Dr. CLAPHAM and seconded by Dr. MCDOWALL, "That May and October be the months chosen for holding the two Divisional Meetings in each year."—Carried unanimously.

Dr. M. B. RAY (Wadsley) read a paper on "Two Cases of Acute Insanity occurring before Puberty," and showed photographs of the patients. This, with the relative discussion, will appear in the April number of the Journal.

Dr. F. P. HEADER read a paper on "Criminal Lunatics in the Wakefield Asylum." (See page 64.)

SOUTH-WESTERN DIVISION.

The Autumn Meeting of the South-Western Division of the Medico-Psychological Association was held, by kind invitation of Dr. Fox, at Brislington House, near Bristol, on Tuesday afternoon, October 26. The members present were Drs. Aldridge, Deas, Morton, Soutar, Bower, Wilson, McCutchan, Bullen, Blatchford, Fox, Hanbury, Green, MacBryan, Lindsay, Stewart, Manning, Benham, and Macdonald (Hon. Secretary). On the motion of Dr. STEWART, seconded by Dr. DEAS, Dr. Aldridge was unanimously voted to the chair.

ELECTION OF NEW MEMBERS.

On a ballot Drs. Blackwood and Elliot, Assistant Medical Officers at the Borough Asylum, Portsmouth, were elected as members of the Association.

THE PROPOSED SPECIAL PATHOLOGIST FOR THE DISTRICT.

With reference to the proposal to appoint a special pathologist for the district, Dr. MACDONALD reported that the question had been before the Committee of Management prior to that meeting, and he had been instructed to report that, "while the committee were of opinion that the appointment of a special pathologist for the district would be desirable, they were not at present in a position to make any recommendation." Dr. Macdonald supplemented the report by explaining the feelings of the committee with reference to the proposal.

COMPULSORY PENSIONS.

Dr. MACDONALD explained that he had put this subject on the agenda paper for two reasons—first, to extract, if possible, from the meeting an expression of opinion as to whether or not there was any desire in that district to further the objects of compulsory pensions as lately forecasted in a Bill introduced into the House of Lords, but afterwards withdrawn; and secondly, to ask whether or not it was proposed to do anything in the matter, or merely to leave things to drift. Dr. Macdonald said in the first place they had to thank the present Government for having recognised and adopted the principle of compulsory pensions for public asylum officers and servants. They introduced a Bill which was practically a Government Bill, and said they were to have pensions on the scale of the Poor Law Officers Superannuation Act. Immediately a wild shout went forth about the injustice of the thing. Now, he happened to know personally that the Lord Chancellor never meant or wished that asylum officers or servants should have pensions according to the Poor Law Officers Superannuation Act. He put it in so as to give them the opportunity of moving or having moved for them the necessary amendments, and he had no doubt when it came up again this would be done. It would be within the recollection of those in public asylums that what was known as the Worcester Amendment was sent round, but since then a more liberal one was actually accepted by the Lord Chancellor, by Lord Kimberley, and Earl Spencer, and on the advice of Lord Kimberley was handed to the Earl of Northbrook, who was put up to oppose it from the County Councils Association; it was also handed to Earl Russell, who was put up by the London Asylums Committee to oppose it for that body. The result was that in the speeches recorded in *The Times* they absolutely and completely contradicted themselves. They began their speeches by saying that the Bill or amendment was unfair to asylum officers and servants, and finished up, as members would see from the pages of their Journal, by stating that it was far too liberal. (Laughter.) He had reason to believe that Earl Northbrook did not now hold the same views; while as regards Earl Russell, there was one fact they should all remember. When, some eighteen months ago, the asylum superintendents of England and Wales signed a petition in favour of compulsory pensions, the only superintendents who would not do so were the four of the London asylums. He could only say that if these four gentlemen wished to alienate themselves from their brother superintendents in their efforts to get what was nothing but justice and fairness, he thought they should do all they could to try and make it known that at any rate as a general body they were agreed. (Hear, hear.) He had it on the best authority that if they were practically unanimous, or generally agreed, on the question there was no shadow of doubt but that the principle would be acceded to, and fairness generally given to them in this matter of pensions.

The CHAIRMAN invited discussion on the subject, and suggested that their views might take the form of a resolution.

Dr. DEAS moved for the appointment of a small committee to thrash out the details and formulate a scheme which might be submitted to the next meeting of their branch, and then, when adopted, put formally before members of Parliament or some members of the Government as might be decided upon.

Dr. BENHAM said he had great pleasure in seconding. What Dr. Macdonald referred to as the Worcester Amendment was placed before his committee, and, he was glad to say, obtained its unanimous assent.

Dr. BOWER said that when this question was brought up at the Three Counties' Asylum Committee, of which he was a member, the difference of opinion which appeared among the medical superintendents was enlarged upon to such an extent that they simply allowed the Worcester communication to lie on the table, and did nothing at all one way or the other. He thought it was most important that this sub-committee should be appointed to consider the question; but he was not quite sure whether they ought not to report and do something before the next meeting of the Division, which was not till April, in order that the views of that Division, as of the Association generally, should be put into the hands of the Lord Chancellor before he revised the Bill, which he was certain to put down for the next session.

Dr. STEWART asked whether Dr. Deas would agree to tack on to his resolution something to the effect that the Division recognised the great importance, for the benefit of the public who were treated in asylums, that a clause should be introduced into the Lunacy Bill for the purpose of granting pensions compulsorily to the medical officers and others.

Dr. DEAS said he was quite willing to adopt the suggestion made by Dr. Stewart.

Dr. MACDONALD said he did not wish to throw cold water on the suggestion of Dr. Stewart, but the rules of the Association would not allow them to do what he advocated. They had no power to pass a definite resolution of any kind like the one he had outlined. They might pass a resolution to work up anything in their own district and report to themselves, but not to hand over anything to the public as coming from their Association. That must come from the general body.

The resolution of Dr. Deas as originally moved—"That a small committee be appointed to consider the question of compulsory pensions and report at the next meeting"—was then put and carried unanimously, a committee being straightway formed, on the motion of Dr. DEAS, seconded by Dr. SOUTER, consisting of Drs. Benham, Macdonald, Wade, and Deas.

THE NEXT MEETING.

The suggestion of the committee that the next meeting be held either in Oxford or Cardiff was adopted, after some discussion, the date being fixed for 19 April, 1896.

THE NURSING REGULATIONS.

The consideration of these was postponed until the next meeting.

LETTERS OF APOLOGY.

Dr. MACDONALD said he had received a letter from the President of the Association, Dr. McDowall, regretting his inability to be present. He had also one from Dr. Weatherly, who had been suddenly prevented from attending; and one from Dr. Goodall, who was to have read a paper to them, but who had to stay at home in consequence of illness among his patients.

THANKS TO DR. FOX.

This being the close of the business of the meeting, the CHAIRMAN conveyed the warm thanks of the members of the Division to Dr. Fox for the kind and hospitable way in which he had received them.

On the motion of Dr. DEAS a vote of thanks was passed to the chairman for presiding, and the proceedings terminated.

The members afterwards dined together at the Royal Hotel, and a most pleasant evening was spent.

SCOTTISH DIVISION.

A meeting of the Scottish Division was held in the Laboratory of the Scottish Asylums, 12, Bristo Place, Edinburgh, on Thursday, November 11.

Present: Dr. Urquhart (in the chair), Dr. Lewis C. Bruce, Dr. Carswell, Dr. Campbell Clark, Dr. Clouston, Dr. France, Dr. Gilmour, Dr. Hotchkis, Dr. Ireland, Dr. Carlyle Johnstone, Dr. Macpherson, Dr. Middlemaas, Dr. R. B. Mitchell, Dr. Oswald, Dr. Richard, Dr. Ford Robertson, Dr. G. M. Robertson, Dr. Turnbull (Secretary), Dr. N. P. Watt, Dr. Watson, Dr. Yellowlees; with Dr. Christie, Dr. Findlay, and Dr. Orr as guests.

ELECTION OF NEW MEMBERS.

Dr. Charles A. Bois, Hartwood, proposed by Drs. Campbell Clark, Beadla and Turnbull; and Dr. William Cotton, Bishopston, Bristol, proposed by Drs. R. B. Mitchell, Clouston, and Turnbull, were declared duly elected members of the Association.

THE NEW LABORATORY.

Dr. CLOUSTON said that the reason why they met there that afternoon was that their laboratory was now in working order. He had made the suggestion to the Secretary, thinking it would be interesting for all of them to see it thoroughly, instead of making a journey from the Physicians' Hall.

The CHAIRMAN said he felt greatly honoured in being called upon to preside on such an auspicious occasion, and thanked Dr. Clouston for the invitation.

THE ROSSLYNLEE ASYLUM.

Dr. F. B. MITCHELL showed and described the plans of an addition which is to be made to the Midlothian District Asylum at Rosslynee.

NOTES OF VISITS TO DANISH AND GERMAN INSTITUTIONS.

Dr. IRELAND read part of a paper on his visit to Danish and German institutions for the care and education of the feeble-minded. (See page 45.) The meeting agreed to postpone the discussion of this paper until the next meeting, when Dr. Carswell is expected to address the Division on the subject, with special reference to the Barony Parish of Glasgow.

THE USE OF FORMALIN.

Dr. FRANCE showed pathological specimens prepared by the formalin method. He said that formalin was a name applied to a saturated aqueous solution of formic aldehyde, H.C.H.O. It was an oxidation product of methyl alcohol obtained by passing vapours of the latter mixed with air over the heated surfaces of copper, silver, or platinum. This aqueous solution could not be concentrated beyond 40 per cent. without decomposition. Formalin had the chemical property of converting organic gelatinous and albuminous materials into inert insoluble substances. It was this property that made it so useful a fixing agent in pathological work. Orth was one of the first who, in the *Berliner Klinische Wochenschrift* on March 30, 1896, pointed out its value. He advised a 10 per cent. solution in Müller's fluid. Tores, in the *Centralblatt für Allgemeine Pathologie*, advised a 10 per cent. solution of formalin to which was added Na.Cl. 1 part, Mag. sulphat. 2 parts, and Sod. sulphat. 2 parts. He recommended that the solution should be changed once or twice during two days' immersion. For the last thirteen months he (Dr. France) had used a modification of these methods. It corresponded most nearly to that recommended by Melnikow-Raswelenkow, viz., about 16 per cent. formalin, .1 per cent. of acetate of potash, .075 of nitrate of potash. The proportion of these constituents was not of much importance, as the first specimens immersed destroyed the accurate balance. It was very inadvisable to wash the specimen. He put it in at once, and allowed it to remain from twenty-four to thirty-six hours, according to the bulk of the material that he wished to preserve. For instance, the intestines required certainly not more than twenty-four hours, while the lung and spleen required thirty-six. He had used some formalin for six months without the addition of any fresh, and it worked very well. The specimens were thereafter immersed in a spirit bath of alcohol—80 to 90 per cent.—for from twelve to twenty-four hours. They were then mounted in glycerine and water, in the proportion of 44 parts of the former in 100 of water, and to that was added 3 parts by weight of acetate of

potash, to make it diffuse more rapidly. At first the specimens would not sink, and for that reason he found it much more convenient to stitch them to glass slides as a preliminary measure. In the case of the intestines it was very important to adopt this plan before putting them in the formalin, because the formalin rendered them leathery, and they curled up into various shapes. The advantages of formalin were obvious in preserving the colour of the specimens as they were when removed from the body without distorting their appearance. Besides, they could mount the specimens very rapidly.

Dr. FORD ROBERTSON said that this new method of preserving whole organs, as described by Tores, had been largely used by several pathologists in Edinburgh during the past year. There could be no question as to its great value. Dr. France's modification appeared to be simpler than Tores' process, and this, of course, was an important advantage. The preparations on the table were certainly very beautiful. In the past many valuable pathological specimens had been practically lost owing to the want of a satisfactory method of preserving their natural appearance. This want was now supplied by formalin. The method was one that should be employed in every asylum laboratory. The question had been raised as to whether these preparations were suitable for microscopical examination. He was certain that they were. Formalin had great penetrating power, and at the same time fixed the tissues very rapidly. If a piece of an organ preserved by this method was placed for a fortnight or so in a bichromate solution, it would give a good staining reaction with hæmatoxylin and eosine. In the case of nervous tissues, if a 10 per cent. solution of formalin was used, and allowed to act for several days before the later stages of the process were carried out, a good medullated fibre stain could be obtained by either Heller's or Campbell's method without further preparation, or by Weigert's method after pieces had been placed for some time in a bichromate solution. In his experience, however, tissues hardened in formalin could not be relied upon for the satisfactory study of the chromophile elements of the nerve-cells.

MICROSCOPICAL DEMONSTRATION UPON THE MORBID CHANGES AFFECTING THE
CORTICAL NERVE-CELLS IN INSANITY.

Dr. W. F. ROBERTSON said that the series of preparations under the microscopes were intended to illustrate some of the more important of the morbid changes which could now be shown to occur in the cortical nerve-cells of the insane. He had nothing that was really new to show, unless the morbid condition seen in one of the preparations from a case of idiocy could be excepted. The brain from this case showed throughout nearly the whole of both hemispheres a narrow band running through the layer of large pyramidal cells, in which the nerve-cells were either quite undeveloped or had only reached the full-time fetal stage. The first six preparations were by the aniline black fresh method of Bevan Lewis. They showed advanced pigmentary degeneration in a case of senile insanity, vacuolation of nuclei and granular degeneration of protoplasm in a case of acute mania, "ghost-cells," or nerve-cells which remained practically unstained by the aniline dye, in a case of senile insanity, paucity of nerve-cells in a case of profound dementia following acute mania, and the imperfectly developed layer in the case of idiocy to which he had just referred. The degenerative changes recognisable by this method were no doubt merely phases of the morbid condition which, as demonstrated by some of the newer staining methods, was termed "chromatolysis." The next five preparations illustrated this condition. Alongside two examples of nerve-cells showing the chromophile elements of the protoplasm in their healthy state were placed sections from cases of early general paralysis, acute mania, and acute melancholia, showing more or less complete disintegration of these elements, as well as pallor, distortion, and displacement of the nucleus. From 5 to 10 per cent. of the nerve-cells could be shown to be thus affected in such cases. He believed

that this change was directly related to the mental disease. He was satisfied that it did not occur in the brains of patients dying in general hospitals, except, of course, in cases in which there had been severe cerebral disturbance for some time before death. He had found the new methyl violet method which he had described in the October number of *The Journal of Mental Science* of great service for the study of the cortical nerve-cells. It brought out the small nerve-cells with a clearness that he had been unable to obtain by other methods. The last five specimens were prepared by Cox's modification of Golgi's sublimate method, the mercurial deposit being further blackened by the method of Mirto. They showed alongside two normal cortical nerve-cells, the condition of varicose atrophy of the protoplasmic processes in two cases of acute mania and one of acute melancholia. Although this condition undoubtedly in many cases represented a genuine morbid change in the nerve-cell, he thought that similar appearances in such preparations were sometimes due to post-mortem change.

The CHAIRMAN said he would desire to convey the thanks of the meeting to Dr. Ford Robertson, and also to Dr. France, for the care with which they had brought these specimens before the meeting that day. That was just the sort of work which one rejoiced to see, and which was a very adequate answer to some of their critics.

REGULATIONS FOR THE EXAMINATION FOR THE NURSING CERTIFICATE.

The CHAIRMAN said that they had now to consider the proposed amended regulations for the examination for the nursing certificate. He had one suggestion upon this subject, which was to the effect that no nurse should have a certificate till she had passed through the sick ward or the hospital of the asylum, and had thereby gained practical experience in dealing with the bodily sick. He hoped that would have the general support of the Division. One of the criticisms that had been made was that they certified nurses and attendants who had never had opportunity of administering an enema or putting on a poultice, and those of them who had to see cases in private practice knew that they would be very scrupulous about engaging a nurse who was so unaccustomed to the care of the sick as to be unable to do such simple duties.

Dr. TURNBULL said that those members who were at Newcastle would no doubt have seen the report of the Educational Committee, which was referred for further consideration to the Divisions, to ascertain, if possible, what their opinion in the matter was, and for the Divisional Secretaries to report afterwards. He thought it would help their discussion if he mentioned the principal changes which had been proposed in the regulations. There was a main one, which was that instead of two years' training the nurse must now have three years' training. Formerly the number of lectures required could be attended at any time during the period of training; but now a certain number (nine) would need to be attended during each year. If he got the opinion of the members on these and other points, he would be able to report to the secretary of the Educational Committee. He suggested that they should first take up the question of length of training.

Dr. YELLOWLEES thought that if they put before a woman who was ambitious to be a good nurse that she would need to wait three years till she got her certificate, they would deter some of the best women and drive them from the service. It was for that reason that he had some doubt about a change so serious. It was the universal experience, he thought, that a nurse who intended to devote her life to asylum work either studied for about eighteen months and then went away or stayed permanently in the institution. He thought that the suggested period was too long.

The CHAIRMAN thought that the three years' course was necessary to bring them into line with the general hospital training.

Dr. YELLOWLEES said that he also had thought it was needful for that purpose, but he had found that it was not. He was pleased to find Dr. Wood, who took so much trouble in the matter, saying that it was not necessary.

Dr. CLOUSTON concurred with Dr. Yellowlees' views that they had not got to that point at which they could extend the period to three years. It was too much to expect that a nurse would spend three years in an asylum and three years in a hospital before she was fully qualified for every kind of work. As regards the lectures, he would certainly approve of their being spread over two or three years, to prevent the cramming system. He thought that every nurse should pass through the hospital before she was examined.

Dr. CARLYLE JOHNSTONE said he rose to support strongly the three years' period. He disagreed with Dr. Yellowlees that it would deter the nurses, and he thought it would have the effect of making them more competent. There were a good many nurses who took the certificate and were not a credit to the Association or the service of the public. He thought that there were other reasons for urging the three years' course as a compulsory matter instead of two. He did not think that in any ordinary sized asylum they would be able to give their nurses the real practical training that they required within two years; it would take at least three years to do it. It was quite impossible to put them through the hospital in two years, and he moved accordingly.

Dr. CAMPBELL CLARK said that he was very glad to hear Dr. Urquhart speaking about the practical part of the training. He had been, in season and out of season, speaking and writing about the unsatisfactory nature of the examination and what he would call the utter valuelessness of the certificate, and what Dr. Urquhart said just emphasised what he wanted to say—that he would find many with the certificate who had never given an enema in their lives, who did not know how to make a poultice, and who knew very little about hospital work; and if they were sent to private cases they would assuredly disappoint the doctors in charge of these patients. With reference to the three years' course his mind was perfectly open. He did not feel strongly as regards two or three years, but he felt that the training should be very much more thorough, less ornamental, more practical, and more useful, and he held that the system of examination should be altered to this extent, that there ought to be a syllabus of practical examination as well as a written examination.

In answer to Dr. Clouston, Dr. YELLOWLEES said that the British Nurses' Association were prepared to register the Medico-Psychological certified nurses with the training they had.

Dr. G. M. ROBERTSON seconded Dr. Carlyle Johnstone's motion for three years. There were a great many who came for two years, got the certificate, and left the asylum not so well trained as they might be; and as to Dr. Clouston's statement about spending six years in getting a hospital and asylum training, it was not necessary for hospital nurses to remain three years till they got a certificate: they got it after a year.

Dr. MACPHERSON asked if it was necessary that they should attend the same lectures during each of the three years.

The CHAIRMAN said that they had better keep to the motion, and he would now take the vote.

Dr. CARLYLE JOHNSTONE said if it was to be a matter of taking a hurried vote he would move the adjournment of the discussion to a future date, as to which Dr. YELLOWLEES concurred.

Dr. TURNBULL said that at the next meeting they could make arrangements to allow of this discussion. One proposal was three years against two; another was lectures every year; and a third point was the system of examining the papers—instead of having them examined by the Superintendent and Assessor, that they should be examined by two Examiners appointed for the purpose, and that the whole of the papers over the country should go to the two Examiners. If that was done, it meant probably that there would be a little more expenditure in getting it carried out, and consequently that the fee should be raised from 2s. 6d. to 5s. A minor point was that each lecture must last an hour.

On the suggestion of Dr. Yellowlees, the CHAIRMAN asked Dr. Carlyle Johnstone to add to his motion for adjournment that Dr. Turnbull should place on the agenda paper all the different points for discussion at the Glasgow meeting on the second Thursday in March.

Dr. CARLYLE JOHNSTONE said he would be very glad to do so, but they had been memorialised by the Convener of the Handbook Committee with regard to the Handbook; and if they did not take any action now it would be too late, because that committee met in a few days, and he thought something ought to be said about it.

The CHAIRMAN thought that they could hardly take up that matter without notice of motion.

Dr. CARLYLE JOHNSTONE said that they had got a notice of motion. They were invited to come there and give their views about the Handbook. Besides, as it occurred in the regulations, he thought it came up for discussion that day, and therefore they ought to have a special meeting on an early date.

The CHAIRMAN said that it had been moved by Dr. Carlyle Johnstone that they should have a special meeting for the consideration of the regulations for the examination for nursing certificates, including the Handbook. This was agreed to *nem. con.*, and the matter was remitted to Dr. Turnbull.

By the kindness of Dr. Clouston tea was then served, and the Laboratory was inspected by the members present and these visitors: Dr. Batty Tuke, Senior (President of the Royal College of Physicians), Prof. Cruikshank Brown, Prof. Simpson, Prof. Greenfield, Dr. Sibbald (Commissioner in Lunacy), Dr. Wyllie, Dr. Affleck, Dr. Berry Hart, Dr. Russell, Dr. Gibson, Dr. Philip, and Dr. Boddie. An apology for absence was received from Sir Thomas Grainger Stewart.

The CHAIRMAN then moved a vote of thanks to the Committee of the Laboratory of the Scottish Asylums for their kindness in giving them the use of the rooms, and to Dr. Clouston for his hospitality, and the meeting then terminated. The members afterwards dined in the Palace Hotel.

ADJOURNED MEETING OF SCOTTISH DIVISION.

The adjourned meeting of the Scottish Division was held in the Royal College of Physicians, Edinburgh, on 27 November, 1897. Dr. Urquhart was in the chair, and there were also present Drs. Campbell Clark, Carlyle Johnstone, Macpherson, Middlemass, G. M. Robertson, Rutherford, Watson, Watt, Yellowlees, and Turnbull (Secretary). In accordance with the remit from the Annual Meeting of the Association, the Division took into consideration the report of the Educational Committee giving the proposed amended regulations for the nursing certificate. Considerable discussion took place, and it was agreed to submit the following suggestions to the Educational Committee: 1. That the minimum period of training should be fixed at two years. 2. That Rule 3 should (consequent on the preceding suggestion) be deleted. 3. That section *a.* of Rule 5 should read—"Systematic lectures, in addition to the practical demonstrations provided for below, by the medical staff," etc. 4. That sections *b.* and *c.* of Rule 5 should be combined, and should read—"Clinical demonstrations of mental and bodily disease, and practical instruction in sick nursing and in first aid, to be given by the medical staff. At least twelve demonstrations, each of one hour's duration, must be given in each year of training, and no attendant will be admitted to examination who has not attended at least nine demonstrations in each year." 5. That the last clause of section *c.*, Rule 9, should read—"The written questions being confined to subjects included in the Handbook." 6. That in the written examination the maximum of questions to

be answered shall be six, and the minimum time allowed for answering three hours.

As time did not allow of the other proposed changes in the regulations being considered, it was agreed to adjourn the discussion to the next meeting of the Division.

BRITISH MEDICAL ASSOCIATION.

The Annual Meeting of the British Medical Association, held in Montreal, proved an unqualified success as regards the scientific work and the hospitality shown to the guests. The Psychological Section was fairly well attended. Amongst those present from various parts of Canada were Drs. Bucke, Clark, C. K. Clarke, Burgess, Hobbs, Russell, Vallée, Wilkins, Anglin, Villeneuve; the United States were represented by Drs. Cowles, Dewey, Brush, Stearns, Crothers, Rohé, Spitzka, Van Giesen; and Drs. Alexander, J. A. Campbell, J. G. B. Blandford, Hazlitt, Blair, and Urquhart represented British psychologists.

MENTAL EVOLUTION.

The sectional meetings were opened by the PRESIDENT, Dr. R. M. Bucke, of the London Asylum, Ontario, who gave an address upon "Mental Evolution in Man." He claimed that there are two processes in the evolution of mind—the perfection of faculties already in existence, and the springing into existence of faculties which had previously no existence. Dr. Bucke traced mental growth from mere excitability, through discrimination to sensation with the capacity of pleasure and of pain; later still memory, recognition of offspring; and successively thereafter reason, recognition of individuals and communication of ideas. He placed the mental plane of the higher animals as equal to a human being at two years of age. Thereafter, for about a year, that mental expansion occurred which separates man from the higher mammals. This represents to Dr. Bucke the age of the *Alalus homo*, a period of perhaps 100,000 years, during which our ancestors walked erect; but not having self-consciousness, had no true language. At the age of three, individual self-consciousness is born, and from the point of view of psychology the child becomes a human being. Thereafter Dr. Bucke considers that the colour sense, the sense of fragrance, the human moral nature, and the musical sense appear; and to these and self-consciousness he specially addressed himself. He looks upon the last-named as the basic and master human faculty, which appeared in the race several hundred thousand years ago. He takes it as proved that the colour sense was acquired not more than 30,000 years ago. Similarly, he places the era of individual colour sense at five or six, and the moral nature at fifteen, while the musical sense is delayed until adolescence, and cannot be more than 5,000 years old in the race. Dr. Bucke finds in the idea of evolution the mystery of the past, the explanation of the present, and the sure prescience of the future. His corollaries are, first, that all insane and idiots are cases of atavism; and, second, that the human mind is still in process of construction. Dr. Bucke sees new faculties springing up, and in these he includes telepathy, clairvoyance, and spiritualism. Finally, he has observed several men and women who have possessed a new faculty, a higher form of consciousness than self-consciousness, which will be the common property of a higher race of men in the course of a few more milleniums. This new race will occupy the same relation to us as we do to *Alalus homo*, and thereby justify the long agony of birth throughout the countless ages of our past.

It will be observed that Dr. Bucke's argument bristles with difficulties, and that he leaves off at the point where critical interest becomes keenest. We know Dr. Bucke as the friend and biographer of Walt Whitman, and,

more lately, as he who claims to have dethroned Shakespeare. We shall await his forthcoming book on Cosmic Consciousness, in which he is to continue the thesis now presented, before we make any detailed examination of his opinions. In the meantime we ask him to revise his observations in regard to child-life. His *obiter dicta* cannot be accepted as to the times and seasons of the evolution of the individual mental faculties, much less his guesses at racial æons. Greatly daring, he tells our mothers, who have sung lullaby to their infants and held their children spellbound by the songs of innocence, that the musical sense does not appear till the age of twenty. If Dr. Bucke would not have us believe that his atavistic theory of insanity, which seems to mean that disease of the brain is something apart from all other physical diseases, is evolution gone mad, he must hurry up with his proofs.

PELVIC DISEASE IN WOMEN AND INSANITY.

Two papers were read emphasizing the frequency of pelvic disease and the necessity for treatment of such cases. Dr. ROHÉ opened with a statement of the law in regard to surgical operations upon insane persons, and specially found fault with the very moderate objections raised in this Journal when his work and opinions were lately reviewed by us. There is no necessity to recapitulate our statements. The substance may be stated in few and reasonable words. A surgeon is liable to be called upon to justify his action in a court of law. He is happy who can offer a complete justification, and thrice happy he from whom justification is never demanded. The sum of Dr. Rohé's experience is that 60 per cent. of the women he examined had some abnormal condition of the pelvic organs, distinctly pathological and easily recognised. He claims, and rightly that the primary question is relief of local disease, that the insane woman has the same right to treatment as the sane; and adds that if such treatment is likely to benefit the mental condition it is our duty to carry it out. A summary of thirty-four recited cases shows eleven complete recoveries (mental and physical), nine improved, eleven unimproved in mental condition, and three deaths.

Dr. A. T. HOBBS, of the London Asylum, is still more emphatic. A systematic examination of all female patients, aided in nearly every case by anaesthesia, seems to be his rule, with the startling result that ninety-three out of one hundred insane women had pelvic disease. Eighty-nine were operated upon. Dr. Wigginsworth is quoted (*Regis*, 2nd ed., p. 350) as having reported that he found only 38 per cent. of normal sexual organs in female autopsies; but we refer our readers to his careful and discriminating paper in the Journal for January, 1885. Dr. Hobbs gave an account of the cases and the operative measures employed in eighty patients, and summarises the results: 37.5 per cent. mental recoveries, 22.5 per cent. improved, 35 per cent. unchanged, 5 per cent. of deaths.

AFTER EFFECTS OF SURGICAL PROCEDURE.

Dr. RUSSELL, of the Hamilton Asylum, Ontario, followed with a paper on the after effects of surgical procedure on the generative organs of females for the relief of insanity. He protested against wholesale mutilation and exaggerated claims made for operative interference, and went on to show that the ratios of insanity between men and women are nearly equal, that the analogous gland in man is not the subject of persistent attack, as it might have been if naturally retained in the abdominal cavity. Dr. Russell gave three cases which had terminated unfavourably after surgical operation on the genital organs; and a collection of opinions by alienist physicians unfavourable to such operative interference. One may be quoted, viz., the reply of Dr. Putnam, the woman physician of Poughkeepsie State Hospital. She says that out of 3,646 female admissions only forty-two cases were due to pelvic disease, and that no improvement resulted from four operations.

REFLEXES IN PSYCHIATRY.

Dr. DANIEL CLARK, of the Toronto Asylum, read an important paper on

this subject. In relation to diseases of the female pelvic organs, minor abnormalities are magnified into important factors in producing insanity, and it would be well for the present generation if there were less professional officiousness exercised in the direction indicated. While 40 per cent. of the admissions to the Toronto Asylum are certified as having become insane owing to these diseases, he only found 3½ per cent. really affected. Moreover, the knife created an artificial menopause in young or middle life, and a number of cases of insanity in his experience had resulted. Dr. Clark quoted Dr. Bremer, of St. Louis, with approval, viz., that gynecological treatment, unless imperatively demanded, is a crime.

In the discussion of this subject, as might have been expected, the members of the section showed but little sympathy with the practice of Drs. Rohé and Hobbs. Dr. ALEXANDER adduced strong evidence against the statements in favour of the high percentage of disease when he said that out of the thousands of post-mortem examinations at which he had assisted at Hanwell but very few showed evidence of pelvic disease. While we are bound to interrogate the facts of the physical condition of our patients, male and female, we have no such duty imposed upon us as Dr. Hobbs indicates. His administration of anaesthetics and genital examination of every case admitted are extreme measures which will surely find no support in this country. And we shall require additional testimony before we accept his statement that ninety three insane women out of one hundred show pelvic abnormalities sufficient to justify his routine treatment. It appears to us to be a record of misguided enthusiasm, and our rule should be to permit of surgical interference with the genital organs of insane women only when the same indications are present which demand operation in the sane.

HEREDITY AND INSANITY.

Dr. H. P. STEARNS, of the Hartford Retreat, read a paper entitled "Heredity a Factor in the Etiology of Insanity." He treated the subject in view of the recent works of Weissmann, and produced a closely reasoned and learned argument, which does not lend itself to condensation. We must refer our readers to the pages of *The British Medical Journal* for the full text, which will amply repay a careful study.

ACUTE MELANCHOLIA.

Dr. BRUSH, of the Sheppard Asylum, Baltimore, gave an analysis of one hundred cases of acute melancholia, which is a mine of information on this subject, and shows how carefully the patients have been considered and treated under his care.

PHYSICAL AND MENTAL DISEASE.

Dr. HASLETT, of Halliford House Asylum, read a paper upon the influence of physical upon mental disease, containing a summary of authorities. He concludes that debilitating and wasting diseases never produce any mental improvement, but often the reverse; that sudden injuries, without loss of blood, are frequently of benefit; that sudden painful diseases are most likely to result in improvement; that the stuporose and secondary stages of mental disease are most readily influenced for good, but the convulsive neuroses are incapable of amelioration in this way. Dr. Haslett states that unwounded afferent impulses produce the influence owing to abnormal peripheral irritation.

INEBRIETY.

Dr. CROTHERS, of Hartford, discoursed upon inebriety, supporting the thesis that inebriety is insanity, and curable in the same way. Perhaps his most interesting point was the exposition of cases where there was a latent explosive tendency.

INSANITY AND THE STATE.

Dr. RUSSELL, of the Hamilton Asylum, read a paper on the relation of insanity to the State. The vast field which he surveyed does not permit of our giving more than an indication of the remedies suggested. Dr. Russell wisely says that neither legislation nor radical surgery will prove a

panacea. He looks to the operation of natural laws to elevate the human race, and to education as a mental discipline to prepare citizens for their duties. We do not agree with him in his projects for the nationalisation of land and the limitation of charitable aid. When Dr. Russell suggests that the money spent in works of philanthropy should be diverted to increasing the earning power of the poor, he should follow up his suggestion with practical indications of how it is to be carried out. Meanwhile, we shall not withhold a helping hand to those in need, pending the millennium.

DEGENERATION OF NERVE-CELLS.

Professor VAN GIESEN concluded the work of the last day with a most valuable and interesting address on parenchymatous degeneration of the paraneural system in locomotor ataxia. It was unfortunate that the most important communication of the meeting should have been relegated to the fog end of the scientific business. Professor Van Giesen's position as Director of the Asylums' Laboratory in New York should have commanded a better hearing. His work relative to the degeneration of nerve-cells in acute intoxication and substroke will shortly be placed before our readers in detail. Meantime, we note that at Montreal he traced the analogy between stroma and parenchyma in organs of the body. He showed how the cells may be regarded as working units, their expression of function varying with their health. He showed how, under suitable hardening reagents, an intercellular structure could be demonstrated; and how this structure was interfered with by poisons, especially alcohol. The rate of this cytolysis, as he called it, depended on (1) the intensity and (2) duration of poison. This was the probable cause of temporary improvement in locomotor ataxia. Finally, he showed that similar changes took place in mental disorders.

THE SUB-CONSCIOUS MIND.

Dr. CLARK BELL, of New York, prepared a paper on the sub-conscious mind, sub-liminal consciousness, and we have been favoured with proof-sheets of his work. After giving dictionary definitions of consciousness, Dr. Clark Bell goes on to enquire: Is there a consciousness beneath the threshold of our ordinary knowledge of our own thoughts and actions outside of and independent of the former? Have we an inner consciousness that acts independent of the outer, and usual, perception? Is it a storehouse of the memory, of acts, thoughts, and volition peculiar to itself, and not directly related to what has been hitherto believed to be the normal consciousness of man? Is it really beneath the threshold of our thoughts regarding ourselves and our action? In answer to a circular letter addressed to leading psychologists a large number of replies were received, from which it would appear that diversity of opinion exists in reference to the definition and existence of sub-liminal consciousness. For instance, Professor Sudduth concludes that it is a state of the natural or subjective mind, and as much to be clearly differentiated from objective and super-conscious mind. Professor James objects that the term is vague and has narrowing implications. Adopting the metaphor of the field of consciousness with its focus strongly attended to, and its margin dimly recognised, he would rather speak of marginal consciousness. Professor Eskridge considers that sub-liminal consciousness is a pompous definition (*sic*) for subjective consciousness. Professor Catell does not think it better than the older term sub-consciousness. We are disposed to agree with Professor James, for it seems to us that the use of *sub* or *supra* in this relation is misleading, and unsupported by the facts of physiological psychology.

ACTIVE TREATMENT OF GENERAL PARALYSIS.

Dr. GODDING, of the Washington Asylum, submitted a paper on the treatment of general paralysis, from which he had secured arrest of the active symptoms. The main feature of this system is the employment of the cold wet-pack with cold applications to the head. The simplicity and efficacy of this mode of treatment should encourage experiments on this side

of the Atlantic, and we refer our readers to *The British Medical Journal* for details.

THE NOSE AND SEXUAL APPARATUS.

Dr. J. N. MACKENZIE, of Baltimore, read a paper in the Laryngology Section on the physiological and pathological relations between the nose and the sexual apparatus of man. He first gave the reasons which led him to conclude that there is an intimate physiological relationship between these organs, specially insisting on the occasional phenomena connected with menstruation, pregnancy, etc. Dr. Mackenzie alluded to the facts of vicarious nasal menstruation, sympathetic irritation of the nasal erectile tissues during the sexual act, and the probability of congestion of the nasal passages owing to abuse of the sexual functions. In the discussion following cases of masturbation cured by the removal of adenoids were referred to. Unfortunately no psychiatrist seemed to have been present to confirm the relationship from his point of view. It is undoubted that abnormal conditions of the nose and hallucination of the sense of smell constantly occur in cases of insanity connected with excessive masturbation.

INTERNATIONAL MEDICAL CONGRESS AT MOSCOW.

SECTION VII.—NERVOUS AND MENTAL MALADIES.

Whether an International Congress brings out the best work of the best men may be questioned, but it is beyond question that in a city so full of interest as Moscow foreign visitors are apt to sacrifice sections to sight-seeing.

Section VII. was one of the busiest and best attended of all the fifteen sections into which the Congress was divided, and not a few communications were left unread. Many nationalities were found at its meetings, and Honorary Presidents of Section were courteously appointed from each, Dr. Yellowlees being chosen to represent Great Britain. As the section included both nervous and mental maladies the field was very wide and the subjects very varied and very mixed: Obsessions and Fixed Ideas, Juvenile Dementia, Pathology of the Nerve-cell, Hypnotism and its Legal Relations, *Tabes Dorsalis*, Polyneuritis, Inherited Neuroses and Degeneration, Transitory Alcoholic Mania, Treatment by Alternations of Temperature, etc. Dr. Shuttleworth, of London, Dr. Sutherland, of Edinburgh, and Dr. Robertson, of Glasgow were the only readers of papers from this country.

The cordiality with which their foreign *confrères* were welcomed and feté by the neurologists and alienists of Moscow can never be forgotten by them, and it was fitly crowned by a poetic and beautiful compliment at the close of the Congress, when representative foreigners from various lands were personally requested by President Korsakov to plant a tree in the grounds of the Psychiatric Clinique in order to form a group which should be known in after years as "The Grove of the Congress."

The Asylum of Moscow and this Clinique naturally attracted the interest of the strangers. The former—called *Hôpital de Préobragenskoïé*—has been enlarged and modernised in recent years. Although within the city limits, it is surrounded by ample grounds. Its wards are not up to our ideas of comfort, but non-restraint is practised as far as possible, and in part of the building "open doors" are the rule. The medical and scientific work receives great attention, and, indeed, could not fail to do so, for the Medical Superintendent, Dr. Constantinowsky, has four resident Assistant Medical Officers and four others non-resident to aid him in the care and treatment of 400 patients. The proportion of attendants is very large—at least 1 to 4—although many of the lunatics are chronic cases. The explanation given was that quantity had to make up for quality. Probably the defective

education so universal among the lower classes in Russia makes our methods of training nurses impossible.

The clinics and special laboratories attached to the University of Moscow were a wonder, a revelation, and a reproof to many of the visitors who had deemed Russia behind the age. In the possession and in the most complete equipment of these clinics and institutes, in all departments of medical science, and numbering at least a score, Russia is far ahead of ourselves; though it may well be doubted whether our patients would agree to the methods and arrangements which obtain there. All these clinics are associated with the University, and the teachers are on the University staff. The patients reside in the clinics only while the University is in session and requires clinical material for teaching: they are sent away at the close of the session either to their homes or to some other hospital or asylum.

The Psychiatric Clinique is a complete cure-asylum for fifty patients—thirty men, twenty women—standing in its own ample and well-wooded grounds, and equipped in the most complete manner with all the newest and best instruments and appliances for the investigation and treatment of brain diseases. It is the kind of cure-asylum which should be possessed by the large cities of our own land (except that ours should be three or four times larger), where recent cases could be received and every possible means used for their recovery before passing them on to larger home-asylums; in these, recovery, if attained, would be more tedious, and due more to occupation and moral discipline than to direct medical treatment.

It must be regretfully confessed that the general impression left by the work of the section was that much progress was being made in the investigation and knowledge of disease and very, very little in its treatment. This must be true in all departments of applied medicine until we gain a more perfect knowledge which shall give us, if not the power of curing disease, the power to avert its occurrence or to modify its course. The knowledge which brings depression to day will grow greater soon and bring blessing to men.

THE BRITISH ASSOCIATION AT TORONTO.

Sir William Turner's address to the Anthropological Section was of great general interest and of special interest to ourselves.

On cranial capacity, he arrived at the conclusions that this was greater in the European than in the savage, that the range of variation was also greater, that few male savage crania reached the European mean (1,500 c.c.), and that there is less difference between male and female crania in savages than in Europeans.

Flechsigs's recent observations and conclusions were very carefully summarised and commented on. Sir William points out that the problems they suggest are "the proportion which the *association centres* bear to the other centres, both in mammals and in man; the period of the development of the *association fibres*, in comparison with that of the motor and sensory fibres in different animals; and, if possible, to obtain a comparison in these respects between the brains of savages and those of men of higher order of intelligence."

Flechsigs's observations are described in this number of our Journal, and their importance is testified by the expectation of progress of which these problems give promise.

THE MORISON LECTURES.

Dr. Alexander Morison delivered the Morison Lectures for the present year in the Hall of the Royal College of Physicians, Edinburgh, during the

first week of November, on "The Anatomy and Physiology of the Nervous Mechanism of the Viscera."

In the first lecture he described the hardening and staining methods employed in the histological study of the peripheral nervous system, and described the nature of the nerve-endings at the secreting cell, at the unstriated muscle fibre, and at the blood-vessel especially in excretory organs. In the second lecture he demonstrated the peripheral nerve-mechanisms of the spleen, kidneys, adrenals, and other viscera, and traced the connections of the terminal ganglia of the sympathetic with the nerve-endings in the viscera on the one hand and with the fine fibres of the cerebro-spinal axis on the other. The third lecture was mainly concerned with the physiology of the subject, the innervation of the heart by the vagus and the sympathetic.

The lectures were most interesting, and were profusely illustrated by lantern slides and microscopes. Next year Dr. Morison purposes dealing with the nervous mechanism of the viscera in relation to pathology and clinical medicine.

RECENT MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Reg. v. Marriolini.

Prisoner stabbed his wife in twenty-five places, and about two hours afterwards threw himself into the Thames. While in the water he discharged a revolver four times. He was rescued, and then said, "I have killed my wife by stabbing her with a large knife. She worried me so much that I told her she would make me murder her." Subsequently he said, "I had a quarrel with my wife. I have been unhappy for twenty years. I have had a miserable life." It was proved that three years before there had been an explosion at the café kept by the prisoner, and that he received such injuries that he was in hospital for five months. When he returned home he was greatly changed, became very irritable, and complained of pains in the head. For ten days before the murder he suffered very much from sleeplessness, and used to wander about the house at night talking to himself.

Dr. Bastian, who had examined the prisoner at the request of the Treasury, and Dr. Scott, medical officer to Holloway Gaol, were called for the defence, and stated that they were of opinion that the prisoner was insane on the date of the murder, and was not responsible for his actions.

The jury found the prisoner "Guilty, but insane."—Central Criminal Court, September 15, 1897 (Mr. Justice Bruce).—*Times*, September 16.

The prisoner's own confession showed that he knew what he was doing and alleged a motive for the crime. The medical witnesses were allowed the freest license, and answered the very questions that had to be put to the jury.

Commissioners v. Shaw.

In November, 1896, Dr. Maudsley was ordered by the Lord Chancellor, at the instance of the Commissioners in Lunacy, to visit and report upon two persons who were residing with Mrs. Shaw in an unlicensed house at Elstree, and who were reported to be insane. Dr. Maudsley visited them accordingly, and reported that one of the persons (J. F.) was an imbecile, probably from birth, and was certifiable as a person of unsound mind; and that the other (D. V. S.) was suffering from chronic insanity, with hallucinations of hearing and delusions, and was certifiably insane. Dr.

Maudsley further reported that the bedrooms occupied by these two patients were ill-furnished, not clean, in need of painting and papering; and that the wet had soaked through the roof and caused a considerable fall of plaster, which left the laths exposed.

Upon this report the Commissioners, on the advice of the Solicitor to the Treasury, instituted proceedings; and Mrs. Shaw was summoned before the justices at the Barnet Petty Sessions for receiving and detaining in a home, not being an institution for lunatics or a workhouse, two lunatics; for taking charge, for payment, of J. F.; and for a like offence with respect to D. V. S. The justices are reported to have dismissed the second and third charges, on the ground that they were satisfied that neither of the alleged lunatics was a lunatic within the meaning of the Lunacy Act, 1890; and they declined, on a similar ground, to commit the defendant for trial on the first charge.

This case is another example of the lenity with which alleged offences against the Lunacy Act are regarded by the public, so long as the allegations are not made against medical men. If it were alleged that in any licensed house the bedrooms occupied by patients were ill-furnished, not clean, and had the plaster dropping off the walls from damp, we can imagine the howl of execration that would be raised by the halfpenny journals, and the clamour for the instant abolition of "private asylums." But so long as the persons charged are responsible to no one, are exempt from all supervision, are unlicensed, and, above all, have no pretensions to medical knowledge or skill, they can do as they please, and the county Shallows will not interfere.

Friendly Societies and Insanity.

William M'Rorie, a member of the Loyal Order of Ancient Shepherds, became insane, and was removed to the Perth District Asylum, and Mr. D. T. Clement, solicitor, Crief, was appointed *curator bonis* on his estate. The patient was kept there at the expense of the Parochial Board of the parish of Crief till August, 1896. At that date the patient succeeded to some property by the death of his father, and the Parochial Board intimated a claim for the patient's board and lodging from the date of his father's death, and further that he must be transferred to a private asylum. The claim was paid by the curator, and the patient was removed to Murray's Royal Asylum. By the rules of the society of which the patient was a member members are entitled to relief in sickness and when unable to follow their usual employment, or when in distressed circumstances; but if a member becomes chargeable to a Parochial Board no relief is allowed unless the member has some one dependent upon him, which was not so in this case. Consequently the society were not entitled to pay sick benefit up to August, 1896. Mr. Clement, having paid his ward's board and lodging from that date, intimated to the society a claim for sick benefit in respect that his ward was being kept in the asylum at his own expense. The society refused payment of the claim under their general rule 63, viz., "If any member afflicted with insanity, permanent debility, or loss of sight be provided for in some place of refuge, the Lodge officers shall have power to detain the sick pay for his benefit." Against this decision an appeal was intimated, in terms of the society's rules, to the Lodge Arbitration Committee on behalf of the *curator bonis*, but the Arbitration Committee refused to sustain the appeal on the same grounds as the Lodge had done. A further appeal was intimated to the Arbitration Committee of the District of the Order. After a lengthy discussion, this committee sustained the appeal, and found (1) that as the ward had been in the asylum since August 28, 1896, at his own expense, the society were bound to pay the sick benefit claimed; (2) that the deposit of 10s. made in terms of the rules of the society by the appellant be returned; and (3) that the society pay the expenses incurred in hearing the complaint.

The Law and Insane Murderers.

The legal procedure in cases of homicide by certified lunatics seems to be now clearly established in Scotland. Two murders occurred in two Scottish asylums last summer. The patients were dealt with in the same way. On intimation to the Procurator-Fiscal they were brought before the Sheriff, who, being assured of their mental unsoundness, remitted them to the higher courts. On their appearance there the advocate for the Crown intimated that they were insane, and led evidence to that effect by calling expert witnesses. The judge immediately ordered the lunatics to be removed to the Lunatics' Department of the Perth Prison and there confined during her Majesty's pleasure.

THE ENLARGEMENT OF RAINHILL ASYLUM.

We regret to observe that the Lancashire Asylums Board have decided to provide additional "temporary" accommodation at Rainhill for 200 patients. It is to be hoped that these buildings will be really temporary, and that the Board will remove them as soon as possible. The evils of these overgrown institutions have been so often the subject of unfavourable comment that we refrain from further remarks at present, except to express sympathy with Dr. Wiglesworth in having this unwelcome addition thrust upon him. We certainly cannot agree with Mr. Turner in his reported remarks to the effect that, as in a very short time the lunacy requirements of the county would be such as to occupy all the permanent provision that the Board anticipated making, as many of the asylums as could should make temporary accommodation. If the requirements transcend the possibilities under the arrangements now completed, it seems to us high time that the question of further permanent provision should be faced.

EDINBURGH DISTRICT LUNACY BOARD.

An important report upon asylums on the Continent and in England has been prepared by a committee of the Edinburgh District Lunacy Board, in view of the proposed new asylum for Edinburgh. It is a document of special interest to those interested in the provision of accommodation for the insane, and especially to us as an expression of opinion in regard to recent methods of asylum construction set forth by a body of gentlemen who approach the subject with open minds. The deputation returned impressed with the conviction that the asylum at Alt Scherbitz was the best they had seen, and that Edinburgh should adopt that system. The estate of Wester Bangour, near Uphall, extending to 861 acres, has been purchased for £13,000; and the District Board have resolved to construct their institution on the villa system, at an expense of some £150,000. We understand that the plans will be open to a limited competition, and we shall watch the development of this important hospital with great interest.

"THE GROWTH OF INSANITY IN SCOTLAND."

An article under this heading, "contributed" to *The Scotsman* of 8 December, 1897, draws attention to the existence of "crazy" areas in Scotland.

Thus, while the ratio of the insane in Scotland generally for the 1896 quinquennial was 27.1 per 10,000, this is described as rising to 90 per 10,000 in the parishes in Argyllshire, but the writer does not draw attention to the fact that in the twenty-five remaining parishes the ratio must, on his own showing, fall below the average.

Craignish and Kilmelfort, with populations of 389 and 407, are stated to have a ratio of 170 per 10,000. This sounds very startling; but, when we recognise that the basis of the assertion consists of about thirteen lunatics, which two or three families might supply, it is not likely to cause serious alarm. These raw-baked statistics and reckless methods are unfair and misleading to the ordinary newspaper reader. What would be thought of a sanitary expert who seriously compared the health of the residential part of any town with that of its slums as an evidence of the unhealthiness of the whole district; or who drew conclusions from population groups of three or four hundred and applied them to a whole community? The contribution in question is unworthy of the subject in manner and matter, and not what we have been accustomed to find in the columns of *The Scotsman*.

A REQUEST FROM RUSSIA.

We have received a circular from Professor Bechterew stating that the clinique for mental maladies in the Imperial Military Academy of Medicine at St. Petersburg has now been opened for thirty years, and that a new separate building for nervous diseases will be inaugurated forthwith. It is proposed by the physicians in charge to create two museums, psychological and neurological, to commemorate this event. They ask for contributions of plans, reports, publications, photographs, etc., relative to asylums and their inmates, and for pathological specimens, preparations, apparatus relative to nervous diseases. Those willing to aid are instructed to address packages to "Russie, St. Petersburg, Clinique des Maladies Mentales et Nerveuses, Rue Samarskaya No. 9. The carriage will be paid by the recipients. Our Library Committee might take a hint and negotiate a fair exchange.

CORRESPONDENCE.

FROM DR. REID, ROYAL ASYLUM, ABERDEEN.

The installation of the electric light at the Aberdeen Asylum, at the time particulars were asked, was in an incomplete state, and is still so far from being finished that we cannot give definite information either as to the first cost or as to the cost of maintenance. The light has been in use in the Hospital buildings for over a year, and has recently been introduced into Elmhill House, there being in all about 700 lamps in use. It is not yet introduced into the Asylum main buildings, but will be as soon as the proposed reconstruction and alterations are completed, which, however, will not be for some years. When all is finished it is estimated that there will be from 1,500 to 1,600 lamps in use.

With regard to our generating plant for electric lighting, there are two 50 horse-power gas engines with heavy fly-wheels, running at 200 revolutions per minute, driving, by means of laminated leather belts, two dynamos, which are shunt wound, each with a maximum output of 36 kilo-watts. The current is continuous at a pressure of 110 volts. The E.M.F. in each dynamo is regulated by a resistance placed in the field magnet circuit with contacts for throwing more or less of it into circuit.

There is also a storage battery of sixty cells in leaden boxes, of 1,600 ampère hours' capacity on a nine hours' discharge, and a minimum discharge rate not exceeding 300 ampères. Recording ammeter and voltmeter are placed on the main switch-board.

The gas used for the engines is Dowson gas made on the premises; there being also provided a connection with the town's gas supply in case of any failure in the Dowson plant. When the current is taken direct from the dynamos the lights are to a small extent unsteady. This is got over meantime by running them in parallel with the battery.

In distributing the current conductors are taken from the main switch-board in dynamo room to distributing boards placed at various points throughout the building. It is there divided into two main circuits, either of which can be cut off independently of the other. From omnibus bars connected with these main circuits leads are run to the lamps, which are arranged in groups of from twenty to twenty-five for each pair of leads. They are also arranged so that one of the main circuits can be shut off during the night.

Most of the lamps are 16 candle-power; a few are 32; and some 8. Arc lamps are used in the dynamo room and for lighting the Asylum, Hospital, and Elmhill House approaches.

In the Hospital all single rooms are lighted by bulkhead lights placed over the doors with the switches outside. Day rooms have two-light pendants and wall brackets placed at about eight feet from the floor, and also a few counter-weight lights. The dormitories and corridors have plain cord pendants about nine feet from the floor.

Excepting in the single rooms, as above stated, all the switches are placed inside the rooms, and are quite within reach of patients, but no trouble has been experienced on that account.

At Elmhill all the lights have been placed as they would be in a private house, except that in a number of the bedrooms the switches are placed outside the rooms.

We have no means of decreasing the brilliancy of the light except by turning out a number of the lamps. The dormitories are supplied with a few 8 candle-power lamps with obscured glass, so as to subdue the lights left in over night.

The men who attend to the lighting plant have also charge of the steam boilers; steam being required for purposes of heating, cooking, ventilation, and laundry purposes; and thus it is not easy to state what proportion of the expenses should be assigned to the electric lighting. The staff consists of one engineer and four assistants. It is expected that this staff will be sufficient when the asylum main buildings—at present lit by gas supplied from the city—are lighted by electricity as reconstruction proceeds.

There is at present no general dining-hall nor adequate recreation-room, but these are included in the alteration scheme, and electricity will be used as illuminant.

As to the suitability of electric lighting for an asylum, we think there can be no doubt that it is in every way superior to gas. Its cleanliness, the freedom from vitiated air attending its use, and the absence of danger from explosions and escapes are all in its favour.

FROM MR. TOWNSEND.

Referring to Dr. Jones's paper in the last number of this Journal, Mr. Townsend writes:—

Electric Lighting Engines.—Statistics taken during the last five years show (as pointed out by Dr. Jones, p. 761) that high-speed engines coupled direct to dynamos and with improved multitubular boilers, are coming into favour, and prove that their cost of generating current is nearly 10 per cent. lower than with slow-speed engines and belt-driven dynamos—especially when the engines and dynamos are of 50 horse-power and upwards.

Wiring.—The best systems at present known are (1) to run the wires, both

positive and negative being twisted together, and drawn into steel tubing, which is lined with a bituminous composition. (2) Wires as before drawn into plain iron tubes. In this system great care must be taken that the insides of the tubes are quite smooth, otherwise the insulation of the cables is certain to be damaged. (3) Concentric wiring, having the outer conductor "earthed." This outer conductor is sometimes of copper strip covered with lead, and sometimes small iron wires twisted closely together. The great advantages of concentric wiring over the tube system are (a) lower first cost and (b) less cutting away of floors, ceilings, and walls. The disadvantage is that the conductors cannot be so easily renewed as in the case of the tube system.

More skilled labour is required both with the tube systems and the concentric systems than with the wood casing system. In the case of the first two systems a leakage will very soon find its way to the other conductor—the result being a short circuit. In the wood-casing system a leakage may go on for years—the only result being waste of current. The precaution of "double" wiring as at Claybury is excellent but costly.

Gas Engines.—It is stated that "the speed of gas engines fluctuates slightly, so that running the lamps direct from the dynamo gives an unsteady light." This is perfectly true when gas engines of the "Otto" (Crossley) type are used. These engines never run much above 200 revolutions per minute, and only on full loads do they take an explosion every two revolutions, or say 100 explosions per minute. There is now a gas engine in the market which I have had experience of for over two years, which runs at 750 revolutions per minute and takes 375 explosions per minute. This engine runs so smoothly that there is not the slightest visible "jump" in the lamps. Indeed, it takes a very sensitive voltmeter to show any variation. This engine is of the "enclosed vertical" type, and is generally used coupled direct to dynamos.

Oil Engines.—My experience of oil engines has been large, and my advice is, Never use one if you can possibly help it, especially for dynamo driving. These engines are very expensive to buy, and even more expensive in maintenance. The best oil I have found is a Russian oil at from 5d. to 8d. per gallon, according to the state of the market. Oil engines are "nasty, noisy, smelly things," but I recommend the use of oil engines for small installations up to about 10 horse-power or as "stand-by" in water-power installations.

Turbines.—The remark by the Superintendent of the Devon County Asylum that "turbines should be avoided" seems to indicate that something is radically wrong with the installation. Of course there must be abundance of water at the driest time of the year, and the height of fall has to be taken into consideration.

COMPLIMENTARY.

PRESENTATIONS.

Mr. Richard Adams, L.R.C.P.Edin., M.R.C.S.Eng., Medical Superintendent of the Cornwall County Asylum, at Bodmin, on his retirement from that office, which he had held over forty years, was presented with a valuable silver coffee tray as a testimonial of esteem, subscribed for by 157 of the officials, past and present.

Dr. Nathan Raw was, just before his departure from the Dundee Infirmary for his new sphere of labour in the Mill Road Infirmary, Liverpool, the recipient of a present, subscribed for by the nursing staff of the former institution, which consisted of a pair of silver candlesticks and silver inkstands enclosed in a case. On the outside of the lid of the inkstand are engraved Dr. Raw's initials, and inside is the following inscription: "Pre-

sented to Nathian Raw, Esq., M.D., B.S., L.S.Sc., F.R.C.S.E., by the nursing staff of the Dundee Royal Infirmary in grateful remembrance of his unfailing courtesy and consideration. October 2nd, 1897."

HACK TUKE MEMORIAL.

By a very handsome donation of £25 from Mrs. Hack Tuke the sum for investment has been brought up to £350. This sum has been handed over to the Association and invested. The interest of the fund will prove of the greatest service in developing the Library, which is probably the form of memorial most fitting to Dr. Tuke's memory, and which he would certainly have approved.

OBITUARY.

W. H. HIGGINS.

Dr. William Henry Higgins died on October 26, 1897, at Birkenhead, whither he had recently retired after leaving the Leicestershire and Rutland Asylum. He graduated at Edinburgh, having obtained both the gold and silver medals for Anatomy, and in 1869 he became a member of the Royal College of Surgeons, England. Immediately after this he was attached to the Pacific Steam Navigation Company, sailing to the west coast of South America for four years, during three of which he was Superintendent of their hospital at Callao. He then returned to Edinburgh to make a special study of mental diseases. His first appointment in lunacy was as Assistant Medical Officer to the Derby County Asylum, under Dr. Murray Lindsay. From thence he went, in 1876, to the Leicestershire and Rutland Asylum, under the late Dr. Buck. After Dr. Buck's death he was appointed Medical Superintendent, in 1881. During his term of office he carried out many structural alterations and improvements on the asylum. Though he took a great interest in the treatment and welfare of his patients, Dr. Higgins seldom contributed any writings in connection with mental diseases. In 1894 his health began to break down, and in June of that year he became seriously ill. After several months' leave of absence, he finally retired, in March, 1895, with a pension sanctioned by the County Council. It was hoped that in the retirement from the work and worries of an asylum his health would improve, but to a severe recurrence of his former illness he succumbed. He occupied his leisure hours with astronomy, and in his latter years engaged in the study of Hebrew and Swedish.

PROFESSOR HAUGHTON.

By the death of Professor Haughton, which took place on October 31, 1897, the University of Dublin has lost one of its most remarkable ornaments and Irish social life one of its most striking figures. Haughton was a man who, under more favourable circumstances (viz., most especially if he had been blessed with a lesser measure of early success), might have been capable of almost any intellectual feat. His versatility and the agility of his intelligence alone amounted to genius. In the humdrum region of university teaching in which unhappily he early lost himself he always seemed the most brilliant pioneer. Unfortunately he yielded to the temptations—to diffusion and lack of concentration—to which a versatile genius is particularly exposed, and consequently he did not really lead in any of the numerous subjects which he illuminated. One example is afforded by his ill-fated remark on

Darwin's epoch-making work that it contained nothing new that was true and nothing true that was new. Haughton's knowledge, often profound, always acute, dies with him, for he has written little that will last: his sparkling wit and genial good-fellowship will survive in the memory of those who were favoured with his personal acquaintance. One great work will, we hope, long bear testimony to his zeal for knowledge and his disinterested public spirit. To him is due the revival of the so-called "School of Physic in Ireland" (Medical School of Trinity College, Dublin), and we trust the debt which that school owes him will never be forgotten. Dr. Haughton exhibited much interest in the work of our Association at the Dublin meeting of 1894, though the feeble condition of his health even then precluded his taking any active part in our proceedings.

JAMES C. HOWDEN.

Born at Musselburgh in 1830, Dr. Howden received his elementary education there. After taking his degree at the University of Edinburgh, in 1852, he studied at Paris. He served as Assistant Medical Officer, under Dr. Skae, at the Royal Asylum, Edinburgh; and in 1857 received the appointment of Medical Superintendent of the Montrose Lunatic Asylum, succeeding Dr. Gilchrist, who had gone to the Royal Crichton Institution, Dumfries.

Before his appointment the managers had found the grounds about the old asylum too restricted, and a new site was selected at Sunnyside, about two and a half miles from Montrose. This building, with its subsequent adjuncts, grew up under Dr. Howden's eye, although he has not survived to see the completion of the new house for private patients. As the years went on the main building was extended and improved. In particular, a new and spacious recreation hall was opened, for Dr. Howden took the keenest interest in all forms of recreation. Those who noticed his solemn face and listened to his slow speech might at first have imagined that they had lit upon the—imaginary—typical Scotaman, devoid of humour. It needed, however, but a moderate acquaintance to dispel that delusion. It might have astounded some of his graver acquaintances to have seen the interest which he took in *The Sunnyside Chronicle*—in its quips and cranks, mystifications and merriment—as if he had been an undergraduate running *Alma Mater* or some other college magazine.

In 1890 a detached building, containing 100 beds, was erected. This has been the model of various hospitals erected in connection with Scottish asylums during the last few years.

Thorough firmness, tact and courtesy, displayed through a long period of years, resulted in harmony with central and with local authority, and distinguished Dr. Howden's career. For many years before his death he was aught but robust. The abyss of human woe into which an asylum superintendent has daily to peer must cast on him occasional shadows of gloom, unless he is more or less than man. From these Dr. Howden was not free, nor is it advisable that men in his position should be free from the liability thereto. But these were to him but as light clouds obscuring for a little a midsummer sun. His general attitude to the outside world was that of cheeriness; to his circle of friends—no small one—it was that of genial hospitality. His very "grumpiness"—often, one was inclined to think, humorously affected—was more cheery than the bland superficial smile of shallower natures.

Holding to a high ideal of duty for himself, he did not expect too much from his fellow-creatures, nor worry himself when they did not come up to the proper standard. Things which were under his own authority he, very properly, liked to have regulated in his own way, and he would, very naturally, find fault if there was a failure on the part of those who under him were responsible. When he was away from his usual routine he could,

in a philosophical spirit, recognise that other people had different dispositions and habits, not to be lightly thrown off. This trait in his character came out noticeably in a trip to Ireland on which the writer and another friend accompanied him a few years ago. Bad weather sometimes interfered with pleasure, and there were delays and mistakes which reminded us that we were not among the business-like Anglo-Saxons. These latter troubles he took, not merely with composure, but on some occasions it seemed with glee, as if they were the troubles of other people represented for his amusement upon the stage. His ability to derive amusement from small things was indeed a notable feature in his character.

Dr. Howden did not obtrude his scientific acquirements, but was glad to co-operate with those of a kindred spirit. For many years he was Vice-President of the Montrose Natural History and Antiquarian Society. In 1868 he was President of the Section of Psychology at the Glasgow meeting of the British Medical Association.

Dr. Howden constructed an ingenious and valuable form of index for the registrations of the lesions recorded in pathological records or case-books of hospitals and asylums, and made various contributions to medical literature, among which was an interesting paper on The Religious Sentiment in Epileptics and an important statement as to Granular Degeneration of the Nerve-cell in Insanity.

A paralytic stroke, some three years ago, partially disabled him and deprived him of the power of writing. To this loss he was by no means indifferent, but he bore it calmly. In the beginning of this year increasing infirmities induced him to send in his resignation. With regret at the unavoidable necessity and with expressions of heartfelt esteem the resignation was accepted, but it was arranged that Dr. Howden should continue his connection with the asylum as salaried Psychological Consultant. Dr. Howden had been married for thirty years, but left no children.

Though the Royal Asylum of Montrose gives every promise of continuing its honourable and useful career, yet there are those who feel that the loss of the large strong soul that is gone leaves in their existence a dreary blank, who feel that the world is perceptibly smaller.

We would add to the foregoing reminiscences of Dr. Howden's career of honest and strenuous endeavour our appreciation of his kindly good sense. He was the oldest asylum physician in Scotland at the time of his death, and with him passed away a shrewd, cautious Scot, whose contributions to scientific work were always worthy of close study, whose friendship, esteem, and counsel were highly prized.—Ed.

WILLIAM GURSLAVE MARSHALL.

By a somewhat remarkable coincidence, two former Medical Superintendents of this asylum—colleagues during twenty years—surviving fifteen years more—died within one week of each other. Mr. William Gurslave Marshall, F.R.C.P., F.R.C.S., succeeded Dr. Davey, the first Superintendent of the Female Department, in 1852. The building (of which the foundation-stone was laid by Prince Albert in 1851) had been opened about a year. Mr. Marshall had previously been Resident Medical Officer of the Northampton Borough Asylum.

He continued in the active discharge of his duties at Colney Hatch for thirty-eight years. In 1868 he had a nearly fatal attack of illness, the result of an accident. But until his health failed, shortly before his departure in 1890, it was equal to the heavy demands upon his strength and energy.

The entries of numerous details in the books of his department were, it is believed, largely made, day by day, by his own hand. The maxim, *Quæ facit per alium facit per se*, did not altogether find acceptance with him. For many years it was his practice to visit all the female wards twice daily. On his rounds words in profusion would assail his ear, would claim attention, and often receive some reply.

Often fatigued, sometimes overdone, yet never complaining, he went faithfully on his way, year in year out. His chief refreshment was found, perhaps, in books. *Blackwood* and *The Athenæum* were favourite magazines. The society of familiar friends and occasional public entertainments (sharing the pleasure with others) were diversions furnishing some "variegation of existence." Mr. Marshall had a strong attachment to his kinfolk, and as many passed away in his lifetime a sense of increasing loneliness no doubt saddened his declining years.

Placidity of temperament was one of his marked characteristics. He maintained unruffled demeanour in often disturbing circumstances. A patient's provoking words would receive no rejoinder, or a quiet reply, accompanied perhaps with a little playful banter. The expression of his countenance, which was somewhat immobile, was an index to the composure of (to use a favourite phrase of his) his "mental condition." Yet an unemotional manner by no means denoted want of sympathy. The writer of these lines has personal reasons for gratitude to Mr. Marshall for his kindly and patient interest on more than one occasion of anxiety.

Stare super antiquas vias was perhaps a motto too inflexibly observed by the subject of this imperfect notice. But *Suum cuique*. To every man his gift. And Mr. Marshall was rather a conscientious and thorough performer of prescribed duties than either an originator or theorist. He left no detail of work unattended to. No doubt he might have economised his arduous labours, lessening his own fatigue. But he derived satisfaction from the knowledge that each day's allotted work had not only been gone through, but also accurately recorded. The writer recalls an incident of Mr. Marshall at the commencement of a dangerous and well-nigh fatal illness sitting up in bed with official books open before him.

He served during thirty-seven years under successive committees of the Middlesex magistrates and of the London County Council, to whom he rendered loyal allegiance. On the retirement of the former, in 1869, though he might have claimed honourable release from an unusually prolonged period of official work, yet, considerably judging that his continuance awhile in office might be an assistance to the new governing body, he deferred his resignation until failure in health compelled him to tender it.

Mr. Marshall's personal acquaintance with his patients and his knowledge of their circumstances was another characteristic of his long administration, which came to an end in 1890. Now he himself has passed away, full of years, and another link with the older school of Medical Superintendents and practitioners has been severed.

H. H.

EDGAR SHEPPARD, M.D., F.R.C.S., M.R.C.P., D.O.L.

With the death of Dr. Edgar Sheppard one more of the past generation of Medical Superintendents has disappeared—a group that contained many men of great ability and courage, who at a somewhat critical period in asylum management so directed and established procedure that their successors have inherited the good results of their work in a way that they perhaps scarcely appreciate.

At that time the position of a Medical Superintendent was an uncertain one; he was not the recognised head of the establishment in the way that he now is, and it is to a large extent due to the efforts of the men we are

speaking of that a stand in the right direction was made and the professional dignity of the speciality was recognised. Lockhart Robertson, Brushfield, and others we might name, all contemporaries, made a stout phalanx in defending the position we allude to, and their foresight and character helped to found that system which in its stability of to-day is a monument to their endeavours.

The subject of this notice was born at Worcester seventy-eight years ago, and was educated at the Bridgenorth Grammar School, being contemporary with the present Lord Lingen. He first practised at Worcester and then at Enfield, after which he travelled for some time on the Continent.

General practice was distasteful to him, and on the occurrence of a vacancy he sought and obtained the Medical Superintendentship of the male side of the Colney Hatch Asylum, a post which he held with distinction for many years, and from which he retired (on a pension) in 1881. During his tenure at Colney Hatch he became Professor of Psychological Medicine at his old school (King's College, London), and for his class there he wrote his *Lectures on Madness*. After leaving active asylum life Dr. Sheppard became connected with the Treasury, and was frequently engaged in criminal cases, where his ability as a witness was recognised and acknowledged by the judges. For many years he was a prominent figure in London, but failing health caused his retirement to Worthing, where he died from diabetes, after enduring much suffering, borne with great fortitude. Possessed of a fine presence and bearing, Dr. Sheppard had a marked individuality and an imperturbable temper. Few exercised so much influence upon the men with whom he came in contact, and those who were intimate with him could testify to the kindly heart which underlay a somewhat rigid and severe exterior. He missed being a great man in the speciality because perhaps of the diversity of his accomplishments, and perhaps also because his training had been more superficial than scientific. Indeed, at that time the scientific study of insanity was far behind its present development, the treatment by non-restraint had not very long been recognised, and the clinical and hospital treatment of the insane had yet to be fully developed. The appearance of the first edition of Dr. Maudsley's book on *Mind* was a distinct epoch-making addition to the literature of insanity, and Dr. Sheppard at once recognised its value and importance.

As far as he could he tried to elevate the treatment of his patients by introducing a home-like feeling of comfort and confidence in them, by elaborating the Turkish bath treatment, and by developing freedom and outdoor sports and exercise wherever possible. But if his methods were not very exact, his general accomplishments were elaborate. He was a fair linguist in French, German, and Italian, and his acquaintance with general literature was extensive and was kept well up to date.

At one time he criticised the Society of Friends in a book entitled *A Fallen Faith*, at another he took up the hydro-therapeutic treatment of insanity, and, always having a facile pen, he found favour in the columns of *The Times*, and frequently appeared there in a polished and vigorous style on matters of special public interest connected with his subject. He wrote an elaborate article on "Cremation" in *The Pall Mall Gazette*, and, to show the strength of his convictions on this subject, he gave definite instructions for his remains to be cremated, a proceeding which, in deference to his expressed wishes, was carried out at Woking.

The writer can bear personal testimony to the respect and confidence with which he was always treated by his patients and by the staff with whom he was immediately associated, and to the unostentatious but very substantial manner in which he assisted by influence and money the necessitous whose straits were known to him. His conspicuously fair and judicial mind and his practical acquaintance with his subject qualified him for higher office than he ever actually attained; but he was never an office-seeker, and as a fact he never mixed very freely with contemporary medical men, nor did

he attend the medical societies, partly owing to circumstances and partly to disinclination, and therefore his qualities could not be fully appreciated by those who might have been of most use to him.

His son, the Sub-Dean of the Chapels Royal, to whom he was greatly attached, testifies to the large number of letters of condolence written by people well known in the literary world, and it was just in this class that his chief sympathies lay. At one time of his life his religious convictions were by no means deep, but of late years they were greatly intensified after long and earnest conference with one of the most enlightened of ecclesiastical dignitaries, and ultimately he died in the Faith, a sincere Christian.

Such is the brief history of a man who did much and who was capable of more, who held a lofty ideal of his position and profession from the social point of view, and endeavoured by precept and example to inculcate the same among his pupils; and who, sometimes misunderstood and harshly criticised, was always able forcibly to give his reasons and faithfully to follow his single line of purpose, and of whom those who best knew his warmth and steadfastness of friendship will say with earnest fervour, "Peace to his ashes."

T. C. S.

ROBERT GILLIES SMITH.

We regret to have to record the death of Mr. R. G. Smith, the eldest son of Dr. Smith, of the Durham County Asylum. He died at the early age of thirty-six, on 3 October last, while undergoing a second operation for fistula in ano. Mr. Smith graduated as M.A. of the University of Aberdeen, and afterwards became B.Sc.Lond., M.R.C.S.Eng., and L.R.C.P.Lond. After serving as Assistant Medical Officer in the Durham, Whittingham, and Newcastle Asylums, he went as Medical Superintendent to Dunston Lodge Asylum, which position he occupied until his untimely death.

J. B. LUYS.

Dr. Jules Bernard Luys was born in Paris in 1828, and had just completed his sixty-ninth year when he died. He gained the position of *interne* of the Paris hospitals in 1853, took his degree in 1857, and became *professeur agrégé* in 1863, having been appointed Physician to the hospitals in 1862. He was first attached to the Salpêtrière, then to the Charité; he was also Director of the Lunatic Asylum of Ivry. He was elected a Member of the Academy of Medicine in 1877, and in the same year received the decoration of the Legion of Honour, being promoted to the grade of officer in 1896. In 1893 he retired. M. Luys founded, and for many years directed, *L'Encephale*, a periodical devoted to nervous and mental diseases. He was the author of a number of works on neurology and the anatomy of the nervous system, for some of which prizes were awarded him by the Académie des Sciences. Among his works the principal are the following: *Recherches sur le Système Nerveux Cérébro-spinal* (1865); *Leçons sur les Maladies du Système Nerveux* (1875); *Le Cerveau et ses Fonctions* (1878); *Traité Clinique et Pratique des Maladies Mentales* (1881); and *Traitement de la Folie* (1894).

In his later years M. Luys devoted himself to researches on hypnotism, his views on the subject being given to the world in two works, *Les Emotions chez les Hypnotiques* (1886), and *Leçons Cliniques sur les principaux Phénomènes de l'Hypnotisme* (1889). Unfortunately these volumes did not maintain his position in the scientific world, but rather robbed him of a part of the scientific reputation he had acquired.

RUDOLF HEIDENHEIM.

We have to chronicle the death of Professor Heidenheim, at Breslau, on 13 October. His contributions to neurology were extensive and important. Professor Heidenheim will be chiefly remembered by psychologists by his little book on animal magnetism, which still remains authoritative.

THE LIBRARY.

The Library has been enriched by a handsome donation of books from the library of the late Dr. Bucknill, given by his heirs. The book-plates record the name of the donor or of the bequest, and the Library thus becomes a permanent record of those who have been interested in and connected with our Association.

NOTICES BY THE REGISTRAR.

Examination for the Nursing Certificate.

118 candidates applied for admission to the November examination for this certificate. Of this number 88 were successful, 23 failed to satisfy the examiners, 1 withdrew, and the results of the examination of 6 candidates have not yet been received.

The following is a list of the successful candidates:—

Norfolk County Asylum, Thorpe.—*Males:* Benjamin Bennett, George Carter, Josiah Englebright, George Flegg, James Tooke, William Thompson, John William Whatley, Charles Waterson. *Females:* Emma Hay, Celia Ladbroke, Fanny Mileham, Minnie Riches, Amelia Smith, Rebecca Wheatley, Evelyn Yauldren.

London County Asylum, Banstead.—*Females:* Emily Adelaide Barnes, Amy Baker, Emily Bucknell, Florence Briggs, Elizabeth Lock, Alice Maytum, Emily Warr, Elizabeth Wilkins.

Warwick County Asylum, Hatton.—*Males:* Albert Edward Batchelor, John Blakeman, Orontes Byrne, Arthur Elijah Girling, Walter Hope, Albert Joseph Owen, Ernest Prestwich, William Pettigrew, Frederick Wright, John Yardley.

West Riding Asylum, Menston.—*Males:* Newton Farrar, Alfred Gordon, Dawson Myers. *Females:* Dora Banner, Annie Spivey.

Borough Asylum, Sunderland.—*Males:* William Anderson, James Hunter, Stephen Littledyke, Benjamin Parker. *Females:* Dorothy M. A. Ayre, Florence Ager, Annie Elizabeth Bostock, Mary Kitching, Leah Hollings Watson.

Borough Asylum, Derby.—*Males:* Francis Samuel Ashton, Samuel Slack, Thomas William Slack. *Female:* Agnes Poynton.

Birmingham City Asylum, Rubery Hill.—*Male:* Henry Johnson.

Holloway Sanatorium, Virginia Water.—*Male:* Alfred Herbert Legge. *Female:* Edith Kingsley Corke.

Stretton House Asylum, Church Stretton.—*Males:* Richard Price, Edward James Holl.

Bethnal House Asylum, London.—*Female:* Georgina Naylor.

Northumberland House Asylum, London.—*Female:* Clara Elizabeth Cowen.

District Asylum, Hartwood, Lanarkshire.—*Male:* Alexander Jackson. *Females:* Jeanie Maxwell, Barbara Raepier.

District Asylum, Woodilee, Lenzie.—*Males:* William Boyd, Alexander Morrison, Donald MacCaskill.

District Asylum, Limerick.—*Males:* Matthew Baranc, Patrick Casey, Timothy Healy.

District Asylum, Kiltarney.—*Males:* John Browne, Thomas Donoghue, Cornelius Galvin, William Herlihy, William Ring, William Murphy, Denis O'Donoghue, Thomas Price, Daniel Rahilly, Patrick Sullivan. *Females:* Bridget Fleming, Ellen Rahilly, Nora Kelleher.

District Asylum, Ballinasloe.—*Males:* Patrick Craddock, Thomas Croughwell, Patrick Kelly, John Nevin, Edward Yarnell. *Females:* Julia Corless, Sarah Foy, Mary Gleeson.

The following is a list of the questions which appeared on the paper:—
 1. Explain the process of digestion and name the organs concerned therein.
 2. What are the general bodily symptoms indicative of kidney disease?
 3. If it is necessary to use force with a patient, what precautions would you take?
 4. Trace the course of the blood from the time it leaves the left ventricle till it returns again.
 5. What is meant by a "fixed" delusion, and give the different types?
 6. Distinguish between sensory and motor nerves. What is reflex action? Give an example.
 7. Name the clinical varieties of insanity, giving a short summary of the symptoms which each presents.
 8. Mention the various methods by which suicide may be attempted as far as you have heard, and briefly indicate the appropriate precautions to be adopted in respect of each variety.
 9. Describe the occurrence known as an epileptic fit. Briefly say what special measures are required in the treatment of epileptic patients.
 10. State the indications which would lead you to believe that a bone was broken, and describe the steps that you would adopt in such an event before the arrival of medical aid.

The next examination will be held on Monday, May 2, 1898, and candidates are earnestly requested to send in their schedules, duly filled up, to the Registrar of the Association not later than Monday, April 4, 1898, as that will be the last day upon which, under the rules, applications for examination can be received.

NOTE.

As the names of some of the persons to whom the Nursing Certificate has been granted by the Association have been removed from the Register, Employers are requested to refer to the Registrar in order to ascertain if a particular name is still on the Roll of the Association. In all enquiries the number of the Certificate should be given.

Professional Examinations.

The next examination for the Certificate in Psychological Medicine will be held in July, 1898.

The examination for the Gaskell Prize will take place at Bethlem Hospital, London, in the same month.

Competitors for the Bronze Medal and Prize of Ten Guineas must send in their essays to the President before May 30, 1898.

For further particulars respecting the various examinations of the Association apply to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

General Meeting.—The next General Meeting will be held in Sheffield on 16 February, 1898.

South-Eastern Division.—The next meeting will be held at the Wandsworth Asylum on the second or third Wednesday in April, 1898.

Irish Division.—The next meeting of the Irish Division will be held at the College of Physicians, Dublin, on Thursday, 16 March, 1898.

South-Western Division.—The Spring Meeting of the South-Western

Division will be held at the County Asylum, Littlemore, near Oxford, on Tuesday, 19 April, 1898.

Northern and Midland Division.—The next meeting will be held in May, 1898.

Scottish Division.—The Spring Meeting will be held in Glasgow on the second Thursday in March, 1898.

APPOINTMENTS.

PHILIPSON, GEORGE HARE, M.D., D.C.L., F.R.C.P., has been appointed Medical Visitor to the Dunston Asylum, Gateshead-on-Tyne, vice Dr. Embleton, retired.

GOLDIE-SCOT, T., M.B.Edin., appointed Assistant Medical Officer to the Warreford Asylum, Oxford.

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JANUARY, 1898.

FIGURES ILLUSTRATING PROFESSOR FLECHSIG'S WORK.

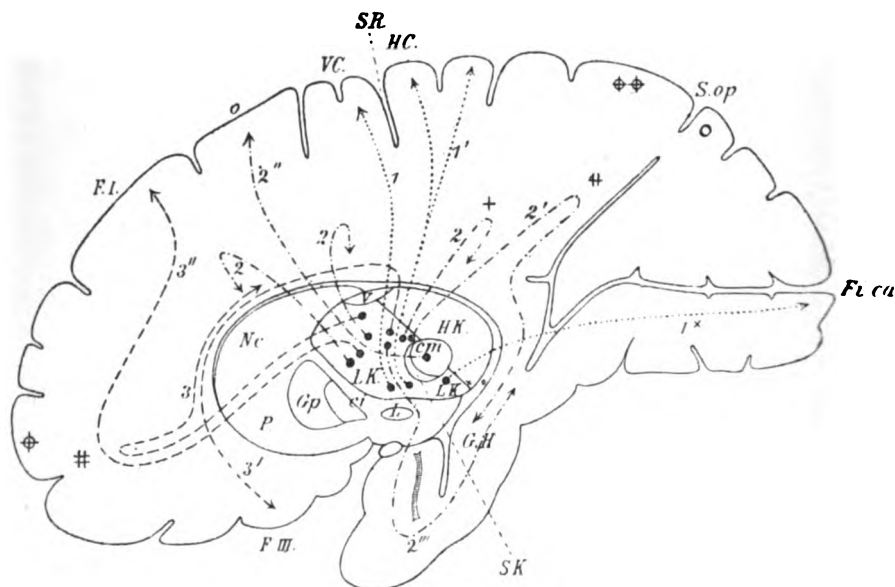


FIG. 1.—SAGITTAL SECTION OF THE BRAIN.

Here are delineated only the course of those fibres of the optic thalamus which lead towards the cortex. The cortico-fugal conducting fibres of the dorso-median group of the nuclei of the optic thalamus, the motor tracts, &c., of the cerebral cortex, are not given. The arrangement of the points in the ventro-lateral region of the optic thalamus is purely diagrammatic.

To illustrate Professor Flechsig's work.

EXPLANATION OF FIG. 1.

<i>G p</i>	Globus pallidus	} of the nucleus lenticularis	
<i>P</i>	Putamen		
<i>N c</i>	Nucleus caudatus.		
<i>L K</i>	Lateral nucleus	} ventro-lateral group of nuclei	} of the optic thalamus.
<i>S K</i>	Shell-like corpuscle		
<i>c m</i>	Median centre		
<i>H K</i>	Inner nucleus and pulvinar			} dorso-median group of nuclei
<i>V</i>	Anterior nucleus		
<i>c i</i>	Inner capsule.		
<i>L</i>	Corpus subthamicum.		
<i>F I</i>	Gyrus frontalis superior.		
<i>F III</i>	Gyrus frontalis inferior.		
<i>G H</i>	Gyrus hippocampi.		
<i>V C</i>	Anterior	} gyrus centralis.	
<i>H C</i>	Posterior		
<i>S R</i>	Sulcus centralis (Rolandi).		
<i>S.op</i>	Sulcus parieto-occipitalis.		
<i>Fi.ca</i>	Fissura calcarina.		

For FIGS. 1, 2, AND 3.

<i>1</i>	}The Sensory System Nr. 1.
<i>1'</i>		
<i>1^x</i>		
<i>1^{'''}</i>		
<i>2</i>	}	----- The Sensory System Nr. 2.
<i>2'</i>		
<i>2^{''}</i>		
<i>2^{'''}</i>		
<i>3</i>	}	----- The Sensory System Nr. 3.
<i>3'</i>		
<i>3^{''}</i>		

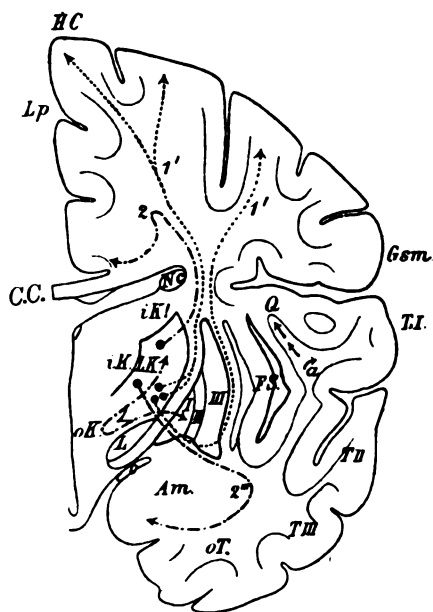


FIG. 2.—TRANSVERSE SECTION THROUGH THE BRAIN.

To illustrate Professor Flechsig's work.

EXPLANATION OF FIG. 2.

- I II III* First, second, and third limb of the nucleus lenticularis.
- L K* Lateral nucleus }
K i } inner nucleus } of the optic thalamus.
i K l }
- N c* Nucleus caudatus.
- L* Corpus subthamicum (Luys).
- o K* Upper crus cerebelli.
- o* Optic tract.
- A m* Amygdala.
- F S* Fossa sylvii.
- H C* Gyrus centralis posterior.
- G s m* Gyrus supra marginalis.
- T I* 1 }
T II 2 } Temporal gyri.
T III 3 }
- Q* Anterior cross convolution of the temporal lobe.
- o T* Gyrus occipito temporalis.
- L p* Lobulus paracentralis.
- C C* Corpus callosum.
- a* Auditory tract (Cochlearis).

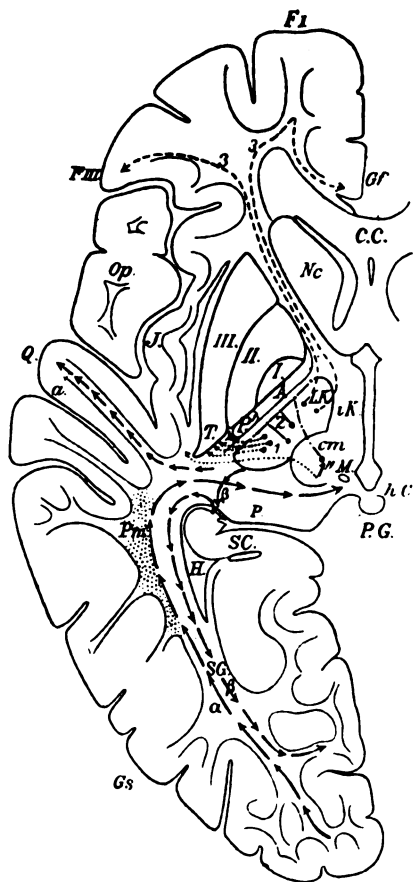


FIG. 3.—HORIZONTAL SECTION THROUGH THE BRAIN.

← Course of Auditory Fibres.
 → } Course of Optic Fibres.
 ← → }

To illustrate Professor Flechsig's work.

EXPLANATION OF FIG. 3.

- I II III* First, second, and third limb of the nucleus lenticularis.
Nc Nucleus caudatus.
L K Lateral nucleus
i K Inner nucleus
cm Median centre
P Pulvinar
M Fascicle of Meynert (cross section).
h C Posterior commissure.
P G Pineal gland.
P' Pyramidal path.
A Fascicle of Arnold.
T Sensory.
a Auditory path.
S G Course of optic fibres (Gratiolet's).
a Their cortico-fugal path.
B Cortico petal = corona radiata of the outer genu.
Q Anterior cross convolution passing into first temporal.
G s Gyrus subangularis.
F I 1 }
F III 3 } Gyrus frontalis.
G f Gyrus fornicatus.
S C Subiculum cornu ammonis.
H Posterior horn of latter ventricle.
O p Operculum.
P m (Dotted.) Cross section of the great association system
between the spheres of bodily sensibility (central gyri)
and the posterior great association system.
I Island of Reil.

EXPLANATION OF FIGS. 4 AND 5.

- B* Superior cerebellar peduncle
(red nucleus)
l Fillet
r Formatio reticularis
c H Central tract of tegmentum
P Pyramidal tract
5 Temporal } cortico-pontine
6 Frontal } tract
g Corpus geniculatum internum.
- tegmentum
of the
} crus cerebri.
pes of

The lines drawn in the brain convolutions indicate the association system.

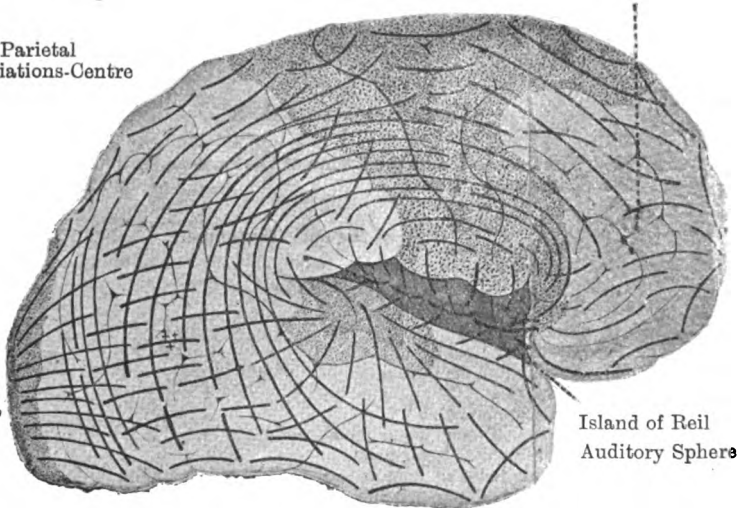
Sphere of Bodily Sensibility

Frontal Associations-Centre

Fig. 4.

Parietal Associations-Centre

Visual Sphere



Occipito-Temporal Associations-Centre

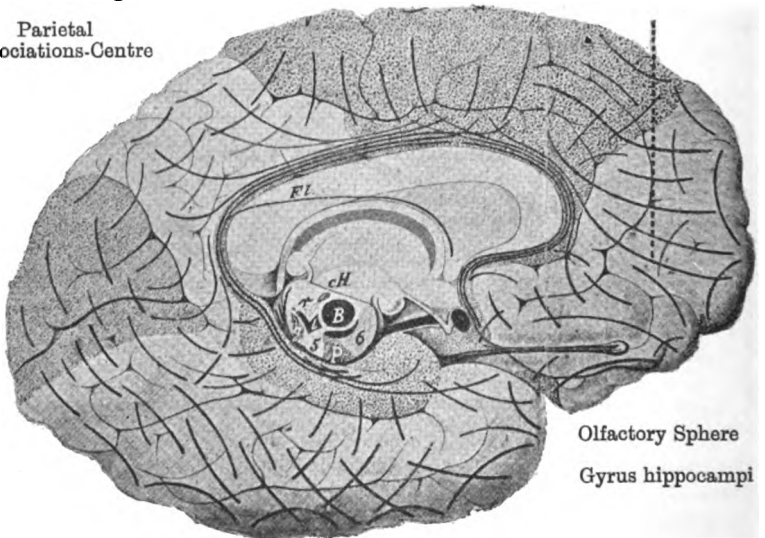
Sphere of Bodily Sensibility.

Frontal Associations-Centre

Fig. 5.

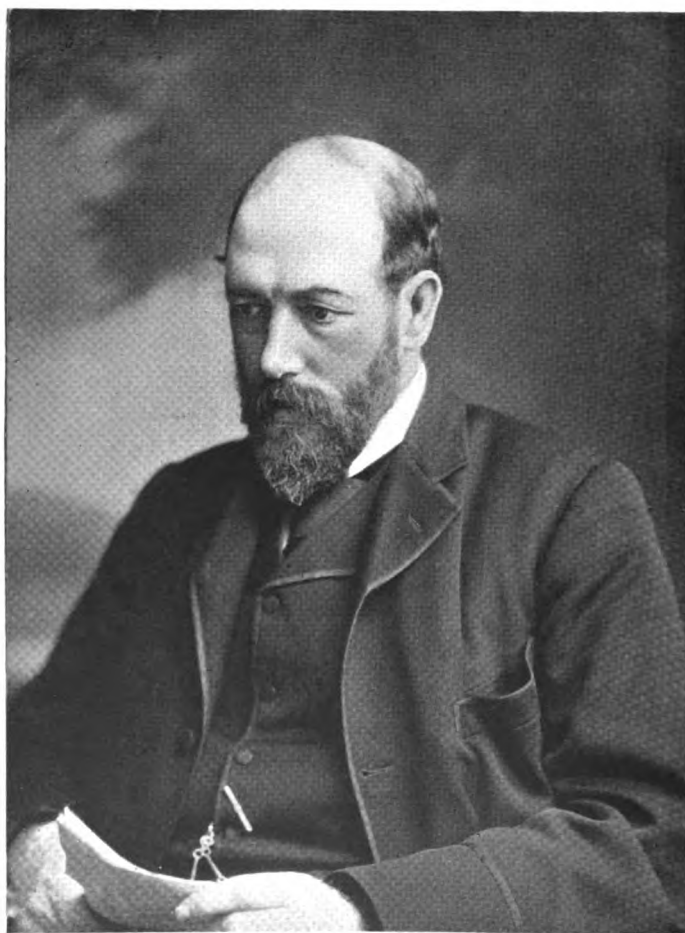
Parietal Associations-Centre

Visual Sphere



Occipito-Temporal Associations Centre

To illustrate Professor Flechsig's work.



DR. RINGROSE ATKINS.

THE JOURNAL OF MENTAL SCIENCE.

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APRIL, 1898.

VOL. XLIV.

PART I.—ORIGINAL ARTICLES.

Note on the Memory of Fishes. By W. C. McINTOSH, M.D., LL.D., F.R.S., Professor of Natural History in the University of St. Andrews.*

THOSE who have watched a larval cod about 4 mm. in length nimbly avoiding the forceps following it for capture are in a fair way to estimate the brain-functions of an adult measuring three feet. Still more is this appreciation of such functions strengthened by the behaviour of a large grey skate in its endeavour to escape over a trawl-beam more than fifty feet long which had been arrested in its rise—just above the surface of the sea—by a temporary block in the machinery. The dexterity with which it skimmed to and fro along the beam to find where it dipped sufficiently during the movements of the ship to enable it to glide over was a study, and relief was felt when at last its intelligent perseverance was rewarded. The observation of a group of salmon on a spawning-bed, and the acquired skill of young trout in passing up a model of a salmon-ladder, are corroborative of both intelligence and memory. Moreover, if those who have given a green cod of six or eight inches a particular kind of “scale-back” (a kind of worm), and noticed, firstly, how eagerly it seized it, then tested it in its pharyngeal region, and soon ejected it, never again taking that species into its mouth, would be slow to deny that fishes, and even very young fishes, have a memory. It is well known that fishes prefer certain kinds of bait to others, probably because they retain the pleasant sensations of former occasions. Thus it is that anemones are a fatal bait for cod, lob-worms and certain Nereids for plaice, the toothsome mussel for most marine fishes, and the stripe of silvery skin (like a young rockling

* In a letter to Dr. Urquhart.

or mackerel-midge) so eagerly sought by the mackerel. Muddy water, again, obscures the nature of bait, and misleads both observation and memory, so that a lure which would not so readily capture in clear water is now effective, because no suspicions are roused. On the other hand, the presence of phosphorescent organisms on a mackerel- or herring-net is said to prevent a successful haul.

In confinement the young of both cod and green cod recognise a figure approaching the tank in which they are fed, and so with flounders, dabs, gunnels, viviparous blennies, sea scorpions, and other forms. Their expressions are those of eager expectation as they glide forward, and some keep an eye on the surface of the water, and with a swift rush secure the food before the others have time to reach mid-water if they happen to rest on the bottom of the tank. There can be little doubt they remember what happened on former occasions. Similar actions are observed when the keeper approaches the trout in the ponds at Howieton. In swimming about in a tank with large anemones in full expansion, fishes, especially the smaller forms, avoid the dangerous tentacles of the "sea flowers," of which they have unpleasant experiences. Again, if adult cod are kept for breeding purposes in a large enclosure, and an attempt is made to capture them by a ring-net, they soon crowd, as Captain Danevig found, into the most remote corner, and thus, after the first examples, are difficult to secure. Functional differences, indeed, between this species and the green cod are noticed when only about three inches in length, for as they glide in company through the mazes of the tangles and other sea-weeds in the tidal pools, the former is much more shy and sensitive than the latter. The recollection of danger is further manifested by the shanny when it is approached as it creeps under the sea-weeds on a rock uncovered by the tide. It instantly leaps into its pool, and seeks shelter in a miniature cavern or recess under the sea-weeds.

Bearing these manifestations in mind, it does not appear improbable that when much harassed by trawls, by nets, or by lines, shoals of certain fishes gain experience which renders them less easily captured, and perhaps causes them to leave their wonted sites in the ocean for a time and roam elsewhere.

In nest-making and in the care of the eggs and young, memory is apparently present in certain fishes. The skill of the fifteen-spined stickleback, for example, is remarkable,

and its recollection of the spots where the sea-weeds best suited for its purpose are located is evident. The threads which the male secretes for binding the nest together are placed in no haphazard way, but are interlaced with the sea-weeds with some intelligence. The accuracy with which the male lump-sucker finds his particular mass of adherent eggs—of which he is the faithful guardian even to the rendering up of his life—is well known. Devotion which impels fishes to be almost left high and dry at low water, so that only a runlet bathes one side of the gills, is of no common type, and it is unfortunate that they so often fall a prey to the carrion crows and rooks which come to feed on the eggs they protect. If the male be removed to a distance from the eggs it will even flounder through shallow water till its snout impinges against its charges (the eggs).* It would be difficult for the male *Arius* to retain the large eggs in his gill-chamber if he did not always recollect they were there; indeed, he is somewhat more acute than those higher forms who search everywhere for their spectacles which are *in situ* on their noses.

The habits of the climbing perch, of the flying-fish, of the electrical fishes, and other forms indicate the same traces of memory. It is probably more than blind instinct which enables the three-spined stickleback to use its formidable spines in attack, or which enables the picked dog-fish and the "fire-flare" to inflict serious wounds with their weapons. The claspers of the male skate would not cut so readily if the animal, when seized, did not thrust the knife-edge out. The sword-fish knows the use of its spear-like snout, just as the saw-fish manipulates from experience its snout with the double row of tooth-like spines.

In connection with the fact that certain fishes return to a fresh lure while the old hook is fixed in the jaw, their sensibility has been the subject of remark. Thus sharks will return to their prey even when severely wounded, not perhaps from want of memory but from courage and voracity. The latter may also present nice discrimination in regard to hooks and lines. A porbeagle shark will pass along a fisherman's line, biting off the snoods with their attached haddocks to the number of a dozen or more, as if trained to the pursuit. Nor do the hooks appear to give inconvenience after the digestion of the fishes, being probably ejected by the mouth. It seems to have no unpleasant associations with this method of feeding. On the other hand, an adult porpoise, which has

* *Ann. Nat. Hist.*, August, 1886, pp. 81—84.

a brain more richly constituted than most mammals, trying the experiment for the first time, may be held by a single hook and captured, for its teeth are of less service in the case than those of the shark. A saithe (green cod) will chase haddocks as they are drawn to the surface by the lines so closely that fishermen will strike them with the "clip" (a kind of gaff), and it has happened that the hook of the gaff has parted from the handle and remained in the fish, which, nothing daunted, was captured by another gaff as it eagerly pursued the haddocks, and the broken instrument recovered. Gulls, indeed, show little more discrimination in regard to hooks and bait than fishes.

It would appear, however, that the voracity of sharks does not blunt their appreciation (and recollection) of a choice repast; for instance, when they fall in with a group of "green-bones" (*Belone*), as in the case of a male thresher or fox-shark, the stomach of which was filled with them; yet in our country the "green-bone" is by no means a common fish, a single example, as a rule, falling under the notice of zoologists at a time, though it enters the estuaries of certain rivers in numbers.

The extreme hardihood of certain fishes after injury must be borne in mind when doubts are thrown on their memories. Thus a full-grown female picked dog-fish was captured in the stake-nets for salmon some years ago with its stomach distended with food. In dissecting the apparently dead animal in the laboratory the heart pulsated actively, though it and the pericardium were covered with old and recent lymph, caused by the irritation of a large cod-hook, the point of which projected into the pericardium, and against which the heart seemed to impinge during contraction. An eel will live for a year or two with a hook projecting through the gut into the abdomen, and the glutinous hag (*Myxine*) is also hardy under similar circumstances.

Remarkable structures, it is true, are occasionally found in the stomachs of fishes, though perhaps not always swallowed at sea. Such things, however, occur so rarely in the life of the fish that experience is of little importance.

With regard to the absence of the cortex of the brain in fishes, this is probably only a question of degree—easily understood by referring to the descriptions and figures of the brain in the salmon and the wolf-fish.* Besides, who has proved that the function of memory depends on the brain-cortex of the human

* *Trans. Roy. Soc. Edin.*, vol. xxxv, part iii.

subject? I have seen many a curious case in the pathological room, the history of which would not have led us to this conclusion.

The Systematic Collection of Anthropological Data in Asylums.
By EDWIN GOODALL, M.D., Joint Counties Asylum,
Carmarthen.*

It is not my purpose on the present occasion to relate a series of observations. I merely desire to ask your attention to a field of work hitherto little cultivated, either abroad or in this country, especially the latter. I have not, indeed, come across any account from which it is to be gathered that anthropological methods—which are what I now refer to—have been adopted systematically in any asylum for any length of time, although of late such have been in use in certain asylums of America, and also of Italy. In respect of France and Central Europe I have no certain information; but I have not seen any notice in the journals of the speciality of the employment of these methods in the asylums of those countries. That the grosser stigmata of degeneration have been observed in the course of ordinary clinical work in asylums for some time, we are all aware. It is common to hear at clinical examinations that a particular case has a “narrow” or “sloping” forehead, a “flat” occiput; possibly we are at times more venturesome, and describe the head as “dolico-” or “brachy-cephalic” (our remarks thereby acquiring a certain *nuance* of scientific gravity). Or perhaps the palate is noted to be “arched” or “Gothic,” “semi-V-shaped” or “semi-saddle-shaped;” or the chin to be “receding;” or, employing a dramatic generalisation, we pronounce the patient to be of a “simian” type. I need not illustrate further, my object being simply to bring to mind the fact that it has for long been thought worth while to record conditions ascribed to imperfections of development. I pass to the representation that if it is worth while to record such conditions at all, it is proper that there should be some system whereby they may be recorded. There are pathological forms, as you are aware, in many asylums, on which systematic records of autopsies are kept; and if at

* Read by Dr. Bullen for the author at the Autumn Meeting of the South-Western Division, 1897.

some future period it is desired to ascertain with what frequency a particular diseased condition occurs, or whether the supposed significance of such condition is real, the accumulated facts are available for consultation. But if one desires to ascertain to what extent it is true that certain anomalies of palate or ear occur in the insane, or that they occur particularly in certain states of mental perversion, one looks in vain for records. And if, haply, observations on the point be forthcoming, what is their scientific value?

The theory of the "criminal born" has been severely criticised, in fact rejected by the majority of writers; though Lombroso has his followers, even beyond the confines of Italy. Nevertheless, the most irreconcilable of the opponents of the celebrated Italian criminologist might ungrudgingly recognise the value of his work in calling attention to the morbid heredity, the defective anthropological "make up," of many criminals, and thus claiming our serious consideration, and that of jurists, in reference to the question of irresponsibility amongst this class. The effect of such teaching is to "give us pause" ere we proceed summarily to explain the conduct of a criminal by invoking the influence of the environment; nor can punishment be prescribed for him off-hand, on conviction, without careful inquiry into his antecedents, if regard is to be had to considerations of humanity and justice. To this state of things Lombroso's work has contributed much. There is assuredly no likelihood of our overlooking the influence of heredity in the promulgation of *insanity*. But I conceive it is desirable to have a system by which we may be enabled to judge the anthropological status of each case coming before us by direct observation, aside from and independent of such history of hereditary instability as is obtainable. I have been especially struck with the desirability of such a scheme when compiling statistics for annual returns. I may be permitted to quote from observations made in a return of the kind which I lately had to draw up. It was there remarked—"In the last Report of the Lunacy Commissioners congenital defect is stated to have been noted in a proportion per cent. of 5·7 to the yearly average number admitted into asylums in general during the five years 1890 to 1894 (this for males; a lower proportion still for females). Without going further into this topic, I am strongly of opinion that a verdict of *minus habens* is returnable against a much larger number of the yearly admissions into county asylums than is represented by figures now avail-

able. There are degrees of congenital defect far short of imbecility, and a more critical examination of the cases of mania and melancholia would doubtless show that the acute insanity is merely superimposed on a congenital defect. We shall not know to what extent the mark of degeneracy was upon the inmates of asylums at their birth until, by the adoption throughout these institutions of a system for recording anthropological data, we obtain a mass of information relating to the frequency of occurrence in the insane of the stigmata of degeneration."

In many of the cases coming before our notice the evidences of defective physical formation and backward mental state are so marked that they cannot fail to arrest even superficial observation. But this consideration should not, in my view, cause us to rest content without subjecting these cases to the routine anthropometrical examination, the great object of which would then be to note the relationship between the degree of mental defect and the number and nature of the degenerative stigmata—*anatomical and physiological*—which are present. In other instances, however, our systematic examination would not merely enable us to correlate bodily and mental stigmata, but would reveal the existence, in the first place, of such physical stigmata which had escaped the ordinary examination. I refer to cases of mental disorder referable to some exciting cause deemed in itself sufficient prior to anthropological examination. Without the latter there is risk of our according to such *irritans* some of the influence which by right attaches to the *irritable*.

Apart from the propriety of studying the relationships between physical and psychical stigmata amongst inmates of asylums and cases submitted for private advice, with a view to a better understanding of the groundwork of any particular case, and so to a sounder forecast in respect thereof, there is the interesting speculation—which for many may have a mere academical interest—as to whether these degenerative signs indicate a reversion to type, whether they have atavistic significance. We are struck by the presence of a marked Darwin tubercle in the ear, and by its peculiar shape, by cranial deformity, by prominence of the facial over the cerebral portion of the skull, by peculiarities of teeth or lower jaw, and disproportionate length of forearm to upper arm; or there is pronounced prognathism, or the chin is lacking in prominence (it should project to a certain extent in front of the perpendicular in European

aces); how do the measurements compare with those which obtain in the lower races of mankind and in the anthropoid apes? If we compare anthropometrically our individual of the "simian" type to the gorilla, how near do they stand to each other? This is a phase of the subject which will doubtless be examined in the future. I here call to mind a patient in the asylum with which I am connected, an adult imbecile, whose parents, and brothers and sisters to the number of five, are all imbecile, mostly in a pronounced degree; it has often struck me that if this man's hair of trunk and limb were more in evidence, and he were photographed grasping a bough, it would need some scrutiny to distinguish him from a gorilla. I have not as yet taken his measurements.

It remains to be seen how far extensive observations will justify *a priori* opinions to the effect that the stigmata of degeneration in the insane are especially found about the cranium and face.

It is doubtless desirable that all persons should be examined on an uniform plan, but with many of the insane we cannot expect—by reason of the mental state—to get anything like complete returns. In asylums it must commonly be a question of eliciting the maximum possible out of a total of returns. The comparison with similar observations from gaols would doubtless be of much interest. The Bertillon system has lately been introduced in a modified manner into gaols in this country, with the object of identifying criminals and malefactors. My information from one of our leading prisons is to the effect that it is only applied there in a limited manner, for detection of recidivists. The object would not appear to be other than an immediately practical one. Only in the event of the authorities of prisons encouraging scientific work can we expect a scientific scheme for anthropological purposes to be adopted in prisons. I have for some time been of the opinion, which I have elsewhere expressed,* that the associated study of insanity and crime is desirable, having in view the relationship existing between these degenerations; and this study would be much facilitated by associating the asylum and gaol services, when the lunatic and the malefactor might be conveniently studied from a common anthropological basis.

Where the work undertaken is the anthropological exami-

* "The Associated Study of Crime and Insanity," *Lancet*, December 26th, 1896.

nation of the existing inmates of an asylum, in accordance with a scheme, it is clear that a laborious and time-absorbing task is contemplated. But I do not think that if each new case as admitted is examined—supposing the asylum to be adequately staffed—the undertaking will be particularly formidable. At any rate, a system for recording anthropological data, drawn up by Dr. Stearns, is in use in this manner in the Illinois Eastern Hospital for the Insane; and at San Servolo, Venice, Dr. F. Peterson, of New York, informs us cephalometry is systematically practised on every fresh admission. Dr. V. Giuffrida-Ruggeri has this year published a memoir upon the value of the signs called degenerative, in which I find incorporated the results of his examination of a large number of inmates of the Provincial Asylum of Rome. In fact, we shall probably find time for a special study of some one part of the organism, in addition to our work in accordance with the scheme. For thorough study of any part this kind of specialism is necessary. For example, Benedikt prescribes thirty-eight cephalometrical formulæ for thorough students; though probably in respect to the head the most trustworthy results are obtained by Rieger's system of measurement,* another thorough method, taking a good deal more time than the ordinary system. Experience induces me to think that the cases of the hard palate and the ear illustrate particularly well the need for special study. In the case of the ear, for example, the best scheme for examination is probably that of Schwalbe,† of Strasburg, whose chart contains thirty-four questions, of which not more than two or three could be omitted if one is to be thorough. As regards the palate, I have lately been engaged upon a method for its examination, based upon cast-taking; to work through this, supposing the cast to be ready, I find half an hour necessary.‡

If the inmates of asylums, or individuals of a private clinique, are to be examined anthropologically, we shall of course need a normal standard by which to judge, and I anticipate that experience will decide that it is best for asylum workers to get a normal standard for themselves, by the examination of asylum employés and of normal individuals from the asylum district; since it is very improbable that, as regards this country, any normal standard of the kind desired

* Dr. C. Rieger, *Eine Exacte Methode der Craniographie*.

† In the following Paper Dr. Lord submits a scheme for the ear, drawn up by him.

‡ *Journal of Mental Science*, October, 1897.

(indeed, it would be necessary to have normal standards for various districts of the country if we would conform as nearly as possible with accuracy) will be available, unless as a result of the work of the British Association in different parts of the country. Most county asylums would appear to be in a good position to carry out observations with the object of ascertaining the anthropological status of their admissions. The observations upon the insane and the surrounding sane would be made by the same persons, and the two classes of persons observed would be mostly from the same district from which the asylum draws. And I should judge that such series of observations might, in many cases, be collated with those of other asylums, especially neighbouring ones, with every propriety, for the purpose of accumulating a greater bulk of facts.

For the purposes of comparison and the accumulation of a mass of information, it is desirable that a uniform scheme of examination be employed by different observers, and this could only be drawn up by a committee chosen for the purpose. I should say that much requires to be done ere any such deliberation is possible. Individual workers must first proceed after their own schemes; after sufficient individual experience has been gained these can be considered, and a scheme for general use drawn up therefrom, by a properly authorised body. Of late I have been putting into practice a scheme drawn up after much consideration, and of necessity based upon the work of such standard writers as Bertillon, and Emil Schmidt of Leipzig. The difficulty is to limit the measurements and descriptions within reasonable compass, in consideration of the time at disposal, and yet to avoid the omission of observations which perhaps should have been made. Especially, I think, in regard to the extent to which it is desirable that measurements of the trunk and limbs, and of parts of these, should be carried, does uncertainty at present obtain. This will be resolved by experience. It is precisely on account of the lack of sufficient experience that I do not now present the scheme I follow. I shall be glad of the opportunity to compare it with the plan followed by any worker in this subject.

The Collecting and Recording of Descriptive and Anthropometric Data of the Ear in the Neurotic, Insane, and Criminal—a New Method. By JOHN R. LORD, M.B., Joint Counties Asylum, Carmarthen.

THE writings of Morel, Wildermuth, Binder, Gradengo, Vali, Frigerio, Eyle, Schwalbe, have familiarised us with several types of ear; and this, together with Bertillon's work, perhaps forms the bulk of our knowledge on the subject. Recently, in America, good summaries have been published by Meyer and Peterson.

It is not the intention of the present writer to write anything like an exhaustive paper on the subject. It is more to remind English readers, or perhaps bring before them in a preliminary way, an interesting branch of anthropology and anthropometry, and to state a new method of measuring the ear and of recording the same. This of necessity brings in the topographical anatomy of the ear, which needs be stated pretty fully, and in doing so several new and perhaps important features will be brought forward. As before stated, this is more a preliminary statement of a method to which I am working than an account of results obtained. I append also in a fairly complete manner the literature on the subject.

Before Schwalbe's recent paper the study of the ear was carried on in a very unsystematic way. Recently Schwalbe (in 1895) published a new scheme for collecting data in the form of a chart, which included measurements and various descriptive data. This was a distinct move in a right direction. It is only those who have devoted special attention to the ear who can thoroughly appreciate its many varied forms, and the difficulty in mapping out a series of measurements which can be applied generally.

The scheme to which I am working is largely Schwalbe's modified, and in my opinion improved. The descriptive part I have altered in several places, but only in a minor way. I have, however, deemed it insufficient, and have therefore added to it, as will be pointed out later. The measurements given by Schwalbe are, however, open to criticism. The chief objection is the lack of a definite *modus operandi*. The points from which he takes his measurements are not defined enough to base on them any accurate data. They may even be absent in some cases, and, further, the direction and relation to other measurements are in some instances not indicated. My object, therefore, is to bring these into line with Rieger's Craniography, or the new method recently described by Dr.

Goodall* for measuring the hard palate, with which he was good enough to associate me. The value of all anthropometric data depends naturally on their accuracy; and their practical side on their uniformity in all cases and comparison with a normal standard. The difficulty meets one here, as it has done before with regard to other data, *i.e.* the establishment of a normal standard. Bertillon's measurements may be satisfactory in France, but it is evident that they will not apply to this country. The time is now ripe for suggestions as to the establishment of normal anthropometrical data, not only of the ear, but of other parts of more or less equal interest.

It is not my intention to claim more importance for the ear, as showing neurotic and insane proclivities, above other parts, as the skull, palate, limbs, &c. It is quite clear to my mind that it is only from a more or less complete examination of the body generally, according to one of the many schemes now published, that one is justified in coming to the conclusion that a person is a lower type of being, and therefore more prone to mental disorder and criminality, and in whom, granting a mental disorder, the prognosis is rendered more serious. But I am of the opinion that it is only by a thorough study of isolated parts, such as ear, palate, &c., by methods which ensure accuracy and completeness, that a general scheme can be correctly built and normal standards fixed.

Before going on to describe the method, I wish to draw attention to the more important features in the topographical anatomy of the ear, of which a diagram (fig. 1) is appended. There is no one ear which shows all these features, some of which are common and others rare. It will be seen that the *helix* arises by the *crus helicus*, and runs in a curved direction to the lobule. For descriptive purposes it is divided into an *anterior upper part* and a *posterior part*.† The *crus descendens* passes from the *crus helicus* downwards posteriorly to the *external auditory meatus*. The *satyr point* is what the uninitiated would call the point of the ear, the real morphological point probably being *Darwin's tubercle*.‡ The *crura of the anthelix*, of which the number varies, join to form the *stem* and surround a fossa called the *fossa ovalis*. The most important of these crura is the *crus anthelicis superius*.§ The *crus anthelicis*

* *Journal of Mental Science*, October, 1897.

† Frequently small tubercles are seen on the superior and inferior edges of the *crus helicus*.

‡ When found it is on the outer margin of the *helix*, and is usually associated with the cercopithecus form of *Darwin's tubercle*.

§ Frequently the *stem* ends inferiorly in quite a marked prominence.

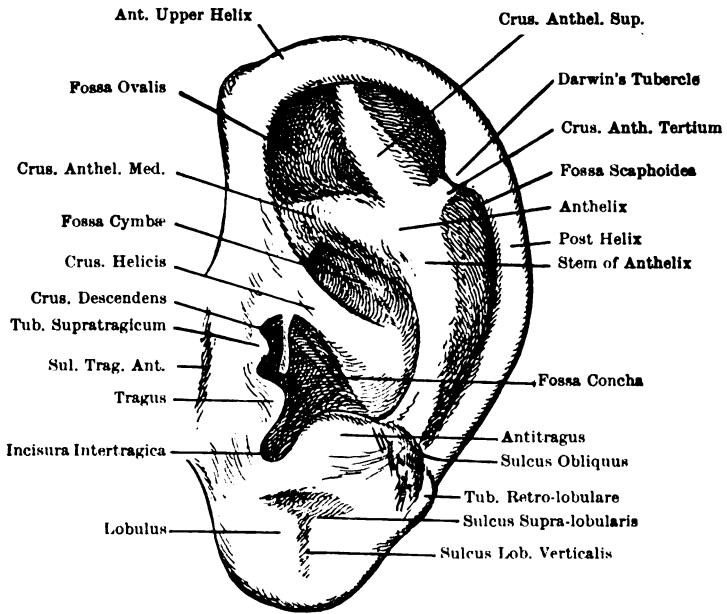


FIG. 1.—Diagram of Topographical Anatomy.

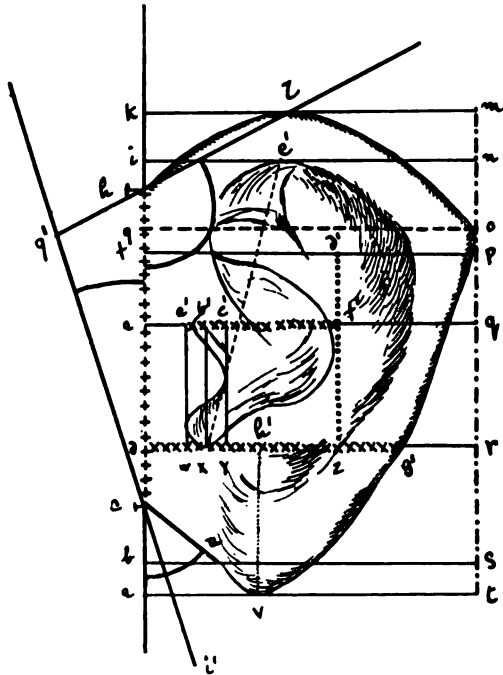


FIG. 2.

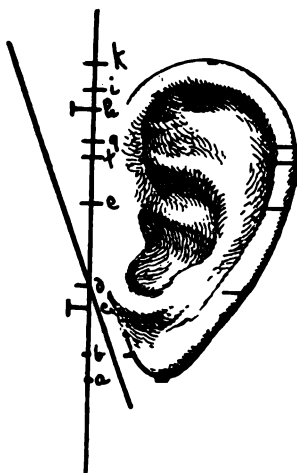
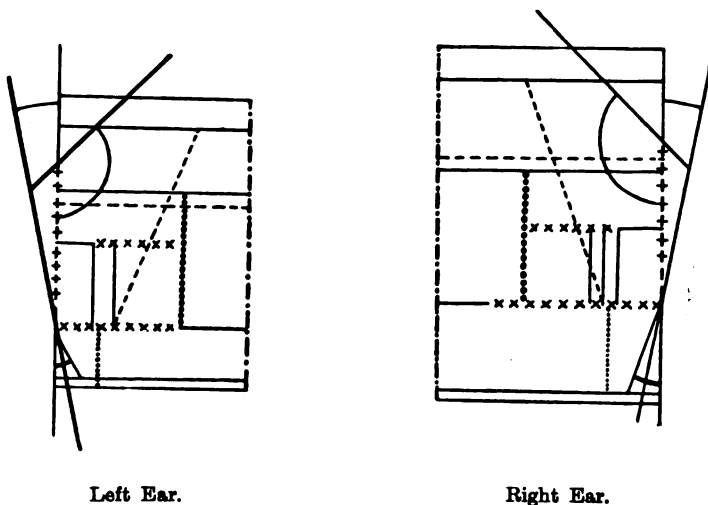


FIG. 3.



Left Ear.

FIG. 4.

Right Ear.

TO ILLUSTRATE DR. LORD'S ARTICLE.

tertium arises from the stem and proceeds upwards to Darwin's tubercle or near it, or to the anterior upper helix above. The *anthelix* ends at the *sulcus obliquus*, and is separated from the helix by the *fossa scaphoidea* and from the *crus helicis* by the *fossa cymbæ*, and forms the posterior boundary of the *fossa concha*.* The *fossa cymbæ* is really part of the *fossa concha*, except in some cases, and in measuring is reckoned as such. The TRAGUS has above it the *tuberculum supratragicum*, and at its junction with the cheek there is frequently a sulcus, which I have called the *sulcus tragi anterior*. Between the *tragus* and the *antitragus* is the *incisura intertragica*.† The *lobule* for practical purposes has a base at the level of the *incisura intertragica*. Between it and the *antitragus* is a sulcus called the *sulcus supralobularis*, while its surface is occasionally marked by a vertical groove called the *sulcus lobuli verticalis*.

Data as regards the ear are both anthropometric and descriptive. It will be convenient to first indicate the anthropometric method. This is a new method which I have devised, and which logically falls into two principal parts, viz. marking of the ear, and measuring and transferring to millimetre paper. Very little in the way of instruments is required. A skin or copying pencil flat on one side, a flexible rule, a pair of compasses, a small drawing set square, and millimetre paper complete the outfit.

The things to mark first are the base line and the perpendicular. The former is done with the pencil and rule, the position being the anterior limit of the insertion of the ear into the skull, minus the lobule, and limited inferiorly by the lowest point of insertion of the cartilage of the ear. The upper and lower limits are marked T (fig. 3, c, h). This line is continued upwards and downwards for a short distance. The perpendicular is got by suspending a short line to which is attached a lead weight, the patient being in the erect posture with eyes looking straight forward and the line passing through the lowest insertion of the cartilage (fig. 3, c). One might note here that to ensure accuracy of measurement the lead must be maintained in the erect posture throughout. Next is to place the short side of the set square on the base

* The *fossæ scaphoidea* is not uncommonly represented by two fossæ, one superior, one inferior, with a connecting channel.

† The *antitragus* consists of three prominences; a superior one arched in a vertical plane; an anterior one arched in a horizontal plane; and a posterior one which ought to be distinguished from the *tuberculum retrobulare*.

line, and to mark on the base line and on the ear the following, from above downwards (see fig. 3, *kilg.*, &c.), taking care not to move the ear in any way. The use of the set square makes these points necessarily at right angles to the base line. This requires a little practice to do correctly.

1. Highest point of ear (fig. 3, *k*).
2. Highest free edge of helix (fig. 3, *i*).
3. Greatest breadth (fig. 3, *g*—position varies).
4. Line of constant point for giving length of *fossa concha*, through intersection of *crus helicis* and middle *crus anthelix* (fig. 3, *f*).
5. Line of constant point for giving breadth of *fossa concha*, through highest point of *tragus* (fig. 3, *e*).
6. Line of base of *lobule* through lowest point of *incisura intertragica* (fig. 3, *d*).
7. Line of lowest point of lobular attachment (fig. 3, *b*).
8. Line of lowest point of *lobule* (fig. 3, *a*).

This completes the marking of the ear. One has next to measure these points, and to transfer to millimetre paper. This part is very simple and needs no description, as a minute's study of fig. 2 will convey everything. In this way one arrives in a constant and definite manner at the following measurements (see fig. 2) :

1. Greatest length of entire ear.
2. Greatest breadth of entire ear.
3. Length of ear-base without lobular attachment.
4. Length at fixed points of *fossa concha*.
5. Breadth at fixed points of *fossa concha*.
6. Breadth of lobular base.
7. Greatest length of *lobule*.
8. Distance between lowest point of *incisura intertragica*, and the highest free edge of *helix*.

The whole process can conveniently be termed aurigraphy. Schwalbe gives a measurement from the bottom of the *incisura intertragica* and the highest point of the ear. I fail to see any importance in this, and have therefore omitted it, and put in its place what I judge to be a very important measurement of the complete shell of the ear, namely, that from the bottom of the *incisura intertragica* to the highest point of the free edge of the *helix*. Schwalbe also gives a measurement from the upper point of the *tragus* to *Darwin's tubercle*. No doubt this is important, and the right one for the morphological index; but the fact of *Darwin's tubercle* being frequently absent or poorly indicated destroys its value. For

the morphological index I therefore use the measurement before indicated (fig. 2, x, e').

It will be seen that I have altered the base-line somewhat, and restricted it to the insertion of the ear *minus* the lobule. I have thought it advisable to exclude the lobular attachment, because the latter varies so much, and thus causes too much variation in the morphological index.

I have made much fuller the insertion of the ear by indicating three angles, viz.—

- i. Angle between base-line and perpendicular (fig. 2, g, c, k);
- ii. Angle of the *helix* (fig. 2, l, h, a);
- iii. Angle of the *lobule* (fig. 2, a, c, v);

and the shape of the base, whether straight, concave, or convex. The degree of convexity or concavity can be recorded by moulding a thin strip of lead and tracing it. Where Bertillon's instruments are used his small calliper rule can be used in place of the compasses. If deemed too cumbersome (and I think it is) for a general scheme, the millimetre paper can be omitted, the ear being simply marked and the measurements taken and written down.

The various indices are arrived at as follows :

Length-breadth index of head . Breadth \times 100.

Physiognomic index of ear . . . $\frac{\text{Length.}}{\text{Breadth}} \times 100.$

Morphological index of ear . . . $\frac{\text{Base} \times 100.}{\text{Distance between bottom of } \textit{incisura} \text{ and highest free edge of helix.}}$

It is obvious that very abnormally shaped ears will need special measurements. These ought to be taken on the same plan as those already given, *i. e.* from definite points. With this method the vertical and transverse measurements can be multiplied indefinitely.*

The descriptive data remain to be taken. The chart indicates these fairly clearly. It will be seen that I have altered Schwalbe's table in one or two places, and have deemed it insufficient in other, and have therefore supplemented it. Further, I have omitted several points as being unnecessary. The chief additions are in connection with the tragus and the

* Experience shows me that the ears move in a slow rhythmical manner in some people. This should be noted or the measurements will be fallacious.

various fossæ, the latter being in Schwalbe's table completely omitted. The various sulci may be represented by more than one; if so, it should be noted.

The only manual part with regard to the descriptive data that needs mentioning is in connection with the stem of the *anthelex* as regards retraction, prominence, &c. Bertillon's method can be adopted here with advantage. It is as follows:—Place a lead pencil against the *tragus* and *posterior helix* in a horizontal plane, and note whether the *anthelex* touches it or is away from it, or prevents the pencil from resting on the post-helix.

It is impossible to draw up a chart in which there is a place for every point. The chart given suffers, if at all, from overcrowding from a practical point of view. A chart three or four times its size could easily be drawn up. To complete the method photographs can be taken, but this is not essential. It is more desirable in cases of hæmatoma auris. Any special peculiarity can easily be sketched in on the diagram, and with sufficient accuracy, seeing that the most important landmarks are already indicated. Special descriptions, &c., must be written in on the margins of the chart, and in the space specially provided.

It is plain that ears deformed by disease, such as hæmatoma auris, are not available for comparison with others. As before stated, these should be photographed, and as near life-size as possible, the photograph being added to the chart in place of the aurigraph.

Fig. 4 shows two aurigraphs, illustrative of marked asymmetry, commonly known as Blainville's ears. I shall be happy to supply a few charts to any one interested.

In conclusion, I have to acknowledge my indebtedness to Dr. Goodall for much kindly encouragement and advice.

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ive Data of the Ear.

Quality.	Birthplace.	Heredity.	For other signs of degr. see		
Length-breadth Index of Head.	Physiognomic Ear Index.		Morphological Ear Index.		
			R.....	L.....	
			R.....	L.....	
L.	ANTITRAGUS.			R.	L.
	Direction of upper margin (horizontal, 1; medium, 2; oblique, 3).....				
	Inclination outwards (absent, 0; medium, 1; pronounced, 2).....				
	LOBULUS AURICULÆ.				
	Attachment (prolonged on cheek, 1; simply adherent, 2; partially separated, 3; free, 4).....				
	Sulcus supralobulare (absent, 0; medium, 1; marked, 2; connected with scapha, 3).....				
	Sulcus obliquus (absent, 0; only in anti-tragal region, 1; complete, 2).....				
	Tuberculum retrolobulare (absent, 0; medium, 1; marked, 2).....				
	Sulcus lobuli verticalis (absent, 0; medium, 1; marked, 3).....				
	Direction of lobule (bent inwards, 1; straight, 2; bent outwards, 3).....				
	Lobule split (split, 1; not split, 0).....				
	,, (thin, 1; medium, 2; fleshy, 3).....				
	FOSSÆ.				
	Concha (too large, 1; too small, 2).....				
	Scaphoid (absent, 0; present, 1; continued on lobule, 2).....				
	Cymbæ (absent, 0; medium, 1; well marked, 2).....				
	Ovalis (absent, 0; medium, 1; well marked, 2).....				
	Various unclassifiable peculiarities as regards accessory ears, fistula auris congenita, hairiness, movements, &c.				

FOR AURIGRAPH OF LEFT EAR.

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*Certain Physical Signs in Melancholia.** By W. H. B. STODDART, M.B., B.S., M.R.C.P., Pathologist to the Lancashire County Asylum, Prestwich; late Clinical Assistant at Bethlem Royal Hospital; late Resident Medical Officer at the National Hospital for the Paralyzed and Epileptic, Queen Square, Bloomsbury.

THERE is but one important preliminary to my paper. It is that I wish to take this opportunity of expressing my most sincere thanks to the medical officers of Bethlem Hospital (Dr. Percy Smith, Dr. Hyslop, and Dr. Craig) for their great kindness and courtesy in putting every facility in my way while I was making the following observations, for the interest which they took in my work, and for the valuable suggestions which they so willingly afforded me from time to time.

It is now nearly a quarter of a century ago since Kahlbaum described the symptom-complex, which he called and we now know as Katatonia. This is a form of alternating insanity, in the melancholiac stage of which there is a secondary alternation. Rhythmical forms of movement and of speech alternate with rigidity and mutism. The rigidity, as Kahlbaum further pointed out, affects mostly the muscles of the neck and shoulders.

I now wish to draw attention to the fact that rigidity of this nature is not confined to cases of katatonia. It also exists in, as I think, all cases of melancholia to a greater or

* Read at the General Meeting of the Medico-Psychological Association, November, 1897.

less degree; but it is especially marked in severe cases of the disease, and especially in those cases in which there is an element of stupor.

Now, if the nature of this rigidity be examined more closely, it will be found that it is most marked in the muscles of the trunk and neck, that it is less marked but very strikingly present in the muscles of the shoulders and hips, that it is again less marked at the elbows than at the shoulders—less marked at the wrists than at the elbows, and that it is practically absent from the fingers. Similarly the rigidity is less marked at the knees than at the hips, very slight at the ankles, and again practically absent from the toes.

In order that my premises may be clearly understood, I repeat that rigidity of this nature is discoverable in all severe cases of melancholia. It has appeared to me that it is most marked in those cases which suffer a large amount of mental pain, while it is difficult to detect in slight cases of the disease.

It will be observed that this rigidity is of a nature the converse of that which occurs in ordinary cases of hemiplegia, where it is more marked at the fingers than at the wrist—more marked at the wrist than at the elbow, and more marked at the elbow than at the shoulder. Similarly in hemiplegia, the rigidity is more marked at the toes than at the ankle—more at the ankle than at the knee, and more at the knee than at the hip.

It will be convenient for the sake of brevity to refer to this latter form—the form which occurs in ordinary hemiplegia—as peripheral rigidity, and to that form which I have described as occurring in melancholia as proximal rigidity.

In making observations upon this point it is merely necessary to grasp the limb and move it about, taking it segment by segment. For example, in the case of an arm, the elbow would first be grasped, the upper arm moved about on the trunk, and the amount of rigidity observed. The forearm should then be grasped, alternately flexed and extended upon the upper arm, and the degree of rigidity compared with that observed at the shoulder. The hand should then be moved upon the forearm, and so forth.

Two fallacies must be avoided, both of which are dependent upon the patient's attention being attracted to the observation. The first is that he may voluntarily resist the movement, and the second is that he may, on the other hand, so to speak, acquiesce in the attempts to move the

limb, and move it himself in what appears to him to be the desired direction, thus masking the rigidity.

I look upon this rigidity as being more or less universal in the melancholiac, affecting also the bilaterally acting muscles; for example, among details, I regard the wrinkling of the forehead as rigidity of the frontales muscles.

My reasons for believing this proximal rigidity to be a true physical sign of melancholia are—

- (1) That it does not occur in other forms of insanity.
- (2) That it disappears from the patient as he gets well.
- (3) That voluntary rigidity is of the peripheral type.

This is best observed in a resistant child.

Since rigidity is frequently associated with paralysis, one naturally endeavoured to ascertain whether there was any weakness of movement at those joints where the rigidity was most marked. This paralysis, I think, I have detected. There is very little weakness to be detected in the elbow or wrist movements, but if such a patient as I have described be asked to hold his hands straight above his head, he has difficulty in doing so; and it will be observed in extreme cases that the upper arm is not nearly held vertically, and that the elbow is not quite fully extended, even when the utmost persuasion is used to get the patient to assume this attitude. This symptom has again seemed to me to be most marked in those patients who suffer a large amount of mental pain, especially if associated with an element of stupor.

As a corollary to this observation, I have another one, which is this. There are usually in a large asylum one or two female melancholiacs who can be induced to knit or sew, but who cannot be induced to do housework; on the other hand, it is rare to find a patient who is willing to do housework but unwilling to perform the fine movements of knitting or sewing. It is difficult to make many observations on this point; because there are usually cogent reasons which demand that the patient must be put to one or the other, especially the disposition to suicide. Patients who are willing to perform the grosser movements of housework, but unwilling to knit or sew, are generally people who never did knit or sew. The observation of this paralysis has previously been put in other ways; I am now merely putting it in a new light. For instance, it is an old observation that the attitude of the melancholiac is one of general flexion. I now submit that this attitude, which is also seen in senility and in paralysis

agitans, is an attitude of weakness, or in other words of slight—very slight—paralysis. There is, at least, paralysis in effect. Again, the melancholiac patient will himself tell us that he has difficulty in doing things, and Dr. Bevan Lewis bases his hypothesis with regard to melancholia entirely on this symptom. There is, as he puts it, failure in the muscular element of thought.

The condition is one of very slight double hemiplegia, and hence it would be expected that there should also be weakness of the bilaterally acting muscles. The tenderness, if I may so speak of it, of the melancholiac to noise is probably due to weakness of the *tensores tympani*, and I hope to show, in a subsequent communication, that the indistinctness of vision of these patients, by which people—for instance—look dead to them, is due to temporary weakness of accommodation.

Kahlbaum also described, in the melancholiac stage of katatonia, a diminution of the normal number of nictitations of the eyelids, and also a diminution of the amplitude of the movements of the chest in ordinary respiration. I have been unable to confirm these signs either in katatonia or in melancholia; and, indeed, I should not expect to find them. These movements are involuntary, and are not therefore of cerebral initiation; they are movements relegated to a lower level of the nervous system. I might expect weakness of the power of voluntarily screwing up the eyelids and of voluntarily taking a deep breath, but not of involuntary nictitation and respiration.

In the explanation of these phenomena I make use of a principle first enunciated on theoretical grounds by Dr. Hughlings Jackson, and subsequently confirmed by direct observation by Dr. Bevan Lewis. I refer to the fact that movements at the large joints are represented in the cortex by large cells, and movements at the small joints by small cells. This is now well established.

It will be best at this point to digress for a moment to consider a mathematical fact as regards solid bodies. Taking a sphere for example, it will be remembered that the content varies as the cube of the diameter, while the surface varies as the square of the diameter. The practical bearing of this is that small bodies have a larger surface relative to their content than large bodies, although of course they have a smaller absolute surface. This is why a small body cools so much more rapidly than a large body. Similarly, the large

cells of the cortex have a smaller relative surface than the small cells.

It seems likely that some affection of these cells would account for a rigidity and paralysis which affects the joints according to their size, and again it would appear right to suppose that the change is metabolic in its nature rather than structural. Further, it is obvious that such a metabolic change must depend either on intrinsic changes within the cell itself or on changes in the environment of the cell. If we suppose some change in the environment of the cell (for instance, anæmia or some toxin circulating in the blood or lymph), the small cells would be affected more than the large cells, because they have a greater relative surface exposed to the deleterious influence. Under such circumstances the rigidity would affect the small joints more than the large joints,—that is to say, it would be of the peripheral type. Such rigidity occurs in the second stage of chloroform anæsthesia, where we have a poison circulating in the blood. I have made several observations on this point. But we have already seen that the rigidity of melancholia is of the converse or proximal type. Let us, then, suppose what appears to me to be the only other alternative, that the cells of the cortex contain within them some deleterious substance, some effete product of their own metabolism. In such a case it is clear that the large cells would be more affected than the small cells, because the large cells have a smaller relative surface from which to get rid of their products of metabolism. And this agrees with my observation that the rigidity affects the large joints more than the small joints. I submit, therefore, that in melancholia the cells of the cortex cerebri fail to some extent in the excretion of their metabolic products.

Having arrived at such a conclusion, it was in the natural order of things that, as a physician, one's thoughts should next be directed to the investigation of the effect upon the melancholiac of those drugs which have the property of causing cells to excrete their metabolic products. There is one drug, viz. pilocarpine, which we know to have this property *par excellence*. Pilocarpine is a very appropriate drug to try, because it acts, as Langley has shown, upon the cells themselves, and its action is not to any great extent dependent upon modifications of the circulation or upon the innervation of the cells.

Accordingly, observations were made on the effect of pilo-

carpine on melancholiacs in two ways; to wit, by the administration of infusion of jaborandi by the mouth, and by the subcutaneous injection of pilocarpine.

In these observations one discovered the very striking and remarkable fact that melancholiacs are exceedingly tolerant of this drug, or, in other words, that they react very feebly to pilocarpine.

After gradually increasing doses, four patients were treated regularly with 4 ounces of the infusion three times a day, and in one case four times a day (*i. e.* 16 ounces in the twenty-four hours), and yet the reaction to the drug was practically *nil*. The skin was scarcely more than comfortably moist; salivation was not perceptibly increased, nor was there any marked contraction of the pupil. The only control observation was made upon myself, in whom a single dose of 2 ounces of the same infusion caused profuse perspiration and salivation.

In the above cases, too, the mental effect of the drug appeared to be practically *nil*. K. W—, the patient who had 16 ounces in the day, a case of melancholia attonita, was being artificially fed at the time. She was more excitable on each of these occasions than when she was not under the influence of the drug, and she used unparliamentary language, which, again, was not her wont when she was not under the influence of jaborandi. Otherwise these patients were quite unaffected. As regards the rigidity, it seemed to be very slightly, if at all, relieved.

The next series of observations was made with hypodermic injections of pilocarpine— $\frac{1}{3}$ gr. of the nitrate on each occasion. As it was desirable to have some form of measurement by which the reaction of cases of melancholia might be compared with that of other cases, and also among themselves, I devised the following method. Discs of ordinary Swedish filter-paper were used. One of these was placed upon the patient's back between the shoulders, and covered in with a piece of ordinary gutta-percha tissue, such as is used for covering in fontanations. The gutta-percha tissue was held in place over the disc of filter-paper by means of strips of lead plaster strapping. The object of covering the paper in this way was, of course, to prevent evaporation. It was then noted what interval elapsed between the time of the injection of $\frac{1}{3}$ gr. of nitrate of pilocarpine into the arm of the patient, and the time when the disc of filter-paper was uniformly just saturated all over with moisture.

The results of the control observations were as follows :

In the case of patients who had not had an injection of pilocarpine the paper remained comparatively dry at the end of several hours. About twenty cases were observed under these conditions.

Five control observations were made in the other direction ; three on cases of acute mania, one on a case of anergic stupor, and one on myself. Of these the shortest interval was in my own case, in which the paper was saturated in two and a half minutes ; and the longest was in the case of stupor, where it was three and a quarter minutes. The cases of mania took about three minutes on each occasion. In all these cases the perspiration was very profuse.

Twenty-six observations were made on cases of melancholiacs. None of these were of more than twelve months' standing. In five of these cases the paper was still comparatively dry after an interval of two hours. At the end of this time one of the patients was sick.

The following are the times for the other patients :

	<i>Min.</i>		<i>Min.</i>		<i>Min.</i>
M. C.	10	J. C.	4	Miss B.	9
K. W.	11	Mrs. F.	10	Miss K.	13
J. L. C.	10	B. E. J. H.	10	Mrs. P.	12
A. E.	9	Mrs. Why.	3	Miss H.	17
R. P.	12	Mrs. Wly.	10	Mrs. J.	19
E. R.	16	Mrs. B. (saliv.)	26	Mrs. J.	10
Miss P.	11	Miss C.	10	Mrs. C.	21
A. F.	12				

Leaving out, of course, the cases in which there was no reaction at all, the average of these numbers gives about twelve minutes as the time for reaction of a melancholiac to $\frac{1}{3}$ gr. of nitrate of pilocarpine as against three minutes for other people.

With regard to the case in which the paper was saturated in three minutes, it is only fair to state that the original diagnosis was acute mania, and although the patient developed melancholic ideas subsequently, she was still incoherent and deficient in self-control. This case suggests that the reaction may possibly be useful as a help in diagnosis.

Before proceeding farther, let us here pause for a moment to consider the pharmacology of pilocarpine. As Langley has shown, pilocarpine is a drug which acts upon the cells themselves, causing them to excrete their products of metabolism. Binz, of Bonn, came to the conclusion that this drug acted through the influence of the nervous system.

The difference between the results of these two observers depends upon the difference of their methods. Langley paralysed the nerve-endings by means of, if I remember rightly, nicotine, and noted the action of pilocarpine there and then; while Binz waited for divided nerves to degenerate before making the observations. The obvious result of this latter method was that the cells degenerated before the effect of pilocarpine was tried.

Coupling, then, my observations with those of Langley, my conclusion is that in cases of melancholia the cells of the tissues throughout the body have their function of excretion diminished. I have already pointed out how the nature of the rigidity in melancholia leads to the same conclusion *quâ* the cells of the cortex cerebri.

And if we review the symptomatology of melancholia I think it will be agreed that it is in accordance with this view of the pathology of the disease.

The diminution of the quantity of saliva and the furred tongue indicate diminution of the buccal secretions. The indigestion and loss of appetite with consequent refusal of food are more than probably due to insufficient secretion of the digestive juices.* The constipation may be also explained on this hypothesis, although the partial paralysis—to which I have already referred—probably plays an important part. It is certain that the fæcal accumulation of the melancholiac is excessively deficient in moisture.

A striking example of this deficiency of secretion is further afforded by puerperal cases. Those who are attacked with insanity within the first week or so after parturition are usually cases of mania, and it is frequently necessary in these cases to treat the patient with belladonna or potassium iodide to arrest the secretion of milk. But those who are attacked later than this usually become cases of melancholia, and with these it is noteworthy that the secretion of milk is arrested by the disease, and at the time when the secretion is normally at its height. In those institutions where the breasts are treated by merely squeezing out the milk before a fire, the nurses always have more trouble with the breasts of maniacs than with those of melancholiacs.

The urine is also diminished in quantity in melancholia, but this probably has no bearing on my point. Most of the constituents of the urine have merely filtered through the

* In this connection *vide* Dr. Greenwood's paper in the January number of *The Journal of Mental Science*.

glomeruli of the kidney from the blood into the Bowman's capsules. Very few of the constituents are of the nature of a true secretion; that is to say, they are not built up by the cells of the kidney before excretion. And those constituents which are formed in this way (hippuric acid, for example) are so variable in quantity under normal conditions that it would serve no useful purpose to estimate them in the melancholiac. The fact that the quantity of urine is diminished in the melancholiac is, I imagine, merely due to the fact that he does not drink so much as a healthy individual.

I will refer to but one other symptom, viz. the amenorrhœa. Amenorrhœa is very much more common in melancholia than in other forms of insanity. In the consideration of this interesting symptom the question arises as to whether it is the part played by the maturation of the Graafian follicle which is at fault, or whether it is the part played by the uterine mucous membrane. I am inclined to think that most physicians would ascribe the amenorrhœa to failure of the changes which normally take place in the ovary at the time of menstruation, but it is a point which remains to be scientifically settled. It seems to me that light might be thrown on this question by the study of cases of melancholia which begin shortly before marriage. These cases are not very infrequent, they are usually classed as post-connubial insanity; but closer inquiry into the history often reveals that there were some symptoms of insanity before marriage.

In looking up some past records I came across notes of thirteen cases of this kind; but in not one of them was the menstrual history sufficiently detailed to throw any light upon this point.

It must be admitted that we are here rather trespassing upon unknown land; but if the fault were proved to be at the Graafian follicle, and if the maturation of the follicle be of the nature of a secretion (as I am inclined to think it is), then this symptom is also to be explained by the pathology which I have suggested.

In submitting the above pathology it is not to be understood that I suppose these metabolic changes in the cells to be the cause of melancholia, nor do I suppose the mental changes to be the cause of the physical. Here, as in the domain of normal psychology, I adopt the view of psycho-physical parallelism. All that I submit is that the physical changes which I have described go on *co et par* with the psychical

changes. What the nature of the connection is between the two I do not know, and it would open up too wide a question for discussion were I to enter upon this point here.

Similarly it would be opening up too wide a question if we were to discuss whether these physical changes in melancholia are mere exaggerations of what occurs in physiological melancholy (as is quite probable), or whether they are limited to the conditions of disease.

In conclusion, gentlemen, I must thank you for the kind and patient manner in which you have listened to what I have had to say. I cannot ask you now to discuss the merits of my observations on the nature of the rigidity and paralysis, or on the pilocarpine reaction. The value of these observations must depend entirely upon their confirmation or denial by other observers.

I hope, however, that I may have the great advantage of your friendly criticism of my deductions and conclusions. These may be right or wrong; but should the observations be confirmed, they cannot but add to the data from which some abler mind than my own may some day present us with a real advance to our knowledge of the constitution of mind in health and disease.

Discussion.

Dr. MERCIER—To me, sir, this paper is a very interesting one indeed. It is a very remarkable fact that this peculiar distribution of the rigidity which Dr. Stoddart has noticed is precisely the distribution that I assigned many years ago to certain other phenomena, but especially to rigidity in certain conditions. He terms it proximal and peripheral; I called it centrifugal and centripetal. There are certain phenomena, and especially there are certain rigidities, which begin at the periphery, in the fingers, and are most marked in that position, and which diminish as we approach the trunk and the bilaterally acting muscles. There are certain other rigidities again which are most marked in the great muscles of the trunk and the neck, and which diminish as we go towards the periphery. It is a corroboration of the correctness of Dr. Stoddart's observations that the rigidity he has noticed follows a classical order; because, as he has stated, it is most marked in those muscles which follow a natural order and in which rigidities have been observed to occur before. I have no doubt that he is perfectly correct in putting down the transverse corrugation of the forehead to the extension of the rigidity to another bilaterally acting muscle. He did not mention the condition of the masseters. Now I have always found in these rigidities which I call centrifugal, that is to say, which are most marked in the great trunk muscles and diminish towards the periphery, that the muscles of mastication are associated with the muscles of the trunk; whereas the muscles of the lips and the muscles of articulation are exactly at the diametrically opposite end of the scale. I have not noticed whether the masseters and other muscles of the jaws are rigid in melancholia, although now that Dr. Stoddart draws one's attention to it, it becomes manifest to one's mind that this rigidity does exist in cases of melancholia, and especially in cases of stupor. We have all noticed it, but not with that vividness of perception which has enabled us to give the importance to it that Dr. Stoddart clearly has. Then with regard to his explanation, it is

impossible for me at present to follow him in all his conclusions, but I would point out that his description of the rigidity is that it occupies a certain definite region in a certain definite order, and that that particular order and region are complementary to another order and region. Then he puts this down to certain changes or certain want of changes in the cells. My explanation was a very different one. My hypothesis is that the movements in which the smallest muscles—the fingers, the lips, and the movements in articulation—take the lead, and are, as it were, the great motive of the movement, are cerebral movements. They are produced by the action of the cerebrum; and that the movements which are first and last, the movements of the trunk, the neck and masticatory muscles, which gradually spread, if they spread at all, away from the trunk towards the smaller muscles, are cerebellar movements. That the cerebrum and cerebellum represent movements of the body in two opposite orders, the cerebrum representing them from the smallest muscles to the greatest, and the cerebellum in the opposite direction. A classical illustration of a wave of cerebellar influence is observed in yawning. When we yawn the trunk straightens out, the masticatory muscles are thrown into movement, and gradually the wave spreads to muscles that are smaller and smaller, and further and further away from the centre of the trunk. Although the attitude assumed is not the same, this is the order in which the muscles are affected in the rigidity which Dr. Stoddart has described to us. The fact that this rigidity that he has observed does follow precisely the order, which is a classical order, and has been observed in very many rigidities, I think goes very far indeed to speak for the accuracy of his observations. As to the explanation that he has given, well, it may be correct or not. My explanation is that I believe in melancholia the cerebral influence is weakened, and when this is so the cerebellar influence is proportionately strengthened. Hence, the due balance not being maintained, the cerebellum overacts, and produces too great rigidity of the muscles which it most prominently supplies. This may be the correct explanation, or Dr. Stoddart's may be the right one; but in any case we must recognise that the observation of rigidity occurring in melancholia is very important, and one that is very likely to meet with important results.

Dr. CONOLLY NORMAN—I hardly feel competent, sir, after the remarks made by Dr. Stoddart and by Dr. Mercier, to discuss the deeper aspects of this question, or, as I might call them, the speculative aspects. There are, however, certain clinical facts that suggest themselves. We were told by Dr. Stoddart that the rigidity in melancholia occurred in a certain order, and that fact I am not prepared to dispute. I have no doubt that Dr. Stoddart's observations are more accurate than any I have ever made on the subject, and that he is in a general way correct, but rigidity in cases of melancholia is not unknown in the fingers. Not unfrequently in such cases, if the patients be neglected, the fingers become permanently rigid. Now he has spoken of a certain degree of paralysis which accompanies this rigidity, and he speaks of testing the patients by making them elevate their hands straight over their heads. I am not quite clear that this is a sufficient test by which we could say that the larger muscles of the arm and shoulder are paralysed, because we all know that the muscular system in cases of extreme melancholia is, to use a very slipshod clinical word, relaxed, and no doubt weakened, sometimes absolutely wasted; but this is a general nutritive change, and could hardly be classed as paralysis in the strict sense of the word. With regard to wrinkling of the forehead, the explanation is that it is due to a condition of tension in the frontalis muscle. If that is so in melancholia, does that explanation cover the wrinkling of the forehead which is a familiar indication of mental trouble in the physiological state? There is something further than the mere engagement of a certain portion of the brain. With regard to the state of the respiratory movements, it is a very old observation, and I have many times confirmed it clinically, that the respiratory movements in melancholia are feeble and shallow. One also certainly

sees diminished nictitation. Cases are on record, and I remember one case which I could not distinguish from melancholia, in which the flies used to drink the accumulated secretion out of the corner of the patient's eye without producing winking. Now this is obviously diminution of reflex action, and is probably not due to any changed condition either in the cerebral or cerebellar cells. Similarly the general diminution of all the secretions must be connected with some general cause not merely due to change in particular brain cells. There is another matter upon which I should like to say a word or two. When I read the title of Dr. Stoddart's paper it occurred to me that he was about to mention that very curious condition that we are all familiar with in melancholia agitata, which is hard to fit in with any of the theories that we have heard about the condition of the brain. May be there is an explanation that does not occur to me. In the state to which I refer there is a tendency not only to general large movements, which are, of course, not very common in melancholia, but that tendency to small movements which I am in the habit of describing to my class as small pseudo-purposeful movements. A patient takes his dress and picks it thread by thread to pieces, as if he had some task to accomplish. The movement, though apparently voluntary, is, no doubt, to a large degree to be considered as an involuntary, perhaps I might almost say an automatic movement; and this condition of the muscular activity is one which I cannot reconcile with Dr. Stoddart's theories regarding the conditions in melancholia which he has described. It is, however, a condition which one clinically sees, and which needs to be accounted for in any theory which deals with the general muscular condition in melancholia.

Dr. JULIUS MICKLE—I understand the reader of the paper to say that a condition of rigidity exists in all cases of melancholia. That is a statement I should not be willing to allow to pass in this Association without raising a dissentient voice. The muscular condition of cases of melancholia varies so much that it is impossible to accept rigidity as the universal condition of the muscular system in that particular affection. It all depends upon the kind of melancholia—the clinical form it takes. There is a form in which rigidity is the chief symptom. One has been accustomed to point this out to students, and to show them that the most significant and most characteristic feature of that rigidity is the difficulty in raising the bowed head, the muscles of the neck being so strongly contracted.

Dr. STODDART—It is my misfortune and my fault that I have not read Dr. Mercier's work on the subject. I feel sure that anything written by him would throw much light on the subject, and it is no matter for great surprise that both Dr. Mercier and myself have turned to the fertile brain of Dr. Hughlings Jackson to obtain our explanations of the rigidity and the paralysis. The explanation of influx from the cerebellum* and complementary influx from the cerebrum is, of course, exceedingly likely, but it seemed to me that the pilocarpine experiments and also the general observations of the secretions throughout the body point to the same conclusions as I have arrived at from the observations on the rigidity. Further, the result of clinical observation goes to show that proximal rigidity occurs if cerebellar influx be cut off, and peripheral rigidity if cerebral influx be cut off. On Dr. Mercier's hypothesis, therefore, the muscular conditions associated with melancholia are referred to cerebellar mischief. This, I submit, is not probable. With regard to the masticatory muscles, I am afraid I have not come to any conclusion. I have tried to observe whether there was any rigidity of these muscles, but it is very difficult to notice without inducing resistance on the part of the patient. Of course I quite agree with Dr. Norman that rigidity of the fingers does occur, but what I maintain is that the rigidity there is nothing like so marked as higher up the limb. If

* In this connection *vide* Horsley and Löwenthal's paper (*Proc. Roy. Soc.*, . 1897).

the rigidity be greater at the fingers than it is higher up the limb, then I should conclude that there was something more than melancholia. I entirely avoided discussing the question as to whether melancholia was a mere advance upon physiological melancholy. With regard to the movements of small joints in melancholia agitans, I think it quite agrees with the explanation which I have attempted to set forth, namely, that the finer movements are still at work, while the grosser movements are more or less paralysed and rigid. Rigidity is present in cases of melancholia agitans, for while the movements are going on in the fingers it will be noticed that there is sometimes a certain amount of rigidity in the movements of the shoulders and elbows. With regard to the constancy of the rigidity, as I have said before, in the very slight cases of melancholia it is extremely difficult to observe. I think if Dr. Mickle makes the observation in the same way that I have done he will find that rigidity almost constantly varies *co et par* with the severity of the melancholia.

*Alcoholism and Suicidal Impulses.** By W. C. SULLIVAN, M.D.,
and Stewart Scholar, R.U.I., Deputy Medical Officer
H.M. Prison, Liverpool.

THE important part played by alcoholism in the causation of suicide has been abundantly recognised by all observers of both these social phenomena; and so far as debate now touches the question, it is merely to deal with points of detail.

In the present slight contribution to one such detail of the subject I have endeavoured to show, by the analysis of a series of cases of alcoholism associated with suicidal tendencies, in what mode and under what special conditions the intoxication determines the development of these tendencies. For this purpose I have utilised, with the kind permission of my colleagues, the clinical records of 142 cases in which persons have been charged in the Liverpool police courts with attempting to commit suicide, and have been sent on remand to Walton prison, where they have been subject to medical observation. As the practice of so remanding prisoners charged with this offence is almost invariable, the figure named represents practically the total number of futile attempts at suicide in the city of Liverpool during the period of eighteen months covered by the records.

I shall first submit in detail the analysis of these cases, and subsequently discuss the inferences which they seem to suggest.

(a) *Proportion of cases due to alcoholism.*—Of the 142 cases, 64 (45·1 per cent.) were in males, 78 (54·9 per cent.) in

* Read at the General Meeting of the Medico-Psychological Association, February, 1898.

females. Divided according to the influence of alcohol in their causation, they give this result :

	Males.		Females.		Total.
Non-alcoholic ...	10 (15·6 %)	...	22 (28·2 %)	...	32 (22·5 %)
Alcoholic ...	54 (84·4 %)	...	56 (71·8 %)	...	110 (77·5 %)

The proportion of non-alcoholic cases, if incorrect, errs on the side of excess, for I have reckoned in this category all those cases in which no positive evidences of the drink-habit were obtainable. In some of these cases an element of alcoholism was extremely probable, and even in the small number of instances where it could be definitely excluded in the individuals, it may have exercised an influence through the ancestry.* The two following observations are suggestive from this point of view.

(1) Female aged 21, domestic servant of good character, attempted suicide by poison ; no distinct motive beyond momentary lack of work. Both parents in asylum, suffering from chronic alcoholic insanity.

(2) Female aged 19, hard-working girl of good character, attempted suicide by drowning ; no cause assigned beyond depression, owing to quarrels between her parents. Father and mother confirmed drunkards.

(b) *Influence of alcohol in actual and in attempted suicides.*—We may probably regard 77·5 per cent. as a fairly correct estimate of the proportion of cases of attempted suicide to be attributed to alcoholism. Since we have no means of determining a corresponding local formula for the alcoholic influence in actual suicides, we are forced to fall back upon general estimates of the factors of suicidal ætiology. In different countries and with different observers these estimates show considerable variations. In England Mulhall† attributes to alcoholism about 12 per cent. of suicides ; Brown puts the figure at 13·7 per cent. The statistics of Brierre de Boismont and of Lunier for France give somewhat similar results.‡ In extremely alcoholic countries the proportion is naturally higher ; thus in Sweden, before the legislative restrictions of the drink traffic, the alcoholic contribution to suicide amounted (1851–5) to the enormous figure of 65·5 per cent.§

Even if we assume that the above-cited estimate of 12 per cent. for England is somewhat under the truth, there will

* Sollier, *Du Rôle de l'Hérédité dans l'Alcoolisme*, Paris, 1899.

† *Dict. of Statistics*, 1892.

‡ Quoted in Morselli, *Il Suicidio*, 1879.

§ Baer, *Der Alcoholismus*, 1878.

yet remain a very marked contrast with our figures, suggesting that the proportion of cases due to alcoholism is considerably higher in the category of unsuccessful than in that of actual suicides. Such a result is not surprising, in view of the fact that nearly 80 per cent. of the attempts by alcoholics were made in a state of actual drunkenness, when the power of more elaborate co-ordination was to a large extent in abeyance, and where, moreover, the accompanying symptoms of the alcoholic condition would probably draw attention to the actions of the individual. Moreover in a certain number of cases reckoned at attempts at suicide the self-destructive impulse aborts, owing either to the development of a profounder degree of intoxication or to some sensory impression, real or hallucinatory, diverting the attention. In several of our cases this is clearly seen.

(3) Female aged 40, chronic alcoholic; father, brother, and two sisters also drunkards. Found asleep on the bank of the canal; recollected being very drunk and going to the canal to drown herself, because the idea "came over her;" could not assign any other motive.

(4) Female aged 48, notorious drunkard. Found at the dock with her boots off, talking to the water; was drunk, and could recall nothing of the incidents, but had expressed the intention of suicide. Probably prevented from following the impulse by some auditory hallucination referred to the water.

(5) Female aged 34, chronic drunkard; made an attempt on her life three months previous to present attempt. Went to the dock, took off her clothes, and put them into the water; was very drunk at the time; remembered having the idea of suicide, and going to the dock to drown herself; could not explain her subsequent conduct.

(c) *Frequency of suicidal attempts compared with assaults as results of alcoholism.*—If we assume, according to our observations, that 77·5 per cent. of cases of attempted suicide in this city are due to alcoholism, then of the 117 such cases recorded in Liverpool for the year 1896, 90 would be assigned to this cause.

In the same year 6146 persons were apprehended in a state of drunkenness, which in 712 cases was associated with violence against the person, thus giving a proportion of 7·91 cases of assault for 1 case of suicidal tendency; or, expressed in percentages of the number of drunken persons arrested, in 12·4 per cent. the intoxication was associated with acts of

violence, in 1·4 per cent. with suicidal tendencies. It is to be noted that this proportion is arrived at by the analysis of statistics regarding drunkenness, and not alcoholism; in statistics dealing with alcoholism suicidal attempts reach a much higher proportion.*

(d) *Sexual incidence.*—Of the 110 cases of attempted suicide which were due to alcoholism, 49 per cent. occurred in men, 51 per cent. in women. This predominance of females is in striking contrast with the facts of sexual incidence observed in connection with actual suicides. Thus in Morselli's statistics the maximum proportion of women suicides in any series of years for England and Wales is 28·2 per cent., the maximum in any European country 28·8 per cent. Comparison with local statistics of actual suicides shows conformity with the general law; thus in 1896 the proportion of women amongst suicides was 33 per cent. The fact that this proportion is a little in excess of the average figures for the country doubtless depends in part on the local prevalence of the drink habit. As we have seen that alcoholism is the overwhelmingly predominant cause of futile attempts at suicide, it is not surprising to find that the analysis of the total number of attempted suicides in the last five years shows that 50 per cent. of the attempts were made by women, a sexual preponderance similar to that which we have observed in considering our alcoholic cases.†

(e) *Condition at the time of the attempt.*—Classified according to their alcoholic condition at the moment of the attempt, our 110 cases divide thus:

		Males.		Females.
Sober	...	16	...	7
Drunk	{ Memory retained	17	...	16
	{ Amnesia	21	...	33

According to these figures 79·1 per cent. of the attempts were made in a state of actual drunkenness. Our figures are too scanty to allow any other inferences; but it is interesting to observe the progression of the numbers, especially in the case of women, when classed as in this table, according to the three conditions of sobriety, drunkenness with and drunkenness without memory,—conditions which, in their relation to suicide, may possibly correspond with degrees of

* Serré, in observations on 1500 cases of alcoholic insanity at Ville Evrard Asylum, noted 'suicidal tendencies in 12·86 per cent., assaults in 14·46 per cent. (*Th. de Paris*, 1896).

† In the five years 1892–6 there were 548 such cases evenly divided between the sexes. I am indebted for these figures to the courtesy of the Health Constable of the City of Liverpool.

chronicity in alcoholism. Of the 16 cases in which alcoholism in men determined suicidal tendencies without immediately antecedent excess, in 10 instances the suicidal attempt was associated with a state of subacute alcoholic insanity with its characteristic delusions and hallucinations. None of the 7 cases amongst women presented these symptoms.

(f) *Age*.—Classing our cases according to age, we get this result :

	Males.			Females.		
15—25	10	...	...	15
25—35	22	...	...	20
35—45	12	...	...	12
45—55	9	...	...	6
Over 55	4	...	...	3

Thus the decade 25—35 shows a very decided maximum, more decided in the males than in the females, in whom the preceding decade is also well represented. In contrast with this result, the maximum period for male suicides in England (Morselli) is the decade 45—55, for females 35—45. The significance of this fact will be discussed later.

(g) *Chronicity of alcoholism*.—In a large majority of the cases the patients gave a history of alcoholic excess extending over a considerable period prior to the suicidal attempt; taking an average of their statements, the duration of this pre-suicidal stage would be from five to seven years; in only three cases was the alleged time less than one year, and in one of these cases outside evidence and the presence of well-marked symptoms proved the alcoholic habit to be one of old standing. I give a summary of the notes of the two other exceptional cases :

(6) Female aged 23, domestic servant. Attempted suicide by strangulation while drunk. No memory of the act. States that she began to drink six months ago, taking chiefly whisky. Denies hereditary taint; defective intelligence; facial asymmetry; internal strabismus. On admission suffering from acute gastritis with hæmatemesis; had visual hallucinations for a few nights. This patient made a precisely similar attempt seven months later.

(7) Female aged 18, domestic servant. Attempted suicide by throwing herself into the dock. No memory of the act committed immediately after she had taken a large quantity of raw spirit; no domestic or other troubles; states that she had never previously taken any alcoholic liquor. Intelligent, physically healthy; no evidence of alcoholism, no hereditary taint.

I have not encountered any other case in which suicidal impulses have developed quite early in the alcoholic history under the immediate influence of an acute intoxication. This fact is the more curious seeing that cheap whiskey, rich in amylic alcohol, is the principal intoxicating agent in the population from which our cases are drawn.

Except in determining approximately the duration of the drinking habit, the testimony of the alcoholic, even when given in good faith, is practically valueless, and we are accordingly forced to rely upon another class of evidence, namely, the symptoms of chronic intoxication.

All our cases, with the single exception to which I have referred above, presented in marked degree a number of such symptoms, variously combined,—ovarian irritation, gastric catarrh, tremor, hallucinations of sight, nightmare, insomnia, cramps, and hyperæsthesia of the calf muscles, amblyopia, colour scotoma, cutaneous hyperæsthesia of the lower extremities.

With regard to the majority of these symptoms, their relation to alcoholism is sufficiently established to leave no doubt of their diagnostic value. A word of explanation is, however, required in reference to the ovarian irritation; by that is indicated a symptom similar to the "ovaric" in hysteria;* there is pain, spontaneous and on pressure, in the iliac region on one or both sides, with corresponding pain under the breasts, and on vaginal examination the ovaries may frequently be found enlarged and tender. This symptom is, no doubt, of common occurrence from other causes; but when it is encountered in the absence of hysteria, anæmia, and local disorders of the genital organs, when even to the observation of the patient its development and aggravation are influenced by her drinking habits, and when, above all, it disappears or decreases with abstinence from drink, we are fairly entitled to regard it as an effect of alcoholism, which we know to be in fact among the most potent causes of chronic ovaritis (Matthews Duncan). This symptom, which is present in most of our chronic drunkards, its severity corresponding with the chronicity of the poisoning, was found in nearly all the suicidal alcoholics whom I examined.

(h) *Heredity*.—The existence of insanity (certified) in immediate relatives was ascertained in four of the 54 males who enter into our statistics, and in three of the 56 females: these numbers are probably below the facts, as in the special

* Charcot, *Leçons sur les Mal. du Syst. Nerv.*, Paris, 1877.

circumstances there would be an obvious interest in concealing an insane taint. Two of our male cases and three of our female cases were the subjects of epilepsy antecedent to their alcoholism.

Our cases were not all examined as to the existence of an alcoholic heredity; but, so far as the observations go, they show such a taint in at least one half. None of our cases were dipsomaniacs.

(i) *Previous attempts*.—In the cases of three males and six females previous suicidal attempts were recorded—in one case three such attempts, in another two. The interval of time between the attempts varied from twenty-one years to three months.

(j) *Mode of attempt*.—Classified according to the method employed to carry out the impulse, our cases give this result:

	Males.	Females.
Drowning	11	25
Poison	11	14
Hanging	6	4
Strangulation	3	7
Cut throat	21	5
Other means	2	1

These numbers are obviously too small to base any conclusions upon.

After this brief examination of our cases it remains to inquire how far the results obtained serve in any measure to explain the psychological process which issues in the suicidal impulse.

From this point of view, the fact of highest importance is the almost constant relation between the development of the impulse and the chronicity of the alcoholic poisoning.

In chronic alcoholism the special and constant psychical condition is a dementia, variable in degree according to the intensity of the poisoning and the antecedent level of mental development. But this dementia does not in the majority of instances present itself in the pure form, as a progressive diminution of the functional activity of the brain; it is coloured by a variety of symptoms of a more active kind in the intellectual and affective spheres.

In the production of these secondary symptoms a large part is to be referred to the extra-cerebral influences of the poison. Obviously lesions of the digestive and circulatory systems interfere in some measure with the nutrition of the brain, and in this manner reinforce the direct effect of

alcohol upon that organ. But apart from this mode of action there is another, from the psychological point of view more important. The more or less generalised disorder of function, which alcohol tends to produce in the entire economy, has as its psychical counterpart a profound alteration of the "ego." In the cerebral representations of the body which form the basis of the personality, the vaguely felt pleasurable nerve currents of normal function are replaced by more or less defined sensations of strongly negative tone, expressive of disordered action. The influence of these visceral states upon thought and feeling becomes proportionally greater as the brain grows more enfeebled and the higher forms of mental life disappear.*

There is, of course, in this psychic change nothing peculiar to alcoholism: all the intoxications which cause diffused organic troubles at the same time that they degrade mental function have a similar tendency to produce melancholic alterations of the personality; in morphinomania,† in lead poisoning, in pellagra,‡ the typical psychic condition is one of depression.

It is, however, in alcoholism that the reaction of the somatic disorders on the emotional and ideational life is seen most clearly and most frequently. Extreme instances are furnished by cases of typical alcoholic insanities; it is enough to cite the delusions of poisoning associated with gastric troubles, the delusions of electrical persecutions associated with involuntary motor discharges, the delusions of recent muscular actions in the immobilised victims of multiple neuritis, &c.

In the earlier stages of alcoholism, when the mental change does not yet amount to actual insanity, the alteration of the personality is seen more on the affective side, in the suspicious, irritable, gloomy character which is distinctive of the chronic toper. At the root of this disposition lie the same organic troubles that in higher degree determine the delirious thoughts and acts of the alcoholic lunatic; the changed

* Cp. similar process in dreams determined by morbid organic sensations. Ribot, *Maladies de la Personnalité*, 1897, p. 27; Maury, *Le Sommeil et les Rêves*, 1862, p. 75.

† Ziehen, *Psychiatrie*, Berlin, 1894.

‡ It is interesting to note that this disease, in which, if the dominant lesions are nervous, they are yet extra-cerebral, is associated with strong suicidal tendencies. Morselli, *op. cit.*, p. 398, estimates that in the decade 1866-76, 30 per cent. of suicides from mental disease, or about 16·5 per cent. of all suicides in Italy, were due to pellagra.

nature is the expression of general somatic disorder reflected in an enfeebled brain.

It is in this stage of the alcoholic evolution, with distinct physical signs of the intoxication, that we find the large majority of our would-be suicides; a bout of drunkenness removes the last traces of the higher restraining functions, the "ego" is reduced to the mass of sensations of negative tone, and the conditions for the development of the suicidal impulse are realised.

In a large proportion of cases, as we have seen, there is complete amnesia of the act, and even considerable difficulty on the part of the individual to understand how he came to entertain the suicidal idea. In other cases, though the memory of the act is vague, the suicide can recall a state of consciousness preceding the attempt, when he felt in an undefined manner that life was a weariness to him, or that some precise misfortune made existence insupportable. The misfortune which depressed feeling seizes upon in these cases is frequently remote, and even to the alcoholic's dull sense of proportion preposterously trivial: one individual, a chronic drunkard of eight years' standing, tried to hang himself because he had failed to sell five shillings' worth of race cards; another, a woman of fifteen years' alcoholism, attempted suicide because she was "low-spirited" owing to the death of her mother, which occurred several years previously, and the memory of which never preyed upon her unless she was drunk. These cases form a transition to the group where some external moral impression—a quarrel with a neighbour, a difficulty about money, &c.—determines the act in a state falling short of actual drunkenness; and last of all we reach the cases where the act occurs in the absence of all immediately antecedent excess, under the influence of the melancholia developed by the chronic intoxication.

Though the organic troubles determined by alcoholism in all these cases are generalised in character, and, indeed, owe to that fact a large part of their influence, yet it is natural to suppose that the mode and degree in which they react upon the psychic life may differ considerably in the case of different organs. As Maudsley observes, "it is conceivable that all the visceral organs have their several relations with modes of feeling, as definite and constant in character as the relations which the special senses have with modes of thought."*

* *Pathology of Mind*, 1895.

We are not in a position to assign to the different viscera their relative degrees of action upon the psychic life. We know, however, that in the emotional sphere the generative functions exercise an influence, the importance of which it would be difficult to exaggerate. This fact—of familiar and universal recognition—touches very nearly our subject; for as the generative organs seem to have a peculiar susceptibility to alcoholic poisoning, it naturally suggests itself that disorder of their activities may be a large element in the negative emotional state in which the suicidal impulse takes its origin.

In the examination of our cases this idea finds support in several directions, and serves to explain some of the curious contrasts which we have noted between the general statistics of suicide, and our observations of the suicidal impulse in alcoholism. Thus the greater tendency of women alcoholics to suicide, contrary to the law of sexual incidence for suicides in general, is readily explained when we consider, on the one hand, the special liability of the ovaries to suffer in chronic drink poisoning; and, on the other hand, the predominant rôle of the generative function in women. The same influence of disordered sexual function would explain the marked contrast between our observations and the general statistics of suicide with regard to the period of life, showing the maximum development of the suicidal tendency. For our alcoholics of both sexes, as we have seen, that period is the decade twenty-five to thirty-five, while for the general mass of suicides it is a decade later in women, and two decades later in men. But this earlier age is precisely the period of intensest reproductive activity, when the sexual instinct exercises its greatest sway over the personality,—when, consequently, its disorder might be expected to react most potently upon the mental life. One further observation may be added in the same sense, though I have not yet examined a sufficient number of cases to justify my offering it as more than an impression. It is that the suicidal act very frequently coincides with or follows some process, physiological or morbid, which temporarily emphasises the sexual function. In several female alcoholics—I cannot yet give numerical expression to the proportion—the attempt was made during a menstrual period; in several others the suicidal tendency showed itself first at the menopause, which occurred, as is frequently the case in alcoholism, at a comparatively early age. In the male a corresponding mode of influence is less easy to determine; in some of our

cases, however, the act may have been influenced by painful emotions associated with the recent development of impotence; in a few instances sexual excesses and acute venereal disease were noted. Lastly, as bearing closely upon the subject, may be cited the tendency to delusions and hallucinations of sexual content which characterises the alcoholic insanities in both sexes.

Conclusion.—The inferences suggested by these observations may be summarised in the following propositions:

1. The suicidal impulse associated with alcoholism rarely appears until the intoxication has attained a certain chronicity.

2. In a very large majority of instances the chronic alcoholic makes the attempt during a bout of drunkenness; and in considerably more than one half of such cases there is amnesia of the act.

3. In the suicidal alcoholic the chronic intoxication expresses itself, on the one hand, by a variable degree of dementia; on the other, by generalised disorders of function—these disorders of function in viscera which furnish the organic basis of the personality determine a depressed emotional tone, from which the suicidal impulse takes its origin.

4. The generative organs, especially in women, are peculiarly susceptible to the alcoholic poison, and their disorders play a very important part in producing these emotional alterations of the personality which precede and determine the suicidal tendency.

Discussion.

Dr. YELLOWEES said that the statistics on which Dr. Sullivan's conclusions were founded were exceptional as to district and at least somewhat contradicted his general impression as to the relationship between alcohol and suicide. He gathered that the 142 cases were from the police court in Liverpool, and represented attempts of suicide charged as such. One had to fall back on his own experience, and he confessed that the association between alcohol and suicide had never seemed to him so marked as the statistics given by Dr. Sullivan would make it, and some of his conclusions seemed to be rather too definitely deduced from that special, limited, and somewhat exceptional series of cases. He should say that suicide was not very often associated with alcohol, and that when a drunken person destroyed himself it often was because he did not know what he was doing. Many of these cases had no real suicidal impulse or intention, but simply did some stupid, drunken act, which happened to be a fatal one. Then there were other conditions very properly alluded to in the paper. For example, that many a suicide occurred during the menstrual period was a far wider fact than the paper indicated, and the fact that many of the suicides occurred at the climacteric period was also of wider significance than the paper made out. There was climacteric melancholia, which came on independently of any special and recent alcoholic indulgence; but he was in the habit of

distinctly recognising as a type of this melancholia that was a kind of judgment on the individual for former abuse of alcohol, and which developed at that particular period of life. That was a form of insanity they were all more or less familiar with, and it was not to be attributed to the direct and immediate effect of alcohol. The paper was full of suggestions, and it would be a shame if, in a gathering like that, it were allowed to pass without discussion.

Dr. URQUHART said it was rather startling to hear from Dr. Yellowlees that alcoholism and suicide were not closely connected. When he received an alcoholic case it was present in his mind from the beginning that the person was likely to endeavour to do away with himself. It would never occur to him to modify the strict injunctions to the attendants in charge in respect of the care with which such person should be observed.

In answer to a member who desired to avail himself of Dr. Sullivan's large experience to ascertain whether the practice was to regard cases as insane or criminal in connection with attempts at suicide, Dr. SULLIVAN said the majority of them are discharged after a caution in the police court when the medical adviser testifies to the fact that the act has been simply an impulse of alcoholism, and not due to any permanently chronic insane condition. There is a certain small proportion who are alcoholic lunatics, and they are sent to the asylum, but certainly 90 per cent. are discharged in this manner, and are rarely prosecuted unless they offend again in the same way, in which case they are occasionally proceeded against.

Dr. JONES said they had had a most interesting paper, and he did not think from the prisoner's aspect they often got much of the psychological side. It struck him that amongst persons of both sexes coming into an asylum the most marked alcoholic cases occurred at or about the climacteric, the time at which other things, such as the effects of syphilis or influenza, made themselves manifest, an age when there seemed to be an easier disturbance of the physiological balance between waste and repair than at any other.

Dr. ADAIR said he would like to add a few remarks in support of Dr. Sullivan's paper in regard to Sheffield. The facts seemed to be borne out as regarded the patients they got from the district. Their experience there was that chronic alcoholics were more or less suicidal. At that asylum they always gave the nurses and attendants special instructions with regard to constant observation. As to the pathological conditions, "hobnail liver," &c., seemed to be particularly rare in that district, at all events.

Dr. YELLOWLEES.—I don't want to be misunderstood. It is entirely true, as has been said, that acute alcoholic cases need care, and are anxious cases, but what I should like to hear definitely is this,—are these cases, as a rule, distinctly suicidal? Are suicidal attempts in such cases frequent? I have not found it so in asylums, and I should like very much to know what the experience of other men is who receive more of such cases than I do.

Dr. CROCHLEY CLAPHAM.—Are they suicidal on account of the alcohol, or because of the deprivation of it? You don't often find a hobnail liver. Well, a hobnail liver means a spirit drinker, but you get an alcoholic liver from beer drinking, which means an enlarged liver of quite a different character. But that does not indicate that there has not been any alcoholic indulgence.

Dr. STEWART said he generally divided the few cases he had into two classes. As a rule he found that an alcoholic suicide had hallucinations separate from melancholia. But after a short time they got better, and were not under supervision as suicides. They still had hallucinations, but such a case was very different from the ordinary melancholic who was always under supervision.

Dr. RAY said it would be interesting if they had a short analysis of the method adopted in attempting the act of suicide. A man walking alongside a river is seized by a sudden impulse to throw himself in, and did so without thinking of consequences; whereas an acute melancholic would meditate for weeks until he got an opportunity of committing suicide.

Dr. POWELL said he was of opinion that the vast majority of suicides were not really suicidal acts. Only last week he had a man in his charge who cut his throat in an alcoholic frenzy. A minute before he had not the slightest idea of doing anything of the kind, but he did it apparently not knowing what he was about. It was not an act of real suicide, although it was a suicidal attempt.

The PRESIDENT said his experience was that many cases of acute alcoholism were exceedingly suicidal, and many of them succeeded in destroying themselves in an alcoholic frenzy at home where there was a lack of supervision. That could be easily understood, because they laboured under such terrific hallucinations of sight and hearing that they were driven in sheer terror to do terrible things.

Dr. SULLIVAN, in replying, said Dr. Yellowlees seemed to think that the figures he had quoted were not sufficient for him to base the deductions which he had drawn. In his opinion, however, the percentages were markedly predominant, and therefore numerically sufficient to allow of the conclusions being drawn. Probably in reading the paper he did not express himself clearly, and Dr. Yellowlees had misunderstood him. The very cases he proposed to particularly treat of were those of alcoholic impulse unassociated with anything else. He had set aside all cases of pure accident. A very small proportion of the cases they saw under the circumstances mentioned were committed in the early stages of alcoholic delirium. Very few of the cases developed ordinary alcoholic instincts. Very few of the men had alcoholic hallucinations. There were those who had made suicidal attempts on a real impulse, and it was because he thought there must be some reason for the impulse that he thought the cases were worth analysing. In his opinion there must be some explanation for the fact that the impulse to a suicidal act rather than any other should develop, not on the first or second intoxication, but when the intoxication had lasted a considerable length of time. As for what had been said respecting the influence of the menstrual period upon the suicidal impulse, many of these people had passed through a great many menstrual periods before they made the suicidal act, and therefore, said Dr. Sullivan, I am entitled to my inference when any comparison is made between the chronicity of the alcoholic and the menstrual period, and their respective effects on the mind of the subject. He had treated the question of the alcoholic suicidal impulse as distinguished from other influences. He had pointed out the mode of attempt and the degree of deliberation, but the numbers are hardly sufficient to allow of any deduction. With reference to the physical signs found in alcoholics, they are signs of influence on the nervous system, and the ovarian sensation is to be regarded as a nervous affection. As to the hyperæsthesia of the muscles and the visionary effects, very few of our cases in asylums present these grossly morbid changes, and very few present marked signs of chronic cirrhosis.

Penal Servitude and Insanity. By A. R. DOUGLAS, Deputy Medical Officer, H.M. Prison, Portland, late Assistant Medical Officer, East Riding Asylum and Royal Albert Asylum, Lancaster.

In this paper I propose to consider the questions which this subject involves, chiefly from observations I have made upon convicts in this prison.

One constantly reads and hears statements to the effect that individuals undergoing penal servitude are thereby prone to

engender forms of mental disease. In an admirably arranged statistical table in his report for the year 1897 Dr. Herbert Smalley, H.M. Medical Inspector of Prisons, proves such a statement to be wrong, and that our prisons "are not manufacturingories for the production of lunacy."

It may be interesting to endeavour to show—by devoting a little attention to the "material" which is subjected to the penal environment—how undeserved is this accusation.

For the sake of brevity I shall consider criminals in two divisions—the first offender and the recidivist. On taking a man from the former class, we may find that he is one who prior to his conviction occupied a good place in society, and filled a position of trust. Such an individual has felt the disgrace of his trial and condemnation keenly, and in the early days of his imprisonment has beyond doubt suffered from depression. It must be borne in mind that we are going on the assumption that this man was of normal mental balance on his conviction. Given, then, that this individual is of sufficient mental calibre to have enabled him to take up to the time of his arrest a fairly successful part in the battle of life, it is absurd to suppose that this depression should deepen in intensity and become acute mental pain, or that a maniacal condition should supervene. This depression is, in my opinion, "normal," and is not of sufficient duration to act prejudicially upon the mind; besides, I shall presently show that the prison discipline itself affords as few facilities for brooding and introspection as could reasonably be expected under the circumstances.

A convict, then, who is a first offender, begins working out his sentence by a term of separate confinement. During this term he does not languish in his cell, as one occasionally hears, with nothing to occupy his attention and to keep him from introspection and brooding over his trouble. Labour of a light description and easily learnt is provided for him, and he is allowed the privilege of reading suitable books, together with regular and sufficient open-air exercise. The individual under consideration, whom we have assumed is a man of average mental stability, very soon finds that his normal depression gradually wears off; the discipline of the prison enjoins that duties shall be performed, and exacts due observance of the regulations; the predominant feeling now in his mind is to make his prison life as little unpleasant as possible by attention to work and amenability to discipline. He knows that if he is industrious he will earn a certain

number of remission marks, which, if none are lost by bad conduct or laziness, will shorten his sentence within certain limits. Later on comes a change in his prison life, and he marches out to labour with a party on public works, or is put to learn a trade.

In numerous cases a convict's labour is congenial to him, and he often evinces lively interest in his work. He attends the services in the chapel, and is visited by the chaplain. He is also allowed to correspond with and receive letters and visits from his friends at regulation times, provided his conduct merits these indulgences. He has easy access to the medical officers should he wish to consult them. After he has completed his term of separate confinement he is thoroughly examined by the medical officer, who decides for what class of labour he is physically fit. No convict is put to labour for which he is, by reason of any infirmity, unfitted, and he can at any time obtain a change of work upon showing sufficient grounds.

A first offender is, by the Star Class system, kept strictly separate from those habituated to crime, and it is difficult to over-estimate the advantages of this. I shall only quote one, which is relevant to the subject of this paper, and one which I have repeatedly heard spoken of appreciatively by several Star Class convicts themselves, that, inasmuch as whilst keenly sensible of the degraded position in which they have placed themselves, they yet feel that their future is regarded in a more hopeful light, and that they are not counted as utterly damned. From this many derive considerable mental comfort and assuagement.

So much for the first offender, of which class I have purposely instanced as example a man of education and superior social position.

To this man penal servitude is at first terrible indeed, not because his prison life is a hard one, but because of the keen sense of degradation aroused in him by his surroundings during the early days of his incarceration. That this keen sense of degradation amounts to depression, which is present for some short period in a subacute form, I think there can be no doubt, but its duration and degree of intensity is not great enough to operate detrimentally upon a normally constituted mind. It has also been urged that protracted separation from his family and business must exert a prejudicial influence upon the mind. I would contend that it is highly improbable that a man free from mental heredity,

and having already taken his share of responsibility in the struggle for existence, should not accept his position, and, under adverse circumstances, adapt himself thereto. I further contend that it would not be at all unreasonable to believe that in certain cases where there is an hereditary tendency to insanity the quiet routine life of the prison with its freedom from excitement would conduce, if anything, to exempt the individual from the risk of an attack.

We will now consider the recidivists, which are of a type very different from the one just described; and in order to correctly estimate the mental effect of imprisonment upon such, it is necessary to know something of their conditions of life outside the prison walls. Emile Gautier, in one of his chapters, remarks that such men see the world in two aspects, either as an immense gaol or a huge brothel, and to a certain extent this is true. The child is father to the man; from their earliest years they have been surrounded by vicious influences, the example of immorality, drunkenness, and crime set by their parents or friends, their earliest recollections being those of squalor, filth, and vice, and their daily contamination from almost every source of moral pollution whilst mere children, all contribute to mould the character of the individual at present under consideration. He may be a boy of twenty years of age, who, after having done several short periods of imprisonment, we now find working out a term of penal servitude; or he may be forty years older and doing his third, fourth, or even fifth sentence in a convict prison.

Havelock Ellis believes that imprisonment is for this class of criminal their normal condition, liberty being their holiday, during which, when not engaged in actual crime, they wallow in debaucheries of every kind.

A noteworthy and constant attribute of their character is a constitutional laziness almost amounting to inertia; they are well-nigh incapable of any regular and continuous exertion, but they have occasional spurts of energy, when they sometimes display extraordinary activity. It is in this connection that one can clearly comprehend their strong craving for stimuli, which may be alcohol, gambling, or sexual excitement, for by these they temporarily rouse themselves from their lethargic condition. When at liberty, this tendency attains its climax in periodical states of uproarious and drunken exhilaration, so graphically described by Vidocq in his *Memoirs*.

So much for the so to speak "extra-mural" conditions of life of these criminals. In prison they may fairly well be divided into two classes:—(a) Those who come to prison with the intention of "doing their lagging," as they term it, with a good grace, and whose conduct is often excellent; they take their imprisonment as almost a matter of course, and are accustomed to it from former experience; (b) Those who from their day of conviction seem to make it their business to give as much trouble as they can. They besiege the visiting director and the governor in the hope of securing advantages which, from previous bad conduct, they have no right to expect. They also assail the medical officer, and as they are often malingerers of a high order, every resource of that art is employed in the endeavour to obtain indulgences upon medical grounds. Refusal to grant such unreasonable requests does not by any means result in worry on the part of the petitioners, and it would be absurd to think that such refusals operated prejudicially upon their minds.

Dostoieffsky describes an interesting condition at times noticeable amongst criminals, which is a sudden accession, autogenetically, of imperious desire to assert the degraded individuality; this manifests itself in sudden insubordination, assault, or noisy rowdiness, and under other than prison environment would have found an outlet in either an uproarious orgy or a crime of violence. This is not temporary mental aberration, for the reasoning faculties are then in their normal and unimpaired condition, and the individual is in every way responsible.

The troublesome part of the prison population, which I have placed under the subdivision (b), are like those in subdivision (a), inasmuch as they are accustomed to prison life, but unlike the latter they appear constantly discontented, and lose no opportunity of giving trouble. I say they "appear" to be discontented, for it is highly improbable that they are so in reality, or that their "discontented" frame of mind ever disturbs their mental equilibrium; it certainly affects neither their appetite nor their sleep.

Instances frequently occur when a prisoner on reception evinces signs of weak-mindedness, although perfectly responsible for his actions, and very far from being insane in the strict sense of the term.

A case of this description generally shows some congenital abnormality, often in physiognomy. Such an individual may, soon after admission, be reported for laziness, inattention to

regulations, or for destroying his clothing. But it must not be supposed that this prisoner is stubbornly kept under conditions which are unfavorable to him; due consideration is always given whenever possible, and not infrequently he goes on steadily ultimately.

When we consider the factors concerned in the production of mental disease, which are said to be offered by imprisonment in a convict establishment, I think it may be safely assumed that they are practically *nil*. To the recidivist the aspect of imprisonment is by no means terrible; whilst there he is kept clean and comfortable, with a sufficiency of wholesome food, and the labour which is exacted from him is less severe than that which he would need to do outside to gain a livelihood. In prison he is shut out from worry and anxiety, from alcohol and deleterious excitement of all kinds; and from the quiet uneventful routine of his life there, I am convinced that, far from predisposing to insanity, it actually shields many from attacks to which they would otherwise be exposed, from the nature of the life they lead outside.

It certainly does not appear that length of sentence is conducive to the production of insanity. My personal experience of convicts doing their third or even fourth term of penal servitude is that the majority of them are men not only of more than average acuteness and shrewdness, but that they are remarkably cheerful individuals as well. I have repeatedly observed that prisoners who have done ten or fifteen years of one long sentence are often persons of exceptional physical and mental health. In the case of recidivists, it must always be borne in mind that imprisonment for them is not at all what ordinary law-abiding people imagine it to be; as Ellis says, when they are at liberty they wallow in a *dolce far niente*—a holiday which by some act of their own they are well aware will assuredly have an end—a termination which is foreseen and expected. Many people are of opinion that remorse is an important cause of mental derangement amongst convicts. After very careful observation of the large criminal population here, I have very rarely found this feeling present at all; in cases where I have heard it expressed I have, from previous knowledge of the character of the individuals concerned, had very strong reason for doubting the sincerity of such professions. Dostoeffsky and Gall, perhaps two of our most intelligent criminologists, both assert that the feeling of remorse is very uncommon amongst criminals, and that the regrets

which one does hear expressed are far more frequently for the careless omission or neglected opportunity which led to their apprehension and consequent conviction.

Finally, to return to the first offender, I do not think that any intelligent person could possibly imagine that his prison environment could have the effect of unhinging his mind. Of course, given an individual with a strong hereditary tendency to insanity, the effect of the disgrace attendant upon his position might be a predisposing cause of mental disorder; but I contend that a man of normally constituted mind is not more than normally depressed by his position, and that only at the commencement of his sentence, and by the prison discipline his mind is sufficiently diverted from any groove which might, so to speak, disturb the normal swing of his mental pendulum.

The Relation of Acquired Syphilis to Insanity. A Critical Digest. By W. R. DAWSON, M.D. (Dub.), L.R.C.P.I.; Assistant Medical Superintendent, Farnham House Asylum, Dublin.

MODERN opinion as to the nature of syphilis regards it as an exanthematous fever, with a period of incubation, a stage of efflorescence, and an epoch of sequelæ, and in fact diverging in no essential from the type of its class save in its more protracted course, by which peculiarity all other seeming variations can be explained. If the periods of incubation and efflorescence be taken as one, each stage of the disease may be said to have its own characteristic nervous phenomena, including psychoses; and this fact may serve as a basis for the classification of the syphilitic insanities.

Owing to the comparative chronicity of the active period of syphilis, the occurrence of nervous, and above all of mental, phenomena at this stage depends to a far greater degree than in other exanthemata upon predisposition, whether hereditary or acquired. While the majority pass through the disease without showing nervous symptoms, others suffer from them to a greater or less extent, and in a few the mind gives way. As might be expected, the amount of anatomical evidence collected as to the affection of nervous structures by the syphilitic virus is comparatively small, since but few die at this stage, and the specific nature of the lesions cannot at present be proved in all cases. However, implication of the

nervous centres is indicated by the retinitis which is not very uncommon, and the vessels of the brain doubtless share in the universal arteritis and disease of capillaries which may be present; Jürgens has described a simple acute encephalitis, involving the entire brain and producing softening; and softening of the cord, apparently due to vascular disease, has been noted. Cases are also on record (Brasch, Atelekoff, &c.) of disease of the cerebral vessels beginning as early as two or three months after the primary infection, and in their appearance and results strongly resembling tertiary phenomena. They differ from the latter, however, in being refractory to specific treatment, and Neisser considers that such lesions are not really instances of "*tertiarismus præcox*," but rather analogous to the secondary cutaneous phenomena,—being, in fact, "papular" lesions situated in the cerebral vessels." In Atelekoff's case there was also hyperæmia of the brain and membranes, and slight cloudiness of the pia near the vessels. A yellow exudation in the brain and membranes met with in one case (Lancereaux) may, not unlikely, have been an early tertiary phenomenon.

There seems, however, to be a very general consensus of opinion, based chiefly on clinical observation, as to the existence of more or less transitory hyperæmic and inflammatory conditions of the brain and its membranes at this period. Prior to, accompanying, or succeeding the appearance of the rash there may be general uneasiness, lassitude, vague pains, restlessness, melancholy, and moroseness, all probably due to the cachexy of the period. But in addition the tendon and skin reflexes are early increased, and this with the insomnia, headache, sensory disorders (including vertigo and deafness), and neuralgic (neuritic?) pains, would seem to indicate some degree of hyperæmia and inflammation such as above referred to. Various paralyses, and also convulsions, which have been described, seem to point in the same direction. These phenomena are, of course, all within the bounds of technical sanity; but they indicate nervous lesions which would be likely to combine with worry and other moral causes to produce some form of psychosis analogous to the delirium of other fevers, or to *mania a potu*. The rarity of such an occurrence must again be set down to the chronicity of the disease.

Still there is evidence that such cases are occasionally met with. Griesinger is referred to as stating that in cases of predisposition, hereditary or acquired, sudden attacks of

delirium or wild mania may occur as early as the second week after infection, before or with the first secondary symptoms. Wille has stated positively that mental disease may supervene from two weeks to two months after syphilitic infection, certainly with the first secondaries, which, however, it may precede. He appears to have ascribed the attacks partly to anæmia, and partly to meningitis and cerebritis. Mickle doubted the specific nature of these early cases, though admitting that in some few the virus may act directly in the production of insanity, and that there may be early mental disease due to the other nervous symptoms, such as insomnia, headache, &c. Savage, however, says that "syphilitic fever may be associated with delirium, and this may form the starting-point of a maniacal attack," but does not remember having seen such a case, the more usual form of psychosis being a stuporose or suspicious melancholy, or mental weakness, due to cachexia. Hyslop is of opinion that early syphilitic insanity most commonly takes the form of mania, melancholia, or alternation, but may be of an "ordinary idiopathic type;" and that many cases recover on disappearance of the bodily symptoms. In Atelekoff's case, alluded to above, in which both vascular and meningeal lesions occurred, the mental symptoms were depression and irritation, followed by a stage of exaltation, and finally extreme confusion and apathy. Thus both classes of symptoms were also present.

In this country cases have been published by Cadell, Mickle, J. B. Brown, J. Hutchinson, and Clouston, which have a greater or less bearing on the point. Cadell's case, and perhaps that of Clouston, seem to have been genuine examples of the mania of early syphilis; the rest are not convincing. Wigglesworth has published a fatal case of progressive dementia such as Savage describes.

The difficulties arising from the extreme rarity of this form of mental disease are increased by the existence of three sources of fallacy: 1st, the possibility of coincident insanity unconnected with the syphilis; 2nd, the fact that tertiary phenomena may encroach on the secondary period; and 3rd, that, in the opinion of many, tertiary nervous disease is most apt to occur in cases in which the secondary manifestations have been transient and insignificant. Still it is probably, upon the whole, safe to affirm the existence, first, of a very rare early syphilitic delirium or mania, chiefly due to toxic inflammatory conditions of the brain and its membranes; and

secondly, of a commoner but still rare asthenic melancholic psychosis, dependent on general (and perhaps local) anæmia and malnutrition. But actual scientific demonstration awaits the discovery of the organism of syphilis.

There are, however, no such difficulties with regard to the insanity of the tertiary period, the number of cases of which, described clinically and anatomically, is very large, while the lesions are usually characteristic. Tertiary syphilitic disease of the central nervous system is stated to occur as early as the fifth month, and as late as the twenty-sixth year, after infection, but to be most frequent from the third to the tenth year. The insanity to which such disease gives rise is characterised by the same irregular polymorphism, whether as regards symptoms, course, duration, or termination, which is seen both in the other nervous phenomena and in the anatomical lesions. This polymorphism renders it extremely difficult to form any classification of the varieties which shall be even approximately adequate. One on the lines of Oppenheim's arrangement, however, which has the advantage of being based on the anatomical lesions, seems, upon the whole, useful and sensible; but neither it nor any other system can pretend to include in its divisions all the varieties of psychosis dependent on a disease whose distinguishing feature is the chaotic irregularity with which the phenomena are mixed. Neither on the physical nor on the psychical side are the groupings separated by any hard and fast line.

The characteristic lesion of the tertiary period is, here as elsewhere, the development of gummatous tissue in the connective elements of the organs, and consequently occurs, for the most part, where connective tissue is most abundantly found, viz. in the meninges and in or around the blood-vessels.* In a certain number of cases the disease occupies the convexity of the brain chiefly or entirely, in others the base and blood-vessels, and in a few the vessels only; and the symptoms, physical and mental, vary accordingly, the latter being naturally best marked in disease of the convexity. In this situation the morbid process may start in the bone, the dura mater, or the pia-arachnoid, but in any case all the meninges are liable to be ultimately involved. Here as elsewhere there may be merely one or more small discrete nodules, or an extensive mass of gummatous tissue may form, the favourite seat of disease being the area of the

* The following account of the tertiary phenomena is mainly an adaptation of the description in Oppenheim's excellent monograph (see reference at end).

frontal and parietal lobes. The cortex may be merely compressed, and may show no changes even under the microscope; but if the pia-arachnoid is involved the growth penetrates into the cerebral tissue, causing an inflammation of all its elements; softening, partly inflammatory and partly the result of interference with the pial blood-supply; or a simple atrophy due, no doubt, to pressure, faulty nutrition, and defective elimination of waste products. Sclerosis is a less common result. The vessels in the affected area show the ordinary syphilitic changes, but in addition hyaline degeneration has been observed.

A quick-growing syphiloma, even of comparatively small size, in this situation, is liable to give rise to general epileptic convulsions, sometimes associated with wild maniacal excitement. In less acute cases, where there is a succession of epileptic seizures for a sufficient length of time, the ordinary varieties of epileptic insanity may supervene. Here, however, the mental symptoms are due to the epilepsy, independently of its origin. But it is laid down as a general rule that, in most of the cases in which mental disturbance is a leading feature, the disease is found to extend over a large part of the brain, or the process on the convexity is combined with similar lesions at the base, or with disease of the vessels. The course of such cases is usually chronic, the chief feature being a dementia, of any degree of severity, with apathy, moroseness, irritability, and confusion, and occasional fits of excitement. Hallucinations (to be explained by the actual sensory impairments) and transient delusions may also be present, but delusions of grandeur are said to be uncommon. In some of the cases there is a very close resemblance to general paralysis, and it will be remembered that the part of the cerebral cortex chiefly affected is apt to be the same in both diseases.

When the disease is situated at the base of the brain the pia-arachnoid is its usual site, but owing to the anatomical relations of this structure the vessels and nerves rarely escape, while the cerebral substance is frequently invaded; and it is impossible to separate the symptoms of basal gumma from those due to vascular lesions. As distinguished from disease of the convexity, there is an absence of focal phenomena, the mental symptoms being of the type met with when the intra-cranial pressure is from any cause increased, but usually with the addition of those arising from disease of the vessels. Thus there may be impairment of intelligence,

amnesia, hebetude, occasionally passing into somnolence or even coma, or varied by fits of wild excitement, with or without hallucinations. The fits of excitement probably sometimes follow or replace epileptic seizures, which are not uncommon (owing most likely to vascular lesions), though they have not the persistent and progressive character of those due to disease of the convexity. Intervals of comparative sanity also occur at times, but may not be so complete as they appear.

The syphilitomatous growth in any situation of course involves the vessels within its area, either by mere pressure or actual invasion of their walls, the latter being often accompanied by proliferation of the intima. But the disease may attack the vessels independently, in which case it may take one of three forms: a gummatous arteritis or periarteritis, with or without disease of the intima; an endarteritis, affecting the wall within the internal elastic lamina; or a peri- and mesarteritis, the intima being sometimes also involved. The large basal vessels are those most likely to suffer, the cortical twigs and other small vessels being but seldom affected, though hyaline degeneration has been found in them. Obliterating inflammation also occurs in the veins. The results of arterial disease are narrowing and thrombosis with necrotic softening of the area supplied, or, short of complete closure, sclerosis.

If the vascular disease predominates, affecting a large number of vessels, and especially of those supplying the cortex, in such a manner as to produce slowing of the circulation and deficient blood-supply, the group of symptoms indicative of cerebral anæmia appears, viz. "slowness and difficulty of thought, indecision, amnesia, loss of interest, hebetude, irritability," &c., with occasional states of excitement. Vascular disease alone may also give rise to a group of symptoms resembling general paralysis, and sudden complete closure of a large vessel may lead to convulsion, and ultimately to the symptoms of cerebral softening, *i. e.* delirium, and chronic insanity the chief feature of which is dementia.

Syphilitic disease, therefore, when sufficiently extensive, produces certain mental symptoms, of which hebetude, dementia, and depression are prominent; but additions and modifications are met with according as it affects solely or chiefly the convexity, the base, or the vessels respectively. Vascular disease is probably the most important factor in the causation of psychosis, whether involving large or small

vessels, and whether primary or secondary; and next the general and local pressure effects; the indirectly-produced epileptic insanity depending probably on both causes. Whether direct toxic irritation plays any important part is a point which cannot at present be decided with certainty, but that it does so is more than probable.

To complete this part of the subject it is necessary to allude to the question of the existence of a simple tertiary meningitis—a question occupying much the same position as that regarding a similar process in the secondary stage. Oppenheim seems to incline to the opinion that it is not uncommon, and quotes Gilbert and Lion's description of a sort of intermediate variety, the *meningo-myélite diffuse embryonnaire*, which is characterised by a large development of young cells, at first in the walls of the vessels and in the pia, and a fibrino-cellular exudation in the meshes of the latter. "Pachymeningitis hæmorrhagica" has also been found in a few cases. On the clinical side symptoms of a meningitic character have been described, consisting "in profound disorder of the sensorium, fever, involuntary evacuation of fæces and urine, and a course running on the whole rather rapidly to a fatal termination" (Heubner, quoted by Oppenheim), and probably many forms of acute delirium, maniacal attacks, and choreic phenomena in syphilitic patients may be due to slight degrees of some such process.* It need hardly be said that this "simple" meningitis may be combined with gummatous inflammation.

Of the prevalence of the foregoing psychoses in syphilitic cases there is no means of judging, in the absence of any reliable data as to the percentage of the general population affected with syphilis; but they form a very small proportion (Clouston gives $\frac{1}{2}$ per cent.) of the cases in asylums. The incidence of the disease in the brain is determined partly by heredity and partly by other factors, such as, above all, alcoholism. Just as a contusion will form the starting-point of a periosteal gumma, so the injury done to the brain by alcoholic excess will determine the action of the syphilitic poison to that part.

There is, however, a class of nervous diseases, much more important numerically, the relationship of which to syphilis can at this day scarcely be denied, viz. the so-called "para-

* A case described by Alzheimer should be mentioned here, in which the mental and motor symptoms were identical with those of general paralysis, whereas the autopsy showed pure "luetico-meningo-myelitis and encephalitis."

syphilitic" or "metasyphilitic" group, of which tabes and general paralysis are the only members calling for notice here. As these diseases are refractory to antisyphilitic treatment, the proof of their connection with syphilis depends on the demonstration of its precedence in all cases, or at least in a larger proportion than that in which any other ætiological factor occurs, supported by other circumstances, such as an analogy between the two classes of disease in the form, and more especially in the distribution, of the lesions.

* As regards tabes, most authorities are now agreed that the percentage of cases of this disease in which there has been preceding syphilis is very large. Gowers estimates 70—80 per cent., and some Continental authors give even higher rates—Erb, for example, 89·2—92·5 per cent., and others the same or more.

It has long been disputed whether the nervous elements, or the blood-vessels and connective tissue, are the structures primarily affected. If the disease is analogous to ordinary syphilitic lesions the latter view would seem the more probable. It is, however, that which upholds the essentially parenchymatous character of the disease which now generally prevails; but recently Obersteiner, as the result of observations made in conjunction with Redlich, has put forward the theory that "one, and perhaps the most important point of attack of the lesion" may be "the weakest, most sensitive, and most vulnerable spot in the posterior roots, that is, at their entrance into the spinal cord." Certain changes of an inflammatory or subinflammatory nature have been observed here, leading to connective-tissue hyperplasia, by which the roots were constricted. The changes in the spinal cord would thus be simply ascending secondary degenerations. Whatever be the ultimate fate of the theory, this observation is especially interesting in connection with the true syphilitic neuritis described by Kahler and others as affecting the posterior roots; and it greatly strengthens the analogy between the two diseases.

Uncomplicated tabes is of little importance as a factor in the causation of mental disease. When psychological symptoms do occur, they are produced indirectly, as a result of the pains, sexual impotence, &c., which give rise to ideas of persecution, to melancholia, or to violence; unless, indeed, the uncontrollable sexual desire of the early stages forms an exception. The real importance of the disease for the psychologist lies in the frequency with which it is associated with

general paralysis. The association on the clinical side may manifest itself merely by a "slight optimism and mental weakness," or by anything between this and full-blown paralytic dementia; while the anatomical lesions of the two diseases may be found together. Indeed, an eminent authority has asserted that "general paralysis is but a cerebral tabes."

The intimate connection of general paralysis with a disease admitted, in most quarters, to be in some way caused by syphilis in the majority of cases creates a certain presumption in favour of a similar origin for the former, and this presumption is strongly supported by other considerations. The rarity of the disease in precisely the classes and localities where syphilis is uncommon is an important fact in this connection. We have, for example, the well-known instance of the York Retreat, peopled mainly by Quakers, and the fact that the disease is seldom seen in remote countries, such as Iceland (where but three cases seem to have been recorded, all in persons who had been absent from the island or lived in its single seaport); in rural districts, such as Highland glens and country towns, even though drunkenness and illicit intercourse may abound, as in Scotland, or the people marry early and procreate large families, as in Ireland.

Secondly, Fournier asserts, and cites the experience of a host of French syphilographers in addition to his own to prove, that a relatively large number of syphilitics "gravitate into general paralysis."

Nevertheless, when we come to actual statistics of antecedent syphilis in general paralysis, the discrepancy between the results of different investigators is very surprising, the proportion of cases with ascertained syphilis varying from 11 to 94 per cent.; and accordingly some authors deny syphilis any share in the ætiology of general paralysis, while others (Möbius, Hirschl, &c.) attribute every case in some degree to its agency. This discrepancy is due to the difficulty of obtaining a distinct history, to the variability in the manifestations of general paralysis, and to the occurrence of certain groups of symptoms closely simulating this disease, and in some cases, moreover, due to tertiary syphilis, as has already been seen. But it is important to note that the percentage of syphilitic cases is large in recent investigations, and increases with the care taken in eliciting the history and with the opportunity for doing so—for example, the percentage is higher in private than in pauper patients.

Opinion in this country seems to incline in favour of assigning an important rôle to syphilis, though with notable exceptions. Thus, although Clouston does not attach any great importance to it, and Mickle seems inclined to think its influence overrated, McDowall estimates the proportion of syphilitic cases of general paralysis at about 80 per cent.; Savage gives at least 70 per cent.; Gowers more vaguely thinks that syphilis is an antecedent in "a large proportion" of cases, and Hyslop in more than half. On the Continent, however, where the subject has received much attention, the importance of syphilis in the causation of general paralysis is almost universally admitted. The results of a few of the investigations may be mentioned. Mendel found syphilitic antecedents in 75 per cent. of general paralytics, in 18 per cent. of other cases. Rieger, as the result of a statistical inquiry, found 364 to 436 syphilitic cases in 1010 general paralytics, as contrasted with 33—45 syphilitics in 1010 ordinary cases. Hougberg found syphilis to be certain or probable in 86·9 per cent. of the 107 cases investigated, and in 4·22 per cent. of ordinary cases. Binswanger gives 50 per cent.; Jacobson found syphilis certain or probable in 43 to 50 per cent. of his female general paralytics. Hirschl has compiled a table giving the results obtained by fifty-five investigators, which vary from 11 to 94 per cent. Thirty-seven, however, give a percentage of 50 and over—many very much over,—while the average is 56·89—60·63.

The most important recent work on the subject, however, has been done by Hirschl himself, who examined the histories of 200 male general paralytics in Krafft-Ebing's clinic. In twenty-five no history was obtainable, and these having been deducted—which may or may not have affected the results—syphilis was found certain or probable in 81 per cent. of the remaining 175 cases, being enormously more frequent than any other antecedent. He also made a new and important point by investigating the histories of sixty-three patients suffering from undoubted late syphilis, and only succeeded in 63·5 per cent. of these cases in obtaining a certain or probable history of infection, *i. e.* a proportion under that in which the general paralytics gave a similar history.

More recently still Greidenberg found syphilis to be the sole cause in 32 per cent., and an associated cause in 62 per cent., of 230 cases of general paralysis in which a history was obtained; and the writer, in a rough investigation of the histories of fifty cases, chiefly at the Richmond District

Asylum, found antecedent syphilis to be certain or probable in 44 per cent.; but as in many of the cases there was no history obtainable, while in none was the disease excluded, it is probable that the percentage was really much higher.

Without going so far as Hirschl and others, who assert that syphilis is the sole essential factor in the causation of general paralysis, a position which cannot be maintained if we accept the statement that in certain cases it has been possible to exclude it, it may from the above facts be fairly concluded that this disease is antecedent to general paralysis in a far larger proportion of cases than any other single ætiological factor, alcoholism giving a percentage of only 24·9, and heredity 31·37 to 32·63 (Hirschl). It may also be noted that the existence of the developmental variety of general paralysis supports this view, inasmuch as hereditary syphilis has been detected in a large proportion (72·2 per cent.—Justschenko) of the cases of this class.

The strongest argument* in favour of a syphilitic origin for the majority of cases of general paralysis is at present undoubtedly to be drawn from such facts as those just given. At the same time they are to some extent supported by a comparison of certain of the phenomena, clinical and anatomical, of the disease in question with those of undoubted syphilis. In seeking to establish an analogy too much importance must not be assigned to the frequent identity of the ocular symptoms, such as loss of light reflex, diplopia, and the like, as these, when occurring in general paralysis, are open to the explanation that they were due to ordinary syphilitic lesions, as in other cases, and have no real connection with the graver malady; but if this is so, on the other hand, they go to prove that syphilis in these cases has preceded.

The amount of weight to be laid on the resemblances which certainly exist between the anatomical appearances found in the two diseases, will largely depend on the view taken as to the early pathology of general paralysis. If it be held to affect the vessels primarily, it will be seen that the analogy is a very strong one, since in some degree vascular

* The altogether unjustifiable experiment, tried in Kraft-Ebing's clinic, of inoculating eight general paralytics with fresh chancere-secretion, is of little value as an argument, even though none of the cases showed any syphilitic reaction, owing to the (happily) small number of patients so dealt with. More important is his assertion that "it has never yet been observed that such a patient acquired primary syphilis, although these patients, at least at the beginning of the disease, probably give themselves up to numerous sexual aberrations."

affections are probably present in all cases of syphilis (Oliver), and come into particular prominence when this disease affects the brain. Even in the special character of the vascular lesions some resemblance may be detected, as, for instance, in the hyaline degeneration of the vessel walls observed in both diseases, and in the fact that nuclear proliferation may begin in the adventitia in syphilis, which Bevan Lewis holds to be a peculiarity in general paralysis. Attention may also be called to the resemblance between the changes common in the pia-arachnoid in the latter disease, and those in the syphilitic "meningo-myélite diffuse embryonnaire" of Gilbert and Lion. Lastly, it has been seen that syphilitic disease of the vessels only may give rise to a group of symptoms resembling general paralysis. Even if, however, the nervous structures be considered the point of incidence of the disease,—a view which appears to be gaining ground in this country—an analogy may be found in the simple nuclear degenerations and the destruction of cerebral nerve-fibres met with in undoubted syphilis. It is, however, probably impossible at present to decide between these two views, since whichever be the primary lesion, the other soon succeeds it; but a point of resemblance which is unaffected by the controversy is the distribution of the cortical changes, since when syphilis affects the convexity of the brain the seat of election is the fronto-parietal region, precisely the area over which the changes are most marked in general paralysis.

Since, therefore, syphilis and general paralysis are relatively co-extensive in their distribution; since general paralysis often follows syphilis, and syphilis is antecedent in at least the great majority of cases of general paralysis, and occurs in a larger proportion than any other ætiological factor; and since, moreover, there are many points of resemblance in the clinical and anatomical phenomena of the two classes of disease; it may fairly be concluded that syphilis is the most important factor in the causation of general paralysis.

As to its mode of action, the most probable view seems to be that it produces its effects by impairing the vitality of the structures in such a way as to render them the *locus minimæ resistantiæ*, and so especially liable to damage by other influences. The failure of antisymphilitic treatment is, to some extent, at all events, an argument against the presence of an active syphilitic poison, but nevertheless the latter view

cannot be held to be absolutely disproven. Indeed, Piccinino, working with a modification of Lustgarten's method, succeeded in finding bacilli in large numbers in the cortex of five general paralytics (some of whom, however, are said not to have had syphilis). But his bacilli seem to be larger than Lustgarten's so-called "syphilis bacilli," and in any case the very doubtful position of the latter renders the observation, interesting as it is, of little value in the present discussion. Hirschl failed to find Lustgarten's bacillus in the cortex of three general paralytics stained by several of the recognised methods, and with this result the observations of the present writer, so far as they have gone, are in accord.

The conclusions of the present brief study of syphilis in its relation to insanity may, though at the risk of seeming over-definite, be finally summed up in the form of a suggestion for a provisional scheme of classification as follows:—

I. Insanity of early syphilis (primary and secondary).

1. Acute toxic insanity (analogous to delirium or mania *a potu*).
2. Melancholia with or without dementia, probably due to cerebral anæmia.

II. Insanity of late (tertiary) syphilis.

1. Insanity due to syphilitic disease of the base and vessels.
2. Insanity due to syphilitic disease of the convexity.

Most, if not all, cases of cerebral syphilis in which insanity has been caused by epilepsy will fall under the second head (II, 2), but should rather be classed with epileptic insanity, being only indirectly due to syphilis.

III. Metasyphilitic (parasyphilitic) insanity.

1. Insanity of tabes (so far as due to other than "moral" causes).
2. General paralysis of the insane.*

This classification only includes cases in which there is certainly, or probably, a gross anatomical change at the basis of the mental symptoms. But it is obvious that there are various indirect ways in which a disease like syphilis may produce morbid action in unstable minds. Such are the fear of contracting the disease; the worry, remorse, and anxiety produced by its existence; and the pain and insomnia and other sensory symptoms so common in its course. With this

* If Fournier's "parasyphilitic epilepsy" should prove to give rise to insanity (which this author, however, strenuously denies), the same remarks will hold good as in the case of the tertiary variety.

class of cases, as being but the indirect result of the disease, and in no way peculiar, no attempt has been made to deal.

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*A Note on the Comparative Intellectual Value of the Anterior and Posterior Cerebral Lobes.** By CROCHLEY CLAPHAM, M.D., The Grange, Rotherham.

It would be "flogging a dead horse," at the present day, to offer arguments against the exploded phrenology of Gall and Spurzheim, which has long been discredited by scientific men.

Their, so to speak, "lobular" type of phrenology has been replaced by one of a "lobar" type possessing more claim to attention.

In this newer phrenology the parietal lobes have been definitely occupied by the motor centres of Ferrier and others, and the temporo-sphenoidal lobes by the centres of the special senses, leaving unoccupied the greater part of the anterior (frontal) and posterior (occipital) lobes.

Of these anterior and posterior lobes, the former have been

* Read at the General Meeting of the Medico-Psychological Association at Sheffield, February, 1898.

usually selected as the seat of intellect, upon, I think, somewhat slender evidence.

The claim of the posterior lobes to be considered the seat of intellect rests on a wider foundation, composed, as it is, of biological, ethnological, developmental, clinical, and pathological evidence.

It is believed that the higher intellectual and moral processes involve the activity of certain related cell and fibre networks in the cerebral cortex, and are absolutely dependent upon the functional integrity of such networks: the problem is as to their situation.

The claims of the posterior lobes have been supported by Retzius, Carpenter, Bastian, and Hughlings Jackson (among others), in isolated passages of their works.

The evidence may be arranged and supplemented as under :

Biological.—The occipital lobes appear late in the Vertebrata—being absent even amongst the lower members of the Mammalia,—and increase in extent as we ascend the scale: an apparent exception to this occurs in the case of some of the Quadrumana; but, as Bastian says, “if these parts seem to be relatively smaller in man, it must not be forgotten that in monkeys and in apes their surfaces are smooth and comparatively unconvoluted; whilst in man, in proportion to their size, the area of superficial grey matter on the occipital lobes becomes enormously increased by reason of the number and depth of their surface-foldings.”

Carpenter agrees that the part of the cerebrum which is most developed in man in comparison with other animals, is not the anterior but the posterior; and he says that “the philosophical anatomist well knows that the rudiment of a cerebrum which exists in fishes represents the anterior lobe only; that this enlarges as we ascend through the classes of reptiles and birds, but does not change its character; that the middle lobe is only developed as we enter the mammalian class, presenting itself at first in a very rudimentary form, and attaining increased development as we ascend; and that the posterior lobe is developed from the back of the middle lobe, making its first appearance in the carnivorous group.”

In the more highly evolved brains the occipital lobes become deeper, and also fuller and more rounded; moreover there is a notable increase in the complexity of their convolutions.

Ethnological.—In the intellectually lower races of man the

occipital lobes are of small size ; in the Bosjesmans, for instance, they are not sufficiently large to cover the cerebellum, thus approaching the simian type.

Professor Marshall in describing a Bushwoman's brain says, "The curve formed by the under border of the cerebrum, above the cerebellum, is slighter, and its direction more oblique upwards and backwards than in the European brain, owing apparently to a want of downward development of the occipital region, which is very shallow." Comparing with this the brains of three distinguished men, Bastian says, "The occipital lobe has a much greater depth in the brains of Gauss, De Morgan, and the Journalist, than is to be met with in the lower human types previously described."

Developmental.—In the individual, as in the class, the occipital lobes are of late appearance, therein following the rule of all highly evolved structures.

The biological history finds an exact parallel in that of the embryonic development of the human cerebrum ; the rudiment which presents itself at a period when the chain of sensory ganglia has attained an advanced development having been shown by Professor Retzius to be the representative of the anterior lobe only, the development of this making considerable progress before the middle lobe begins to be evolved, and the posterior lobe being the latest in order of evolution.

The following is a summary of Professor Retzius's remarks on this subject, taken from one of the monthly reports of the Royal Academy of Sciences at Stockholm :

"In the first period, which corresponds with the second and third months, only the anterior lobes form ; in the second period, which is comprised in the end of the third month, in the fourth, and in a small portion of the fifth, the two middle lobes appear ; and after this time the posterior lobes. During the first period the descending horns of the lateral ventricles and the pedes hippocampi are wanting ; these are added in the second period. During a great portion of the first period the hemispheres do not cover the thalami nervorum opticorum ; in the second period they completely overlap these parts, approach the large corpora quadrigemina, cover their anterior part, and then descend by the side of the cerebral nucleus (cone or stem), and, as it were, fold round it.

"If we examine a brain at this period of development, we might, from its external appearance, imagine that the posterior margin of the hemispheres corresponds to their persistent

posterior ends and margins, *i. e.* to those which are their posterior margins in their perfectly developed state. But it is not so. If we open the brain we come at once to the descending horns of the lateral ventricles, in which are the rudiments of the great pedes hippocampi. At a later period, in the fourth month, a small superficial notch is formed at the posterior margins of the hemispheres; and that part of this margin which is above the notch is the first rudiment of the posterior lobes of the hemispheres.

“These, which are thus for a long time only rudimental, begin above the middle lobes, gradually take in the posterior margin, follow it down as development advances by the sides of the cerebral nucleus, and terminate at that part of the middle lobes which meets the pedes hippocampi.

“Even in the brain of the mature fœtus, as well as in the fully developed brains of older persons, the posterior lobes are very clearly separated from the middle lobes by a branching furrow, which is especially distinct on the vertical side of the hemisphere which lies next to the falx.”

Clinical.—The lowest class of those mentally deficient shows the smallest occipital development. It is a well-recognised fact that idiots possess little or no “back” to the head, but are remarkable for the neck being prolonged in an almost straight line up to the vertex, the occipital prominence being wanting.

Drs. Fletcher Beach and Shuttleworth both recognise the ill-development of the occipital portion of the brain in idiots; and the latter mentions a case which he inquired into very thoroughly, and where he felt convinced the condition was due to the arrested development of the cerebral hemispheres backwards and downwards at about the sixth month of gestation.

Of careful measurements made by me of some 4000 heads (sane and insane) I have tabulated the males (1944 insane and 183 sane) with the following striking result as regards proportional measurement of the anterior and posterior segments of the circumferential line of the head.

The circumferential line was taken around the head above the eyebrows in front and the most prominent occipital point behind. The anterior segment was taken from auditory meatus to auditory meatus around forehead.

Average percentage of anterior segment to whole circumference:

Sane, 52·15; insane, 52·27; idiots, 52·30;

showing that as intelligence diminishes the anterior segment of the head exhibits proportional increase.

Dr. Garson informs me that a similar proportional increase of the frontal segment has been noticed by him and Professor Flower in their measurements of skulls of lower races in the collection at the College of Surgeons' Museum.

Pathological.—Post mortem the occipital lobes are found small in idiots, whilst the frontal lobes are found large in proportion to the weight of the whole encephalon.

In an article on the "Weight of the Brain in the Insane," contributed by me to Hack-Tuke's *Dictionary of Psychological Medicine*, will be found the following:

Average percentage of frontals to whole encephalon :

Idiots, 37·16 ; imbeciles, 37·11 ; all insane, 35·99 ;

showing that as the intelligence diminishes, the frontal lobes exhibit increase in weight compared with the posterior parts of the brain.

In aphasia, the frequency and degree with which mental degradation accompanies the condition is strictly proportionate to the approach of the lesion to the occipital lobes, as pointed out by Marc Dax and others. In the brains of chronic dementes also marked wasting of the occipital lobes is often found.

Of course, in speaking of the "seat of intellect" I must not be understood to mean that intelligence and will have a local habitation entirely distinct from the sensory and motor substrata of the cortex generally. The point I am discussing is the *comparative* intellectual value of the anterior and posterior lobes, and the frequency of association or otherwise of anterior or posterior cerebral preponderance with mental strength or weakness.

I think the evidence above set forth scales heavily in favour of the superior intellectual value of the posterior lobes.

Since I wrote the above, Dr. W. W. Ireland's article on Professor Flechsig's "Localisation of Mental Processes in the Brain" has appeared, containing the following note:— "Flechsig observes that the height of the forehead depends partly upon the size of the sensation sphere, and this in its turn upon the size of the body. Thus the height of the forehead is no direct measure of the mental powers. The most important part of the brain for great mental performance seems to lie in the posterior regions."

Discussion.

The PRESIDENT said he had nothing to say beyond this, that Dr. Clapham confirmed the statements made by Professor Cunningham at the Dublin meeting in reference to two brains of idiots of a particularly low type, which were characterised by the almost total absence of the occipital lobes.

Dr. JONES said it seemed to him that it followed from Dr. Crochley Clapham's paper that they ought, when selecting their nurses and attendants in future, to look at the back of the head rather than the front. Of course there was a considerable want of the posterior part of the skull in idiots, but there was also a very considerable want of the anterior part of the skull, and comparing the brain of the monkey with the highly developed brain of man, the thing which struck him was the increase in the part between the frontal and the occipital—the so-called motor area. If they looked at the angular gyrus in a monkey it was almost vertical. Looking at it, of course, in man it was much more horizontal, which would have a tendency to push the posterior lobe back, so that the development claimed for the occipital lobe was more apparent than real.

Dr. YELLOWLEES said they all believed that the brain acted as a whole, and that it was very difficult to differentiate one part from another in regard to mental and intellectual processes. They would have to reverse all the teachings of experience if they were to believe it true that the people with retreating foreheads were the intellectual giants of our race. With regard to the pathological aspect, they seemed to have the strongest testimony against Dr. Clapham's theory in the brain death which they called general paralysis, where the morbid changes unquestionably affect the anterior lobes. That seemed to him a very great difficulty, which could not be explained away.

Dr. CROCHLEY CLAPHAM.—With regard to what Dr. Jones said as to the posterior lobe being a very small part of the brain in man, I say that it is very much smaller in the case of an idiot—a diseased man—in comparison with the *whole* brain than in an ordinary man. Dr. Yellowlees says it is difficult to differentiate the locality of intellect in the brain, and no doubt it is. I do not wish to say that the seat of intellect is in this place or in that, but that as regards the two the posterior has more to say for itself than the other. As regards the necessity in that case of reversing the teachings of old, of course we do not mind doing that if we can improve upon the teachings of old. As regards the general paralysis, there is a very large implication of the whole brain in general paralysis, as the brain has spots all over, and especially in the motor region of the parietal lobe. I do not see that that affects very much the question of the paper.

*The Osseous System in the Insane.** By J. F. BRISCOE,
M.R.C.S., Westbrooke House, Alton, Hants.

It would appear, by reference to the Blue-book of the English Commissioners for 1896, that, out of 7182 deaths in the asylums of England and Wales, thirteen resulted from diseases of joints and bones, and eleven from fractures or dislocations. In 1897, out of 6783 deaths, fifteen resulted from diseases of joints and bones, and thirteen from dislocations and fractures.

* Read at the General Meeting of the Medico-Psychological Association, November, 1897.

The text-books on insanity have very little to say on this matter, but Mr. Bryant, in his *Practice of Surgery*, states that "fractured ribs in the insane generally arise from direct violence." Dr. Mickle, in his work on General Paralysis, writes on the bone condition in insanity. In Holmes's *System of Surgery* will be found a good reference of authors on the subject of the pathology of the osseous system as at present understood. Virchow and Eberth, in 1856 and 1878 respectively, describe synostosis of the base of the skull in connection with cretins and idiots. Parrot and Charcot have also contributed important observations on this subject. Mr. Arbuthnot Lane, in the *Pathological Society's Transactions*, vol. xxxv, states that "taking the ribs as the criterion of density, the strength of the bones bears a direct proportion to the dentition of the patient," and also that "in the edentulous the ribs can usually be cut with a scalpel." He goes on to say that "when once the teeth are lost the osseous system degenerates even more rapidly."

After examination of many pieces of bone in acid solution, I conclude that rachitic bones are morbid, because the physico-chemical union of animal and earthy matters is very feeble. Dietetic errors in the feeding of fowls result in their laying soft-shelled eggs; but Mr. Bland Sutton informs me that bone softening of any kind is extremely rare in birds.

I show here a series of skulls and other osseous specimens representative of hyperostosis, osteoporosis, mollities ossium, osteitis deformans, syphilitic thickening, and erosions, from sane and insane subjects. Among these is the calvarium of an Arab child which I brought before you on a previous occasion, and which I believe to be a good example of rickets.

Specimen 1669²⁰ is labelled osteoporosis. The history of the case was reported by the late Dr. Hilton Fagge. For fourteen years the patient suffered from pain in the bones, immobility of the chest, and brittleness of the ribs. Towards the end breathing was difficult. Dr. Mickle repeats Mr. A. Durham's opinion as expressed in the *Guy's Hospital Reports*, "that the nervous system has a distinct influence in producing malnutrition of bone." Those calvaria illustrating hyperostosis are separable into two classes. Typical of these is (1) the Arab specimen, which is of a spongy light consistence; and (2) a skull-cap from a general paralytic, which is relatively dense, hard, and sclerosed.

Do these thickened skulls cause mental aberration? From

what I can gather there is a difference of opinion in the psychological world. I believe that flattening of one side of the skull, obliteration of the sutures, and other irregularities are the precursors of affections of the brain; and that the Pacchionian bodies when enlarged may cause cerebral disturbance. We know what serious results may follow from various peripheral irritations—such as an aural polypus. While I am prepared to admit that ill-proportioned skulls may cause no morbid affection of the brain, we must be aware that thickened skulls are not uncommon, and I suggest that these may result from the carrying of heavy weights on the head. With regard to mollities ossium in the insane a difference of opinion seems to exist. Some observers believe that it is not frequent, and certainly not peculiar to general paralytics. I show the illustrations of a case of mollities ossium reported by Dr. William Bromfield in 1773. These plates show the woman before death, and her complete skeleton of softened and distorted bones. I believe that this disease may arise from gross dietetic errors, and that rickets is a disease of growth, and that mollities ossium is apparently a disease of decay. The pathological conditions of bones, specimens of which I have brought before you, will explain the fragility of the ribs of the sane and of the insane. When, in April, 1895, Drs. Campbell and Mercier brought before the notice of this Association the results of their inquiries on the breaking strain of the ribs of the insane, they asked, what are the forms of insanity which are accompanied by a low breaking strain of the ribs? This breaking strain must vary considerably at the different periods of life, and we have not only to consider the diathesis, but also the athletic powers and previous occupation of the individual.

In conclusion, had I been able to expend more time and observation in examining these osseous affections I might have claimed the privilege of being original. So far I have only introduced the skeleton of the subject, and it now rests with others to further the pathology of these diseases.

Discussion.

Dr. CONOLLY NORMAN.—The fragility of the bones of the insane has been under discussion for such a length of time that it is difficult to find anything new to say about it. I am a little sceptical about the excessive fragility of lunatic's bones. I am clear about this, that an infinite deal of nonsense has been talked upon the subject, because when lunatics die with broken ribs the medical opinion given is usually to the effect that the bones of lunatics generally and in the abstract are fragile. Whereas the question is not are the bones of all lunatics fragile, but are these bones fragile? I have been perhaps

more unfortunate than other people, for in twenty-two years' experience as an asylum medical officer two patients of mine have been killed by having had their ribs broken. They were both general paralytics, and I can safely aver that the ribs were not in the least fragile as tested by ordinary methods, and both patients were proved to have been subjected to treatment that would have broken the ribs of any person. Mr. Briscoe showed us a number of skulls. I am not quite clear about the clinical history and antecedents of the former owners of those interesting bones. A good many presented a condition that we are all pretty familiar with, irregular thickening of the interior of the skull. This is much more common in cases of chronic insanity than amongst other folk. I do not know why it should be so, and I have no fine theory to account for it. I believe it has been suggested that it is a condition similar to hyperæmia and œdema *e vacuo*; but that bones should grow inwards to supply the place of wasted brain is too strong a proposition for me to accept. A deep curve for the meningeal arteries is, of course, very common in old people. I was rather surprised to find that Mr. Briscoe did not refer to the work that Krause has been doing lately under Professor Meyer at Göttingen, where he has held very careful investigations into the condition of the bones in the insane. He disposes satisfactorily of the old idea that the insane are liable to osteomalacia, which is a disease characterised by certain definite microscopical and chemical conditions, neither of which is present in the case of fragility of the bones of the insane, or not more frequently than in the bones of other people. He points out that the giant-cells are absent in these softened bones in elderly lunatics or general paralytics, that the change is one of simple atrophy; that the osseous matter which is reduced in quantity is replaced by fat, that the change is essentially senile, and that it does not occur in general paralysis as frequently as in cases of chronic dementia in the aged. It depends more upon the general physical condition of the patient than upon his mental state, and that is my own experience so far as I have been able to test it.

Dr. R. PERCY SMITH.—I remember two fatal cases at Bethlem Hospital in which ribs were found to be broken. In one case the ribs were so extremely fragile that they could be broken with the finger and thumb like a biscuit, and in the other there was certainly no history of any injury in the institution. At the post-mortem it was evident that we had discovered an old fracture which had united with fibrous capsule, probably of several months' date. Nobody knew of any injury at all, and one would think that there was a probability at any rate in that case that the rib must have become fractured from some very slight cause, which would not have acted in health.

Dr. RICHARDS.—It seems to me somewhat extraordinary that this theory about the softening and fragility of the bones of the insane only occurs in reference to the ribs and sternum. I do not know whether any of the members here present can state that the other bones of general paralytics are equally softened, and whether fractures frequently occur. In my experience I have met with very few fractures amongst cases of general paralysis of the insane, and fractures are not more frequent in cases of general paralysis in the limb bones than they are in other cases of mental disease, or in persons who are not afflicted with insanity.

Dr. HAYES NEWINGTON.—Some twenty or thirty years ago I made many post-mortem examinations at University College Hospital, and came to a certain conclusion as to the normal resistance of an ordinary person's ribs. At Morningside I made still more post-mortems, and paid a good deal of attention to skulls and ribs, and there can be no question as to the relative frequency in which one could easily break a lunatic's ribs, especially in general paralysis of the insane. In these cases ribs rapidly become weakened, and bend like brown paper. It would be absolutely impossible to establish, even on the authority of Dr. Norman, that there is not excessive softness, not perhaps always to breaking point, but to bending point, in the post-mortem room. I have heard of a case

in which it was suggested that the breaking of several ribs was due to auscultation.

Dr. ROBERT JONES.—I think it has been established beyond all doubt that the bones of old people are soft. I believe also from considerable experience that the bones of certain cases of general paralysis are very much softened. I have twisted them and broken them one after the other, and it is a question to me whether these fractures do not occasionally occur spontaneously. I have a case now in my memory of a patient who was an epileptic. He never went out of the attendant's sight, night or day, but after a very severe fit one day he was discovered to have five or six ribs broken on each side, which probably occurred from muscular spasm, and he made a good recovery.

Dr. CROCHLEY CLAPHAM.—I have seen a case as regards the long bones. The patient, a woman, broke the humerus of one of her arms on two occasions during an epileptic fit.

The PRESIDENT.—I would like to bear witness, after the remarks made by Dr. Richards, to the fact that I have on more than one occasion observed great softening of the bones without fracture in male and female general paralytics, and that I have been able to break them across with the greatest ease. That condition of bone, however, is more frequently seen in senile cases.

Mr. BRISCOE.—I have to thank you very much for the kind attention you have given to my paper, and for the remarks which have been made thereupon. When one considers the mechanical arrangement of the thorax, one knows that when one strikes a man he immediately if possible seizes his opponent, draws his chest up, and takes an inspiration so as to fill his chest. Mr. Ward in his *Osteology* says "it is easy to explain the altered condition of the chest, it is like hitting a barrel." Dr. Mickle in his book on *General Paralysis* lays stress upon it, so that he is rather inclined to believe that the ribs of insane people are liable to fracture, and in this he agrees with the late Dr. Sankley. The fact is that the nervous system is blunted, the thorax becomes placed disadvantageously, and the ribs correspondingly more liable to fracture than when the chest is fully distended. My experience has been limited, and I cannot give you any practical information. I, however, do believe that it is quite possible that these friable ribs, as has been mentioned by Dr. Newington, are not uncommonly to be found in the post-mortem room. We know that fat is one of the commonest products after the taking to pieces as it were of the various higher organic constituents of the body. When degeneration runs to absorption excessive fat is always to be found.

Reminiscences of "After-care" Association, 1879—1898.

By the REV. H. HAWKINS, Colney Hatch.

As far back as 1871 a paper named "A Plea for Convalescent Homes in connection with Asylums for the Insane Poor" was admitted by the Editors, Drs. Maudsley and Sibbald, into the *Journal of Mental Science*. In 1879 an article called "*After-care*," by the Rev. H. Hawkins, Chaplain of the Colney Hatch Asylum, was allowed a place in the same Journal. The then Editors were Drs. Clouston, Hack Tuke, and Savage. On the 5th June of the same year a meeting

was held at the house of Dr. Bucknill, 39, Wimpole Street, to consider the subject of the "After-care of Poor and Friendless Female Convalescents on leaving Asylums for the Insane." There were present Dr. and Mrs. Bucknill, Miss Cons, Dr. D. Hack Tuke, Mr. W. G. Marshall, Dr. Harrington Tuke, and others. A paper on the above-named subject was read. It was moved by Dr. C. Lockhart Robertson, and seconded by Dr. Hack Tuke—"That this meeting do form itself into an Association." The names of Dr. S. Duckworth-Williams and of Dr. Savage were added to those already given. It was moved by Dr. Robertson, and seconded by Mr. W. G. Marshall—"That Dr. Bucknill be invited to take the office of President." Also moved by Dr. Harrington Tuke, and seconded by Dr. Bucknill—"That the Rev. H. Hawkins take the office of Secretary." These resolutions were unanimously carried. Later in the summer a meeting of ladies to consider the same subject was held at 84, Portland Place. Miss Cons consented to accept temporarily the office of Ladies' Secretary. Later in the same year another meeting was held at Dr. Bucknill's.

1880 is specially memorable as the year in which the late Earl of Shaftesbury kindly consented to become President of the Society. He had previously expressed his cordial approval of its objects. Referring to the paper mentioned above, he had written, "Your letter entitled 'After-care' has deeply interested me. The subject has long been on my mind, but, like many other subjects, it has passed without any effectual movement on its behalf. Tell my friend Dr. Bucknill that I shall be happy to serve under his presidency in so good a cause."

In 1881 Lord Shaftesbury presided for the first time at the Anniversary Meeting held at the house of Dr. Andrew Clark at 16, Cavendish Square. Lady Frederick Cavendish had kindly interested herself in securing this reception. Among other ladies present were Lady Lyttleton, Lady Brabazon, Mrs. Gladstone, &c. Dr. Andrew Clark, in effect, remarked that, in the case of convalescents in hospitals, it was often sad to become well, when the fostering care of the wards had to be exchanged, without intermediate preparation, for the privations and roughness of home life. Convalescent treatment for a while would be very valuable.

1882.—In the following year Dr. John Ogle, now one of its Vice-Presidents, was good enough to receive the members of the Association at its Annual Meeting, at 30, Cavendish

Square, when Dr. Hack Tuke called attention to the need of some house or room in which business could be transacted.

1883.—The next Anniversary was kept by kind invitation at Lord Cottesloe's, in Eaton Place. Lord Shaftesbury stated his belief that the "After-care" Society was required to supply a real want, and that it was (in his own phrase) a "seed-plot," from which in time good results would spring.

The Annual Meeting of 1884 was memorable as being the *last occasion* when Lord Shaftesbury (who had presided at the Society's Anniversaries since 1881) was in the chair. The tryst was Lord Brabazon's, at 83, Lancaster Gate. Though himself absent from home, he kindly placed a room at the service of the Association. The President remarked that he considered a "Home" a necessity, and did not see how such a resort could be dispensed with.

1885. *Bethlem Hospital*.—The 'genius loci' of Bethlem Royal Hospital afforded appropriate tryst-room for two meetings in the summer and autumn of 1885, by the kind arrangement of Dr. Savage. On one occasion J. Copeland, Esq., the Treasurer, was in the chair.

Bazaar.—Earlier in the same year a Bazaar, lasting two days, was organised by Mrs. Ellis Cameron. It was held in the Kensington Town Hall. The proceedings of the first day were opened by the Rev. C. Carr Glyn, Vicar of Kensington, the present Bishop of Peterborough. The pecuniary result was a handsome addition to the funds of the Association.

Death of the Earl of Shaftesbury.—The death in the autumn of this year of the veteran philanthropist, Lord Shaftesbury, was the cause of sorrow to very many, among whom were the members of the "After-care" Society. The great Earl was buried on the 8th October in Westminster Abbey in the presence of a large concourse of friends, among whom were Drs. Bucknill and Hack Tuke.

Lord Brabazon, President.—Later in the year an interview with Lord Brabazon, at 83, Lancaster Gate, led to his acceptance of the vacant Presidentship. Though he was seldom able to attend meetings, yet the prestige of his name and permission to hold occasional meetings in his house—the resort of many charitable gatherings—were no slight advantages. He once remarked that he accepted his position as a legacy from Lord Shaftesbury.

1886.—An important event in the annals of the Society, and very advantageous to its interests, took place in 1886. At more than one of the Annual Meetings the Hon. Secretary

had stated his opinion that it was *essential* to the progress of "After-care" that a secretary should be appointed who could devote a substantial portion of his time to promoting the objects for which it was founded. The work was not of a kind that could be a 'πάρεργον,' that could successfully be taken up merely at bye-times. It needed fostering care and continuous work.

H. T. Roxby, Secretary.—The Committee selected for the post Mr. H. Thornhill Roxby, whose appointment has been entirely justified by results. Previously to his connection with the Association its existence was kept in evidence by occasional meetings (such as have been referred to), and in some other ways, and a few practical cases of "After-care" were not wanting; but when Mr. Roxby joined the Society's work a new and vigorous departure became manifest. A "constitution," which before had been almost non-existent, was formed; Committee meetings were appointed, subscriptions invited, cases requiring convalescing "After-care" were brought forward for investigation by members of the Committee (partly composed of ladies), and dealt with according to the circumstances of each case. It is due to the Secretary to mention that his preliminary inquiries into applications for "After-care" have been of great assistance in Committee. The number of cases which have come before them since 1886 have exceeded 979; "some have come up for help two or three times, relapsed, and are counted as fresh cases. Besides work in his office and at Committee meetings, the Secretary has brought the subject of 'After-care' under the notice of many in the suburbs and the provinces as well as in London."

1886. *Princess Christian, Patroness.*—It was also in this year that the Princess Christian conferred the great honour on the Association of becoming its Patroness. This favour was obtained through the kindly offices of the Rev. Edgar Sheppard, Sub-dean of the Chapels Royal, and son of Dr. Edgar Sheppard, for many years Superintendent of the Male Department of the Colney Hatch Asylum.

1887. *Interview with Cardinal Manning.*—An interesting incident in our history was the reception of a deputation consisting of Dr. Hack Tuke, the Rev. Father Cox, Mr. Roxby, and Rev. H. Hawkins, by His Eminence Cardinal Manning at his house in Kensington. The twofold object of the interview was to secure the Cardinal's interest in the Association's work, especially in the case of Roman Catholics,

and to request him to become a Vice-President of the Society. The Cardinal's demeanour and reception were courteous and kindly.

1889.—With the sanction of the Earl of Meath a concert, organised by Mrs. Ellis Cameron, was given at 83, Lancaster Gate. The pecuniary proceeds, if any, were inconsiderable. But it was one amongst other methods by which the name and objects of the Association became gradually better known. On several occasions the lady named above has shown interest in the progress of After-care.

1891. *Dr. Rayner, Treasurer.*—On the resignation of Dr. Claye Shaw of the office of Treasurer, which he had held almost from the beginning, Dr. Henry Rayner kindly consented to keep the Society's accounts—perhaps a not very onerous duty, yet imposing some amount of trouble which many decline to undertake.

Office at Church House.—A useful suggestion by Mr. Roxby resulted in an initial occupation, in 1891, of very limited accommodation in the "Church House," Westminster, which was enlarged in 1895 by the acquisition of an "office," so that the Society has now the more independent status of being a tenant at will instead of on sufferance. Besides, the display of the word "After-care" on the office door imparts dignity to transactions within.

After-care in France.—Any supposition that the "After-care" Association was first in the field was dispelled by information, furnished by Dr. Hack Tuke, that one with a kindred object, and in some respects wider scope, had long been in operation. It is known as the "Asile Ouvroir, Sainte Marie, situated at Grenelle, near Paris." Its founder was Doctor Jean Pierre Falret, and it is managed by Sisters of the Order of St. Vincent de Paul. The Asile dates from 1841. The Society not only affords "After-care" within its walls, sometimes even to an inmate's life's end, but also keeps touch with mental convalescents at their own homes.

The "Réunions du Dimanche" are occasions when, under certain regulations, Sainte Marie receives as guests not only former inmates, but also husbands and children in company with some convalescent friends, or on a visit to wives and mothers still in residence at the Asile. In the course of one year more than 1400 persons took part in these gatherings. The English Society was not the originator of "After-care" treatment for mental convalescents, and perhaps could hardly do its work on the same lines.

1892. *Meeting at Colney Hatch.*—As an exceptional concession, the committee of the Colney Hatch Asylum granted the use of their Board for chiefly a local meeting of friends of "After-care." Dr. Hack Tuke was in the chair. Among others present were Drs. Seward, Savage, Rayner, &c.

1893. *Home discontinued.*—The experiment of a joint occupation of a house in Surrey for the purpose of the reception of mental convalescents proved unsuccessful. An *imperium in imperio* is not often of long duration. The house partnership was dissolved, and the plan of boarding out reverted to.

1895. *Death of Dr. Hack Tuke.*—A great loss and sorrow befell the Association in the spring of 1895, when death removed Dr. Hack Tuke, who had been its invaluable supporter and guide from the first. His grave, kindly face was regularly to be seen at committees, where, as chairman, his counsels were of much service. His experience and research in his branch of the medical profession secured for him a wide reputation. A distinguished alienist happily described him as the "Historian of his speciality." No doubt his laborious literary occupations overtaxed his constitution. In particular, his editorship of the *Dictionary of Psychological Medicine* must often have severely strained his mental and physical energies.

Dr. Rayner, Chairman.—The Association was most fortunate in being able to secure the valuable services of Dr. Henry Rayner as their Chairman in succession to Dr. Tuke. Great thanks are due to him for the regularity of his attendance, and for the kindly courtesy with which he presides.

Ladies' work.—Mention should not be omitted of help given to mental convalescents by ladies' working parties. One at New Southgate has, during many years, given parcels of clothing to female convalescents leaving the great asylum close at hand. Ladies have been valued friends to the Society from the commencement. Lady Frederick Cavendish, Miss Agnes Cotton, Miss Cons at the outset of its career, Mrs. Henniker, Miss Paget, Mrs. Hack Tuke, and others in later years have helped on its work. Although, as we have been reminded, the Society may never become popular, yet it has a good object in view, and work to do which, as years go on, may be helpful to many mental convalescents.

"'Tis not enough to help the feeble up,
But to support him *after*."

CLINICAL NOTES AND CASES.

*A Case of Hæmatoporphyrinuria.** By KEITH CAMPBELL, M.B.,
formerly Assistant Medical Officer, James Murray's
Royal Asylum, Perth.

THE occurrence of hæmatoporphyrin in the urine of patients, and its relation, when excessive, to the exhibition of sulphonal, has of late years attracted the attention of both clinicians and physiological chemists. Although the exact processes which lead to this change in the urine have not yet been determined, the group of clinical symptoms associated with the appearance of hæmatoporphyrin in the urine is now fairly well defined. The subject is of great interest, especially to those whose practice is among the insane; and the present case, which gives a very complete clinical picture of the symptoms in such patients, has been thought worth reporting.

K. D., aged 22, was admitted on 3rd July, 1897, suffering from subacute mania.

History.—*a. Family.*—Father died, aged 68, of cardiac disease. Mother died of cancer, aged 58. A sister was for three months in an English asylum suffering from mania, a sequela of influenza.

b. Personal.—Patient, a domestic servant, was active and regular in her habits, and had always lived under good hygienic conditions. The catamenia were regular until within two years of the attack, when she suffered from anæmia with amenorrhœa.

Inception.—The attack began with depression, followed by fancies and suspicions. In October, 1896, she thought she would lose her reason, as her head was "moving on the top." It seems that from this date she was never quite well mentally, and from February till April she was under treatment for œdema of the legs and ankles, with pain. She was habitually constipated, and was treated with tonics and aperient pills. On June 30th—three days before admission—she had two powders, R Sulphonal gr. xv, Pot. Brom. gr. xx, Phenacetin gr. xv. Beyond this, after careful inquiry, no evidence of any sulphonal having been administered could be obtained. The sleeplessness and maniacal symptoms did not improve under treatment, and she was admitted on July 3rd, as she could no longer be controlled outside.

On Admission—Physical.—She was a well-developed young woman with no obvious organic disease of any of the organs, but with a very poor circulation, as shown by the "blue œdema," coldness,

* Read at the General Meeting of the Medico-Psychological Association held at Sheffield, February, 1898.

and clamminess of the extremities. There was a marked degree of sluggishness of the alimentary functions and excitability of the nervous system. The urine received from the ward under her name contained no abnormal constituent. The specific gravity was 1026.

Mental.—She was excited, constantly talking quite incoherently, and she had many fleeting delusions. She was very restless and jerky in all her movements.

Progress of the Case.—July 4th.—She had a restless night, and next day was even more excited. As she had disturbed the other patients the night before, she to-night had ʒiiss of paraldehyde as a draught. She took a fair amount of nourishment during the day.

5th.—A good night, but still restless and talkative; taking food well.

6th.—Out all afternoon; tired on coming in; asleep at 10 p.m.

7th.—This morning she was sick, and vomited persistently. She also complained of abdominal pain, not very defined. The bowels were confined; she had poultices over the epigastrium. Mentally better to-day.

8th.—Still sick and vomiting; bowels obstinately confined. She had aperients, which, however, she could not retain. Much calmer mentally.

9th.—Still sick and vomiting, but not so persistently. Worse mentally.

10th.—Quite maniacal again. Enema produced little effect. Became sick again at night. Marked hiccough at intervals.

11th.—Mustard leaf over epigastrium; enema with little effect. With the persistent sickness the pulse had become very weak, and she now had brandy ʒj in the hour. The sickness and tendency to vomit disappeared to-day. Hiccough again troublesome.

12th.—No more sickness. Took and retained a good deal of milk and potash, as well as brandy. The maniacal symptoms had now passed off, though she was still distinctly "silly" in conduct.

13th.—Satisfactory enema. Very sensible to-day.

14th.—Temperature rose to 100·4° in the evening. Urine to-day cherry-red; guaiacum test negative; no microscopic appearances of blood. Provisional diagnosis of hæmatoporphyria; sent to Clinical Research Association. (It is probable that wrong specimens were submitted by the nurse during the past week.) She took a fair amount of fluid nourishment to-day.

16th.—Diagnosis confirmed; very low. Considerable paresis and diminished sensibility; pupils dilated, but react.

17th.—Worse. Pupils widely dilated; perspiring freely. Caked dry lips; foul tongue; sensibility to touch showed further diminution; reaction time for sensation slowed over lower extremities to three inches above knee—for pain over body generally. No loss of power apart from weakness in the arms and extensors of legs, but

the flexors markedly paretic. Swallowing interfered with. No sickness. Blood examined: red blood-corpuscles almost 7,000,000, well formed; no poikilocytosis or change in the cell-pigment could be seen. Passing very little urine, only a small quantity being secreted. Superficial reflexes now practically gone, knee-jerk absolutely so. By evening more restless, moving about in bed; control of bladder and rectum gone; heart very weak. She had now no pain or sickness, but there was a tendency to diarrhœa. Breathing laboured, mostly thoracic.

18th.—A bad night; constant chattering. This morning lying very "dead;" could not move legs, but moved arms slightly. Lower lip sloughing and discharging on its mucous surface, where she had bitten it during the night. Taking nourishment freely. Passed urine normally; colour the same; sp. gr. 1020, acid; small amount of albumen; mucus. Pulse rapid, thready. Breathing laboured. By afternoon much changed; did not recognise those about her; quite helpless; hardly able to move a finger. Pupils dilated; when fixing for a near object a marked tendency to double internal squint. The breathing, which had all day been laboured, was now almost entirely dependent on the action of the intercostals and extraordinary muscles of respiration. Posteriorly the lungs full of moist sounds. Swallowing still difficult. Incontinence again this afternoon. A check examination of the blood gave almost 7,000,000 red blood-corpuscles per cubic millimetre.

19th.—Diaphragmatic action almost absent. Breathing a constant struggle, and in evening almost gasping. Nystagmus, lateral for the most part, slight in the morning, marked in the evening. No hiccough since 11th. Taking a considerable amount of nourishment. Still incontinent; colour of urine the same. Supra-renal tabloids, one every two hours, powdered in a little milk. To-day convulsive movements of the neck muscles, with slighter twitchings of the facial muscles, appeared, and during this the squinting was marked. During the seizures the pupils, usually dilated, were contracted, and the nystagmus disappeared. Each convulsion lasted from a few seconds to a minute, and the earlier ones could be stopped by passing the hand in front of the face. Patient did not speak all day, and was unconscious almost the whole of the time. Corpuscles rather over 7,000,000; no marked change in their form, though many of them were small. By midnight the breathing was laboured and of the Cheyne-Stokes type. The convulsive attacks came on at intervals of twenty to thirty minutes. Ophthalmoscopic examination of the fundus gave negative results.

20th.—Just alive. Before each convulsive attack the breathing became a succession of gasps, and after each it was shallow and at long intervals. The convulsions were now much more frequent, and distinctly epileptiform in character. A typical one half an hour before death was as follows. The breathing became very

hoarse and gasping. The lip and face muscles began to tremble and twitch slightly. The eyes were open and staring; pupils dilated; face flushed. Then followed a very short time stage, when the mouth was firmly closed, the face congested, and neck veins engorged. During this stage of tonic spasm and for some seconds after the pupils were contracted. This was succeeded by a clonic stage, with increased working of the face muscles and jerking of the arms and hands (especially left index finger), and also slightly of some of the thigh muscles; the whole being in marked contrast to the "dead" way in which she usually lay, with only the intercostals and extraordinary muscles of respiration acting. After a fit she was completely exhausted. The pulse became a mere run. The heart sounds could barely be made out. The breathing was very shallow and at long intervals; the pupils widely dilated, and the eyes rolled up. The fits increased very much in severity towards the end, and followed each other every ten to fifteen minutes. Power of swallowing was quite gone for some hours before death. She died at 3.30 p.m., thirteen days after the first appearance of the vomiting. Just before death the temperature, which had been steadily rising, reached 103° F.; post mortem it rose to 104.2° F.

Report on urine by Clinical Research Association.—"The pigment in this specimen was hæmatoporphyrin, and its quantity was such that we believe that sulphonal or an allied drug must have been taken in excess. No blood was present, and no tube-casts. Albumen present was in very small amount only."

Post-mortem.—There were 3iv of fluid in the left pleura. The right lung was extensively adherent. The subdural fluid was slightly in excess, and there was some effusion into the meshes of the pia posteriorly. There was marked congestion of the venous sinuses and meningeal veins. There were localised patches of rusty staining over parietal regions. There were some minute recent hæmorrhages over the outer aspect of the parietal lobes and on the under aspects of the occipital and frontal. The whole brain was soft in consistence. The blood generally was dark and fluid.

Report on organs by Dr. W. F. Robertson.—"Right adrenal shows in the cortex numerous large areas in which the epithelial cells have undergone a marked degenerative change, consisting of the replacement of the protoplasm by clear globules. These globules, which vary considerably in size, do not (with an occasional exception) give a fatty reaction with osmic acid. There is no evidence of any tubercular disease in any part of the organ. Left adrenal shows similar changes. There is no tubercular disease. The degenerative changes above noted are evidently the same as those that are so commonly to be observed in the adrenal epithelium in various diseases, and therefore they probably have no important bearing on the case. The ganglia of the celiac plexus appear to be healthy.

"The kidneys are much congested. The epithelial cells of the

tubules appear swollen and degenerated, but the change may be partly a post-mortem one. They do not for the most part give a fatty reaction with osmic acid. There is no evidence of any acute or chronic inflammatory changes.

“*Lungs*.—Numerous tubercles in the apical portion of right, some of the larger being caseous in the centre. The surrounding tissues are much congested, and are consolidated by recent inflammatory changes. There are several caseous nodules, about the size of small peas, loosely attached to the pleura.

“*Brain*.—Vessels and neuroglia appear healthy. Nerve cells show no distinct evidence of chromatolysis or other morbid change.”

Notes on the case.—In comparison with other cases where a similar class of symptoms has been described in connection with the administration of sulphonal, it is interesting to note in the present instance the very small amount of the drug taken. In all the other cases where sulphonal has been the exciting cause of the symptoms, large quantities have been taken over a considerable period. In this case only thirty grains of the drug had been taken in two doses three days before admission. It is doubtful, however, if this small amount of the drug could be said to have been the absolute cause of the train of symptoms. There was no evidence certainly of any of the other diseases, *e.g.* rheumatism, pneumonia, typhoid, peritonitis, &c., in the course of which hæmatoporphyrinuria has been observed; but Dr. S. M. Copeman (*Lancet*, 1891, p. 197) has described two cases where there was hæmatoporphyrin in quantity in the urine, and at the same time great prostration, inability to move, &c., and two other cases were referred to by him. Three of the four died collapsed. There was no evidence of sulphonal having been given, and there was no concurrent disorder to account for the symptoms. The description of these women, who were highly neurotic and suffered from sleeplessness and habitual constipation, exactly corresponds to the description in the present case. They were, however, of middle age, while the present patient was a young woman. But even this small amount of sulphonal cannot be entirely ignored, especially if we are to consider that the appearance of large quantities of hæmatoporphyrin in the urine of certain patients who are having sulphonal and not in others is due to an idiosyncrasy on the part of the patient for that drug, and more especially as it is probable that the progressive and far-reaching results are not to be set down to the direct action of sulphonal itself, but to chemical changes, almost

certainly alimentary in the first place, and probably hepatic, of which the sulphonal has been the exciting cause.

It is to be regretted that the condition of the urine in this case was not earlier recognised. The first symptoms of alimentary disturbance were observed on July 7th, but it was not till the 14th that the characteristic cherry-red colour was seen by the medical staff. During this week more than one specimen of the urine was examined. It seems that the impression amongst the nurses was that the patient was menstruating, and it is certain that the specimens which were examined were pale straw-coloured, and presented no abnormal features, chemical or microscopic. It is very unlikely that, with the gastro-intestinal symptoms so urgent, the urine should not have presented the red colour before July 14th.

The clinical picture presented by this case is very complete, and remarkable in some of its aspects.

It might be divided into three stages :

1. Where the symptoms were almost entirely gastro-intestinal. This lasted nine days, and presented very markedly all the usual features.

2. The stage of progressive toxic paralysis, where, beginning with the flexors of the lower limbs, the whole muscular system was paralysed,—the upper extremities being affected rather late. Along with this motor change, and beginning also with the lower extremities, diminished sensation was observed. The knee-jerks and superficial reflexes were early affected and finally absolutely lost. The sphincters were paralysed three days after paresis became apparent. The more vital functions of breathing and swallowing were affected early. Hiccough was noted as a rather persistent symptom during the first stage. From the tenth day from the onset of gastric symptoms and up till death swallowing was increasingly difficult. The fact that the action of the diaphragm is much diminished in certain of these cases is noted by Dr. Oswald in his case (*Glasgow Medical Journal*, January, 1895), and in this case the rapid failure of its action was very marked after the eleventh day from the onset of symptoms. From that date the extraordinary muscles of respiration were constantly in action, and the failure of the respiratory mechanism would seem to account for the third stage in the clinical history of the case, and eventually to have caused the death of the patient. The pupils were dilated all through, except during the convulsive attacks. The fundus showed nothing of note.

3. The third stage might be described as the convulsive stage. Twitchings of the arms and face were noted in a case which occurred at Gartnavel, for notes of which I am indebted to Dr. Hotchkiss. In the present case the convulsive seizures were eventually quite epileptiform in their character. The first indication of convulsive action was noted on the eleventh day from the onset. It consisted in marked squinting when the patient fixed for a near object. Next day convulsive movements of the neck and face muscles appeared, accompanied by double internal squint. The intensity and frequency of the convulsive attacks increased up till death. The symptoms observed agreed closely with those got in asphyxia, and this stage seemed to be accounted for by the failure of the mechanism of respiration, and the consequent slow asphyxiation. The results of the post-mortem examination seemed to bear this out.

As regards the blood examination, the results were different from what might have been expected. In other cases reported the red blood-corpuscles have been found rather diminished in numbers, 3,250,000 to 4,600,000 being the usual limits. In a case which occurred at Morpeth, for notes of which I have to thank Dr. France, the red blood-corpuscles were found "of various shapes, irregular, large, crenated, and oval. Many were granular, the granules arranged in a crescentic form. In many cells what looked like a nucleus was seen." In the blood of the present case the red blood-corpuscles averaged 7,000,000 per cubic millimetre as the mean of three examinations by separate observers. Only a few were altered in shape, but a large number were small in size. No granular appearance was observed, nor any nuclei. These examinations, however, were conducted after the tenth day from the onset of symptoms, and in the case reported by Dr. Oswald he observed that "some days before death the corpuscles increased, and apparently the destructive process had stopped. The percentage of hæmoglobin was 49 per cent."

Supra-renal tabloids were administered, but as they were not available till late in the course of the disease their effect could not be properly estimated.

The urine all through was small in amount, and the sp. gr. never was much over 1020. There was always a trace of albumen, which increased in amount towards the end. No blood-cells were ever detected in the urine.

Post-mortem.—The condition of the adrenals is interest-

ing, as is also the condition of the blood, and evidences of meningeal venous congestion, in view of the termination of the case.

The prognosis in such cases of hæmatoporphyrinuria is at best a very grave one. From a survey of the literature of the subject it would seem that when paralytic symptoms become evident, and especially when the diaphragmatic action is at all affected, the outlook is hopeless.* Where the symptoms are purely gastro-intestinal, or accompanied merely by prostration and weakness, the prognosis is not so absolutely bad. A progressively increasing temperature is a bad sign, but the higher degrees—over 101° F.—are usually only reached towards the end of the case.

I have made no reference here to the mode of production of hæmatoporphyrin and other allied morbid urinary pigments. The subject is one of the greatest importance in view of the fact that a drug which is of immense service in the treatment of many cases of mental disease evidently bears a causal relation to the special changes observed. It is also important from the point of view of treatment, which at present is to all practical purposes *nil*. The researches of McMunn, Garrod, and other physiological chemists have done much to elucidate the nature of this pigment, and as recently as February 5th of this year, in the *British Medical Journal*, Dr. D. F. Harris, of Glasgow University, in a retrospect of twelve cases, has described the spectroscopic appearances produced by morbid urine pigments allied to hæmatoporphyrin. The pathological changes which produce the pigment are, however, as yet obscure, and in the circumstances I have limited myself to the clinical phenomena.

Discussion.

Dr. CLAPHAM doubted if it would be of any use to watch the urine were thirty grains of sulphonal to produce such effects. It would be too late after the mischief was done.

Dr. ADAIR.—A few years ago he spent some time trying to find out the relationship between hæmatoporphyrinuria and the administration of sulphonal. They used sulphonal pretty freely, and patients might have 60 to 100 grains a day. The nurses were instructed to watch them, and to take particular note of the urine. In no single case could he find any discoloration. They sometimes had cases of sulphonal poisoning, but knew the symptoms, and stopped

* In connection with this progressive paralysis of the respiratory muscles, it is interesting to note that broncho-pneumonia has been observed in two cases reported. In one observed by Hammarsten the broncho-pneumonia appeared eight days after the urine change was noticed, and was the cause of death. The other was a case of acute sulphonal poisoning (*Brit. Med. Journ.*, Supplement, September, 1897), where broncho-pneumonia supervened before death.

the sulphonal at once. They always kept their eyes open for the possibility of sulphonal poisoning. As they gave so much sulphonal with negative results in spite of care in watching, he was inclined to think they would have to fall back on the supra-renal capsules as the cause of the condition rather than the administration of sulphonal. If he obtained any further information as the result of further investigations in that institution, he would be pleased to send it to the JOURNAL.

Dr. CAMPBELL said he thought it was generally acknowledged that if there was to be any chance of recovery for a patient with hæmatoporphyrinuria, the urine change must be recognised early. Therefore the urine should be watched. He thought every patient who was taking sulphonal ought to be a marked patient for the nurse or attendant, and if these knew that the patient's urine was being watched for a particular purpose they would also more keenly observe any small change in the mental and physical condition. In that way the clinical appearances of the patient are well noted.

The PRESIDENT congratulated Dr. Campbell upon having read such a minute and interesting clinical record. The case recalled the only similar one he ever saw. It occurred at Morpeth a year or so ago, and had been reported by Dr. Evans. It was, indeed, a very serious matter that a drug which they had found of such immense use should be undoubtedly, under certain circumstances unknown to them at the present time, occasionally toxic and fatal.

Dr. URQUHART said it would be very important, seeing that these cases of disease of the adrenals had been recorded, that when any one had a chance the supra-renal extract should be tried in the future. If 30 grains could produce this trouble, which otherwise is almost unknown, it was a very serious matter for those who are in the habit of giving sulphonal every day.

Notes on a Case of Yew Poisoning. By DR. BEDFORD PIERCE,
The Retreat, York.

MRS. F. E. S. was admitted to The Retreat, York, on 28th July, 1894, with puerperal insanity of the melancholic type. She was 26 years of age, and had become insane six days after her confinement, two months before admission. She had made several attempts at self-injury, and had been dangerous towards her child. On admission she was well nourished, and presented no signs of bodily disease; it was noticed, however, that her palate was high and narrow. Mentally there was much incoherence of thought; she was confused, muttered inarticulately, and had hallucinations of sight and delusions of a painful character.

The next four months saw very little change, except that she became somewhat more coherent. She made several attempts at self-injury, tried to thrust a knitting-needle into her neck, to strangle herself. She secreted a knife, and when out for a walk tried to get in the river on one occasion.

During December she began to show signs of improvement, occupied herself, and before Christmas helped in decorating the ward; and on December 26th wrote home more cheerfully than usual, saying how Christmas had been spent.

On December 27th I saw her twice in the forenoon, and noticed nothing unusual. She dined as usual with the other patients, but the nurse in charge thought she did not look well, and asked her

if there was anything amiss. Mrs. S. said she had a slight headache, but she ate a good dinner nevertheless.

On the way back to the ward from the dining-hall, patient staggered and fell; she partly rose, and fell again. I was at once summoned, and was there in less than a minute, and found her looking bluish, her pulse feeble but regular; she told me she felt better, and tried to rise and could not. I left to get an ether draught, and on returning found her unconscious. There was some retching, the pupils widely dilated, the breathing long drawn and stertorous, and at one time a little stiffening of the left side was noticed as if a fit was impending. In spite of two ether injections the patient died within fifteen minutes of the first symptom.

We were entirely at a loss to explain the sudden illness. The throat was clear, since artificial respiration showed that air entered the lungs freely. There seemed no possibility of poison, and there was no evidence of injury. The patient had been under observation continuously since admission, and the nurses were unable to throw any light upon the matter.

At the post-mortem examination the veins in the skull were unduly gorged with blood, and there seemed a little wasting of the convolutions on the left side near the vertex. The lungs were natural. The left side of the heart was very firmly contracted, and empty. The right side contained one small clot of blood. There was some slight thickening of the mitral valve, and one or two minute atheromatous patches in the aorta. The right ovary contained some small cysts, and the uterus was normal; and the other viscera appeared natural with the exception of the stomach, the walls of which were unduly injected. The stomach contained, in addition to undigested food, a considerable quantity of yew leaves, some pieces of cypress and ivy. The small intestine throughout its whole length contained fragments of yew, but its walls were not inflamed. The contents of the large intestine as far as the sigmoid flexure were stained green, though no particles of yew were detected. The lower bowel was empty.

On the facts of the case being notified to the coroner an inquest in due course was held, and the verdict brought in was to the effect that Mrs. F. E. S. died of "failure of the action of the heart due to her having accidentally poisoned herself by surreptitiously eating yew leaves used in decorating the day-room of the gallery in which she was living, and that in our opinion the nurses in attendance upon the deceased were not to blame for her death."

In view of this official declaration, I had no alternative but to return the death as being accidental, and not due to suicide, though the terms "accidentally" and "surreptitiously," as used by the coroner's jury, seem hardly in harmony with each other. In my own mind the matter was quite an open one, since there was no evidence to show that the patient was aware that the evergreens were poisonous.

As regards the time of taking the yew, it would appear probable that a considerable quantity was obtained whilst she was assisting in decorating the ward, viz. on December 24th—that is, three days prior to her decease. Still it was quite possible that she obtained fragments subsequently, as the architraves of the doors had been trimmed with yew leaves, and nothing was more easy than to pick off a fragment unknown to the nurse on going in and out of the day-rooms.

There seems, I fear, no escape from the conclusion that the effort made by the staff to brighten Christmas-tide had been the means of causing the death of a patient whom we fully expected would soon be convalescent.

It will be interesting to compare the case just recorded with one published by Dr. Deas in the *British Medical Journal* for 1876, vol. ii, p. 392, and in the *Parkside Asylum Reports*.

Dr. Deas's patient ate some holly leaves and berries and some fragments of yew, and died in all probability within an hour of taking the leaves. The symptoms preceding death consisted of rapid collapse, convulsions resembling epilepsy, and failure of the heart. At the post-mortem examination, besides the holly five grains of fresh yew leaves were found in the stomach.

Although in the manner of death there was a great resemblance between the two cases, yet it should be noted that in his case the amount taken was very small, and had only been recently taken.

It so happens that in March, 1894, a patient in The Retreat (Mr. E. R., aged 41) swallowed a sprig of yew with suicidal intent. He had been but a week in The Retreat, and before admission had made two suicidal attempts. The yew was taken on the morning of March 30th, when I was from home, and the patient himself reported the matter to my colleague, Dr. Mackenzie, in the evening, saying that he did not feel well and that he had a headache. An ounce of castor oil was at once given with some brandy, and during the night the yew was passed. The quantity was about four grains. The next day the patient said he felt as usual.

In view of the case quoted by Dr. Deas it would seem probable that this very small quantity of yew was beginning to affect the patient, but that the castor oil prevented further trouble.

I have to thank Dr. Urquhart for furnishing me with particulars of another case of recovery from yew poisoning. An elderly female dement at Murray's Royal Asylum was observed

to become suddenly collapsed and pale. Some fragments of yew leaves were lodged in the mouth, and the stomach was at once washed out, after the administration of an emetic. There was less than a teaspoonful of chewed leaves in a recent state. Castor oil and stimulants were given, and the patient soon recovered.

Cases of poisoning by yew are but rarely recorded in medical literature. The best account of the subject I have seen is in a work entitled *The Yew-trees of Great Britain and Ireland*, by Dr. John Lowe, published in 1897. Not only does this give an excellent account of poisoning by yew in men and animals, but the literature of the subject is fully dealt with. Much of the information given subsequently has been derived from this book, which is likely to be a standard work on the yew for a long time to come.

In commenting upon Dr. Deas's case, Dr. Lowe suggests that either some other cause of death existed or that the patient had chewed a much larger quantity of the leaves, swallowing the juice, since he is convinced that five grains of the leaves is too small a quantity to cause death.

This illustrates one of the difficulties which surround this subject. The uncertainty of the effects of yew has been a cause of perplexity for a very long time, and the historical notices collected by Dr. Lowe are remarkably conflicting, it being impossible to reconcile the statements made by the various observers.

Dr. Balding, of Royston, in the *British Medical Journal*, 1884, related the case of a servant girl aged 24, who complained of headache one evening, but was able to do her work, and the next morning was found dead in bed. She had not vomited. Four or five pieces of yew leaves were found in her stomach post mortem. There was reason to believe that the yew was taken for an improper purpose, as she was five months' pregnant.

Three cases, quoted by Dr. Percival, of Manchester, in 1774, are noteworthy. Three children were each given a spoonful of the dried leaves for worms. No effect being produced, they each were given, two days later, a second spoonful of the fresh leaves. Two hours after the last dose the children stretched and yawned and became uneasy; the eldest had abdominal pains and vomited, the others had no pain. It is expressly stated that no agonies accompanied their dissolution.

A case very similar to that quoted by Dr. Royston is

recorded in the *Report* for 1878 of the Shropshire and Montgomery Asylum, and I am indebted to Dr. Strange for sending me the account of the case.

Patient, female aged 27, ate yew leaves obtained from the front grounds of the asylum. At bedtime she was in her usual health, and at 6 a.m. the following morning she was found dead. A large quantity of leaves was found in the stomach and intestines. In this case the jury decided that the case was one of suicide, and so it was returned, although Dr. Strange considered the death was accidental.

It is well known that the fleshy pericarp of the fruit is not injurious, but the seeds are poisonous, and several cases of death from eating the fruits whole have been recorded. When I was a schoolboy it was a proper thing to suck the yew berries, and having disposed of the juicy-red envelope to reject the hard seeds within. We were evidently well brought up. I find that the same practice continues to exist in the same school, and I believe it is common elsewhere.

That yew is hurtful to cattle is universally known, but the experience of farmers is very conflicting. Numbers of cases are recorded where very small quantities of yew have caused the death of cattle and horses, while one hears of farmers who say their cattle regularly browse off yew trees with impunity. Many explanations of this uncertainty in the effect of yew have been given, but none are thoroughly satisfactory.

There is reason to believe that under some circumstances cattle living amongst yew acquire a tolerance and so escape injury, and it is also possible certain soils may grow a more poisonous variety than others.

The most likely explanation is that the male and female trees differ in their poisonous effects; and several observers state that the active principle, taxin, is found much more abundantly in the male than the female trees. (It will be remembered that the yew is dicecious, and the sexes are distinct and on different trees.)

The *Field* for October 5th, 1895, gives an interesting account of the effects of yew on animals, and describes an experiment made at the Royal Veterinary College, when an attempt was made to poison some cattle and horses with yew clippings. After considerable difficulty the animals were induced to eat the yew freely, but they were none the worse. It is, however, significant that it expressly states that the yew was well covered with berries, and we may safely assume that the clippings were from female trees.

Dr. Ernest Colby, of Malton, has told me of a case in which a horse having lost the companion of many years, a pony living in the same field, became wild and excited. Next day the horse was found dead, having broken down a fence and eaten largely of yew. Dr. Colby tells me that he and the owner deliberately formed the opinion that the horse committed suicide. However that may be, it was found that the leaves of the male plant had been eaten.

The balance of evidence is decidedly in favour of the opinion that the male plant is more poisonous than the female.

The physiological action of yew is due to an alkaloid, taxin, which has not as yet been satisfactorily isolated. There is but a grain and a half of taxin in a pound of the leaves. It is not soluble in water, hence decoctions of the leaves are not poisonous in high degree.

Taxin has a decided action upon the heart, and in the case which occurred at The Retreat death was probably due to its cardiac effect.

Yew has been considered by many authorities to be a cardiac tonic of considerable value. Dr. Lowe says, "I have undertaken a large series of experiments with taxin made upon myself at various times. The tracings of the pulse show beyond doubt that it is a cardiac tonic of no mean value. The heart's action is decreased in frequency by small doses, such as the one twentieth to one eighth of a grain; at the same time the cardiac pressure is very distinctly increased. These effects I have found to be durable. In larger doses it generally depresses the heart's action. On the whole it contrasts favourably with digitalis and convallaria, and is worthy of more extended observation."

Before the drug can be trusted it would, however, seem necessary that the chemical characteristics of the alkaloid contained in yew should be fully investigated, so that a really reliable and uniform substance is available. One requires to know the explanation of its apparently capricious effects before confidence can be placed in yew or its active principle as a medicinal agent.

The manner in which yew causes death is very remarkable. There are usually no premonitory symptoms whatever. In a few cases there has been a little headache, and in one or two some intestinal disturbance; but in the vast majority death has occurred with alarming suddenness.

Seeing that yew is within the reach of almost every one, it

would seem well that the general public should remain ignorant of these matters, since were it generally known that sudden and painless death awaited those who eat a handful of yew leaves, cases of yew poisoning instead of being rare might become alarmingly frequent.

With reference to the use of yews in gardens and pleasure-grounds of asylums, the Scottish Commissioners in Lunacy issued a circular to the following effect in 1871:—"Three cases of poisoning by yew leaves or yew berries have lately occurred among the inmates of asylums, two of them ending fatally. In all these cases the leaves or berries appear to have been obtained by the patients from the evergreens used for purposes of decoration. Your attention is directed to the occurrence of those accidents, in order to suggest the propriety of not employing the yew in the way indicated, and of removing any yew plants which may exist in the grounds."

Dr. Deas, in 1876, stated that yew should be excluded from the grounds of asylums in all places frequented by patients likely to pick and eat fragments of shrubs within their reach.

After the second case recorded I came to the same conclusion quite independently, and it was with considerable regret that I ordered the removal of the yews from those parts of the grounds to which suicidal or troublesome patients have access. A well-grown yew is one of our most beautiful trees, and a yew hedge is more lasting and more uniformly close than any other; hence the exclusion of the tree from the grounds of asylums materially impairs their beauty. Still yew is not the only beautiful evergreen, and the deprivation can scarcely be said to be serious compared to the risks run if yews are within the reach of demented or suicidal patients. It would seem prudent, in planting yews in borders and other places not readily accessible to patients, to be careful to select the female trees, and so reduce the possibilities of accident. The Irish yew is, I believe, almost invariably female.

As regards the internal decoration of the wards, it is evidently advisable, except under special circumstances, to exclude yew altogether. Our painful experience at The Retreat three years ago has resulted in considerably less effort being made in decorating the wards and day-rooms with evergreens at Christmas time, and I must confess that the change has relieved the staff of much heavy though self-imposed labour; at the same time it has had a beneficial effect as regards wall-papers and paint, whilst from the patients'

point of view I do not think Christmas has passed in any degree less comfortably.

*Case of Acute Mania occurring in a Boy.** By M. B. RAY, M.B., L.R.C.P.Ed., Assistant Medical Officer, West Riding Asylum, Wadsley.

The following case of acute mania is of interest chiefly on account of the fact that it arose at a time of life when one does not expect to find acute insanity. Of course cases have been recorded as occurring in very early life. Puberty is, however, generally looked upon as the first critical period in the life of the individual.

The age of the boy, fifteen, might make one inclined to regard the case as one of pubescent insanity; but as there were practically no signs of puberty present, I think we are justified in regarding the case as one of acute insanity arising during boyhood.

I recently had a case of acute melancholia in a girl under observation, the notes of which were published in the *Quarterly Medical Journal* for April, 1897.

The patient, J. W., a boy aged 15, was admitted into Wadsley Asylum on 6th September, 1897, under the following medical certificate.

Facts observed.—"Rambles and cannot keep still a moment. Shouts and talks nonsense constantly; cannot speak connectedly for a moment. Talks about cutting peoples' throats."

Other facts communicated.—"Father states that patient has been off his head some days. Has had to be held in bed, and cannot keep quiet a moment. (Not epileptic, suicidal, or dangerous.)"

Has been insane four days. Cause stated to be the death of his mother. Family history good. No relatives insane as far as can be made out.

History of onset.—His mother died some months previously, and the lad had brooded a good deal over it. He is of a neurotic habit, and was often noticed to worry over small matters. The first noticeable action that he did was to tell one of his Sunday school teachers that he intended to make a speech the next day at a meeting he was in the habit of attending. As he was of a shy, retiring disposition, this naturally excited some comment. He rose the following day, which happened to be Sunday, went to Sunday school and church as usual. In the evening he suddenly began to sing and became very restless, walking about the room and putting

* Read at the Meeting of the Northern Division of the Medico-Psychological Association, October, 1897.

the pictures, &c., straight. On retiring to bed he talked and rolled about, shouting and singing, and at times seemed in great fear. His father tried to soothe him, but without avail. He remained very restless and excited during the next few days, and it was found necessary to remove him to the asylum four days later.

State on admission.—A boy of somewhat under the average height for his age, thin and ill-nourished. Shoulders high, with slight stoop. Hair light brown; irides brown; pupils equal, and react to light and accommodation; palatine arch normal; eyes placed widely apart; skull broad in frontal and parietal regions. The voice is still shrill, and there are practically no signs of puberty present.

Respiratory system.—Expiration prolonged at right apex; has a short dry cough at times.

Circulatory system.—Normal.

Alimentary system.—Tongue furred; breath offensive; bowels irregular.

Nervous system.—Knee-jerks almost absent on both sides; no clonus; superficial reflexes normal; gait, co-ordination, and speech normal.

Mental state.—He has a wildly excited appearance, stares about him, and points to surrounding objects and people; he is very restless, constantly struggling and turning about; tries to climb up the doors and walls of the room; rolls about on the bed, stripping off his clothing. He is very resistive, and resents anything being done for him. He keeps up a continual incoherent chatter, will not converse or answer questions; repeats in a perfectly meaningless manner any phrase he may hear in the ward. Has probably hallucinations of both sight and hearing.

Progress of case.—For the first few days he remained very restless and excited. He then became quieter, but inclined to be very emotional at times. During the next few days he improved rapidly, and became quite cheerful, rational, and orderly. For about a week he continued improved, when he had a relapse, which came on suddenly. He had been talkative during the night, and next morning was again very restless, excited, and dirty in his habits. He remained in this state for about four days, and again began to improve. He was soon much quieter and more settled, but at times was very emotional for no apparent reason. He then developed suspicions about his food, saying it was poisoned, and that his mother had been poisoned. He also said he was being influenced by evil spirits, which he attempted to exorcise by various antics. He continued in this deluded irrational state for about a week or ten days, when these ideas gradually faded away, and he was practically convalescent two months after admission. He was discharged on a month's trial a fortnight later, and finally discharged "Recovered" on December 30th, 1897.

Discussion.

Dr. McDOWALL, after thanking Dr. Ray for his paper, said that it was curious that the same subject had been treated by Dr. Fletcher Beach at the meeting of the South-Eastern Division over which he (the President) had recently presided. He could not call to mind that he had ever met with similar cases to those recorded by Dr. Ray, though he had frequently met with moral insanity in children, of which he quoted instances.

Dr. BAKER (York) thought such cases should not be sent to public asylums if any other provision could be made for them.

OCCASIONAL NOTES OF THE QUARTER.

The Darenth Scandal and Scapegoat.

The members of our Association must have read with amazement of the dismissal of a medical officer by the Metropolitan Asylums Board on a report by a special committee, which gave no adequate reasons for thus ruining the career and blasting the prospects of a medical man who had served them for sixteen years, with such honour and ability that he had been promoted to the post of Acting Superintendent.

The facts of the case are as follows:—A female patient in the Darenth Imbecile Asylum was reported in July last by the Acting Superintendent (Acting Superintendent under the Asylums Board means Superintendent's work with Assistant Medical Officer's pay) to the chairman of the committee as being *enceinte*. The patient made a charge against a lay official (since dismissed for another offence). Counsel was consulted by the committee in regard to the possibility of prosecution, and a communication was made to the Commissioners in Lunacy. The patient died in November from exhaustion after childbirth. It should be noted that the patient became pregnant at a date prior to the appointment of the Acting Superintendent.

The special committee appointed to investigate the case reports that the Acting Superintendent (and his assistant) "spared no pains and neglected no attention to the patient during her confinement;" but they make a leading count in their indictment against him that "he committed an error of judgment in undertaking the delivery of the woman."

The other counts of the indictment are—that no entry was made in the case book that the woman was *enceinte*; but, considering that the chairman, the committee, the Commis-

sioners in Lunacy, and a learned counsel must have spent much time, talk, and voluminous correspondence over the case, it seems absurd to complain that no entry was made in the case book. The only entry that could have been made would after all have amounted only to a diagnosis. This charge is too trivial to demand consideration.

The other charges, if they can be so called, are, firstly, that there was no post-mortem examination; but these are by no means the rule in this institution, and the cause of death was quite obvious: and, secondly, that no special report was made to the coroner; but no reason is given why such a special report was deemed necessary. Both these indictments are as trifling as the preceding.

The error of judgment, therefore, remains as the only possible reason within the scope of the inquiry on which the recommendation of the special committee could be based. In regard to this, asylum superintendents would unanimously agree that if the medical officer, backed by the aid of his assistant and the resources of an asylum, had declined to undertake a responsibility which is often delegated to an unskilled midwife in the poorest homes, he would indeed have committed an error of judgment, but that by accepting it he did not. Deliveries are not infrequent in asylums; they are invariably attended by the medical staff, and usually by the junior members of the staff. Such a delivery took place a few months prior to this occurrence in an asylum under this very Board. The only conclusion, therefore, that can possibly be formed is, that this committee was utterly wrong in the only real charge which it makes against its victim, and that the other trivial matters were merely brought in to give some colour to their finding.

The clear inference, from the facts, is that the medical officer has been made a scapegoat. The dismissal under such circumstances of a medical officer of sixteen years' standing, constitutes, we may safely affirm, a scandal of much greater magnitude than the one which it was intended to gloss over.

The immediate result of this will be that the Asylums Board will find some difficulty in obtaining professional men, of character and standing, willing to risk their reputations to the tender mercies of a body so deficient in all sense of justice or right feeling, and that the doubly unfortunate imbeciles will suffer from the lowered standard of medical care.

A more remote contingency is the possibility of such a dismissal being made a precedent for similar action in regard

to other asylum superintendents. The Metropolitan Asylums Board is fortunately unique in its composition, and it is to be hoped in its principles; but it nevertheless behoves all exposed to such a danger, however improbable, to exert themselves in a way that may be deterrent to the perpetration of similar injustice by other bodies.

A board has been said to have no body to be kicked, or soul to be damned. The first part of this proposition is true, sometimes even regrettably true, but the second part is not so accurate. It is, indeed, very much the exception to find a board or committee utterly lost to the recognition of truth and justice. The board in question, however, appears to have no other moral sense than to dread the demon of the daily press, whom it worships by these propitiatory sacrifices of individual victims; and this victim is by no means the first it has immolated.

This profession and the medical press have a clear duty before them, to omit no effort that shall tend to convert this board to the recognition of a higher tribunal than that of the daily penny-a-liner, and to endeavour to gain some redress for the sufferer, who is both a member of our Speciality and of our Association.

Criminal Law Reform.

Various problems in criminal law reform seem likely to receive in the present session a legislative solution. At last the evidence of prisoners may be made legally admissible. The merits and the demerits of this change have been threshed out with unprecedented completeness, so far as the annals of modern legal controversy are concerned. The balance is, we think, on the side of the Bill. But very great precautions will have to be taken by the judges against improper forensic comments on the fact that a prisoner stands on his legal rights, and declines to go into the witness-box. In time such a refusal will no more prejudice a defendant than a reservation of his defence in magisterial proceedings does now. But at first the new procedure will want careful watching. A Court of Appeal Bill has less—but still some—chance of passing. The present arbitrary manner in which the question whether a point of law arising in a criminal trial is to reach the Court for Crown Cases Reserved is decided is utterly indefensible. Perhaps if such a tribunal is established we shall at length get the rules in *Macnaughton's* case revised.

We have always wondered why it has never occurred to some ingenious barrister, in defending a prisoner, to contend and tell the jury that the rules have no legal validity, and to challenge the judge to direct them in accordance with the charge in Hadfield's case. It would be difficult for any judge to refuse to reserve a point of law of such vital importance.

Inebriates Bill.

We cordially hope that the report that the forthcoming Government Bill to amend the Inebriates Acts will deal only with police court cases, may prove to be inaccurate. Such a Bill would be scarcely worth accepting, even as an instalment; for having once touched the question again, in however perfunctory or unsatisfactory a manner, the legislature would certainly leave it alone for another decade. The minimum that can be regarded as acceptable is the enactment of a measure (1) providing for compulsory sequestering, (2) raising the maximum period of compulsory detention from one to two years, and (3) simplifying the procedure relative to admission and recapture. We trust that magisterial bodies throughout the country will follow the excellent example of the Manchester Justices in pressing the Home Office for a really serious measure of reform. The evidence furnished by the recent report of the Lunacy Commissioners that the insane population of the country is increasing, constitutes a good reason for the exhibition of some insistence in the matter; and much as a readjustment of the powers of the Lunacy Commissioners and the various local authorities in regard to pauper lunatics is needed, we shall be quite content to wait another session for it, if only an adequate Inebriates Bill is passed.

Medical Confidentiality.

The public discussion of the legal aspects of the question of medical confidentiality, to which a recent *cause célèbre* has again given considerable prominence, has, in our judgment, proceeded too largely on the assumption that the sole point at issue is whether confidence is a necessary implication in the contract between doctor and patient. The basis of the doctrine of confidence must, in truth, be sought far less in any contractual relationship than in the policy of the law. The law recognises that there are certain relations in which it is of high social importance that the utmost mutual confi-

dence should prevail; and in order to secure the existence and preservation of such confidence, attaches a privilege from disclosure to communications made in the course of them. A typical instance is the relation of legal adviser and client. A lawyer retained to defend a person accused of crime, for example, is privileged absolutely, if the client so desires, from giving any evidence as to statements or admissions made to him by his client, nor can he get rid of the privilege by discharging himself from the retainer (*Reg. v. Cox*, 1885, 14 Q. B. D., 153). Medical confidence comes well within the *raison d'être* of this class of cases, and although the courts have not in England accorded it a privileged position (see *Duchess of Kingston's case*), there can be little doubt that if the medical profession would steadily put their case on the ground of public policy instead of on any contractual obligation they would make good their claim. They do not stand in a much worse position at present than Roman Catholic or Anglican priests. Although Lord Chief Justice Kenyon, Chief Justice Best, and Baron Alderson, in well-known *dicta* favored the privilege of penitential confessions, the only *ruling* on the subject (that of Justice Buller in *R. v. Sparkes*) was on the other side. And yet who can doubt how the controversy would issue if it were raised again and fought out to the end. The exercise of the privilege would of course have to be tempered with discretion, and by a sense of honour. But the medical man is not less competent to exhibit these qualities than the lawyer or the priest.

*Premature Discharge and the Increase of Lunacy in the
Metropolis.*

The report of the Asylums Committee of the London County Council states that there are no less than 19,954 imbeciles and lunatics under their charge. The existing asylums are already insufficient for this number, and as the yearly increase is about 700, two new asylums (at Norton Manor and Bexley) are already projected.

Dr. Claye Shaw in his annual report frankly suggests that by the too early discharge of patients the propagation of insanity by heredity is favoured; and Dr. Robert Jones reports that heredity is found in only 26 per cent. of his cases, but that 70 per cent. did not reply to this question, and that probably many do not own to it where it exists. The prejudice against admitting the existence of heredity is no new

thing, however, and the ascertained cases of heredity are only 3 per cent. above that reported in the Commissioners' returns at any time in the last thirty years; so that this alone would not go far to account for the accumulation of the insane.

The premature discharge of patients which Dr. Claye Shaw deploras is a much more important matter, as it may lead to relapses of an incurable character. That relapses are unduly frequent seems to be borne out by the fact stated by Dr. Robert Jones, that previous attacks and heredity are reported in 49 per cent. of his cases, while these causes account for only 41 per cent. in the quinquennial, 1890 to 1894, in the Commissioners' tables. As heredity accounts for only 3 per cent. of this excess, relapses must be 5 per cent. in excess of the average for England and Wales. One point of interest, therefore, is whether these relapsed cases do not furnish a large proportion of incurable cases. If this is true, premature discharge is responsible for a double evil, viz. the propagation of hereditary insanity and the increase of incurable insanity.

Harward v. The Hackney Guardians and their Relieving Officer.

This action for false imprisonment as a lunatic arose out of the plaintiff having been removed to the workhouse infirmary by the relieving officer, acting on information received from plaintiff's wife. The jury returned a verdict for the plaintiff for £25, on the ground that the relieving officer did not exercise reasonable care to satisfy himself that the plaintiff was a dangerous madman.

"Reasonable care" is a very uncertain quantity; has, indeed, about the definiteness of a "lump of chalk." If the relieving officer in a similar case had not acted on the information, and the alleged lunatic had committed some criminal act, the relieving officer would have been censured.

"Reasonable care" would seem to demand that the parish official should obtain medical advice in all cases where this is possible; but such procedure is probably opposed to the principle of false economy which so often actuates the guardians in these matters.

The After-care Association.

The Annual Meeting of this Association was held on 31st January at the house of Sir William Broadbent, who presided. Sir William gave a brief but able sketch of the aims and work of the Association, concluding with the remark that he knew of no society which did so much work so economically on so small an income. The report showed that the total subscriptions, &c., for the year amounted to £561; that 147 cases had been before the Council, of whom the majority had been suitably helped.

Mr. Mocatta promised the Association a donation of £25 if the subscriptions for the year reached £1000, and the Council makes a special appeal to medical superintendents to aid them in obtaining this sum by means of local meetings, concerts, or bazaars.

The British Medical Association and its Council.

A deadlock seems to have arisen on the point whether the Annual Meeting controls the Council, and whether its resolutions are so binding that the Council is obliged to put them in force.

The Council, on legal advice, maintains that as it is elected by the branches it is therefore responsible to them. The Council claims the right of adopting or disregarding resolutions passed at the annual meeting, since a small vote might be easily passed at such a meeting, owing to small attendance and owing to the necessary predominance of local attendance.

The Council is elected to manage the affairs of the Association, and it would certainly seem right that it should have the power to hinder a chance or local minority from imposing its will on the majority. If the Council at any time disallows a resolution which is the will of the majority, there can be little doubt that means would be found to render the Council obedient. The power is only a useful check against hasty, impulsive, or factious movements.

The matter is of importance, however, and should be definitely settled, not by litigation, but by definite resolutions of the branches, or by a poll of all members of the Association.

Since the British Medical Association decided that the branches should have an active interest in the central management, new life has poured into it from all parts of the Empire.

Excepting a handful of noisy faddists, who, by persistent beating of tom-toms, snatch mass votes at the annual meetings, the members generally are satisfied that the Council is formed in a fair and impartial manner, and capable of the best results.

That is certainly a very strong position, and one which would naturally follow on similar procedure being adopted by the Medico-Psychological Association. In the administration of the affairs of a widely spread society representative members should be elected by districts or divisions.

Enteric Fever in Asylums.

Under the heading "Insanitary Conditions," the Annual Report of the Commissioners in Lunacy gives, year by year, a brief account of any occurrence of zymotic disease in asylums. In these reports typhoid fever takes a prominent place. It is quickly apparent on perusing accounts relating to typhoid in asylums, that in these institutions it is not a question of water- or milk-borne disease, but of a malady associated commonly with local defects of sanitation. We doubt if the history of enterica as it occurs in asylums is much known outside the lunacy speciality, and we think that if trustworthy material for a study of the disease as it occurs in asylums were accessible, a memoir of interest could be presented, particularly instructive as showing the association of enterica with defects of drainage, alone or in combination with other insanitary conditions. Sometimes no defects of drainage at all are found in connection with the outbreak; a curious instance is given in the fiftieth report of the Commissioners, where a series of twenty-five cases occurred in an asylum, most of them originating in one portion of the building. These were attributed to the foul state of the old air-flues, and their disturbance in the process of cleaning. Asylums would appear to afford peculiar facilities for the illustration and investigation of the connection between typhoid and local defects of sanitation. The legacy of faulty drains, with aggravated local defects of these—drains laid from twenty to fifty years ago; the local overcrowding; the risk of admission of a case of the disease in the incubation period or in an early stage of invasion; the faulty habits of the inmates, enhancing the risk of spread by contagion—these are some of the conditions which obtain particularly in asylums. As regards investigation of sanitary defects, these

institutions are also unusually circumstanced; there is the combination of medical man, clerk of the works, engineer, plumber, mason, on the spot, with a full knowledge (if—and the proviso is not unimportant—plans have been conscientiously kept up to date) of the drainage arrangements, whose business it is to discover and remove sanitary defects which may be associated with such a disease as enterica, with all possible dispatch. It is instructive to note how frequently local defects of drainage are found in connection with the outbreak of the disease in asylums, and the disappearance of the latter on remedying these defects. But whilst the practical result in these instances of local occurrence is highly satisfactory, we are unfortunately in most instances entirely ignorant of the mode of introduction of the typhoid germ. And even if it can be established that a case has been originally introduced from without, and we are able with plausibility to suggest that thus the contents of faulty drains have become infected, that amounts to very little in the way of explanation, granting even a local leakage to have been discovered. It is very far from clear in, we think, the majority of instances how infection is carried to the inmates of a ward in the vicinity of which a leaky or choked drain is found. The evidence, as far as we know it, is against the conveyance of pathogenic organisms (excepting *Staphylococcus pyogenes*) in sewer gas. And in the majority of cases it is most difficult to imagine how the *materies morbi* could be wafted into a ward with dried particles upon which it may have lodged.

Formalin as a Disinfectant.

Formalin is a substance which has already attracted the attention of our pathologists, and promises to be, perhaps, the most useful addition to our laboratory armamentarium which has been made for the last generation. It has been steadily growing in favour also as a disinfectant, and bids fair to supersede perchloride of mercury in the disinfection of buildings. We would draw the attention of our readers to an article on "Household Disinfection by Formaldehyde" in the *British Medical Journal* of December 25th, 1897, by Drs. Wyatt Johnston and D. D. McTaggart. These observers, working in Canada, have confirmed the observations made in England, France, and the United States as to the value of this drug. They claim that it is effective, cheap, and not destructive. In the method which

they adopt the gas is liberated under pressure from a mixture of equal parts of formaldehyde and 20 per cent. calcium chloride solution. They use an apparatus made by the Sanitary Construction Company of New York. They say "we found it was advisable to use larger quantities of formaldehyde than are generally advised, and our results, at first disappointing, became very satisfactory upon using one pound of formaldehyde per 1000 cubic feet."

Dr. Rambaut, of the Richmond Asylum, Dublin, tells us that experiments which he made last autumn by culture methods gave strong proofs of the value of formalin as a sterilising agent, the apparatus used in that institution being Trillat's for the generation of formic aldehyde vapour under pressure from an aqueous 30 per cent. solution of formaldehyde, free from methyl alcohol, containing calcium chloride in solution, and known in trade as formochlorol.

Chargeability of Irish Lunatics.

The methods which Irishmen adopt for seeking redress of grievances are probably beyond the comprehension of any other people.

We mentioned in the January number of this Journal that the Governors of the Richmond Asylum and the Guardians of the two Dublin workhouses contemplated requesting the Chief Secretary for Ireland to introduce provisions effecting a law of settlement into his new Local Government Bill. A deputation, representing the three bodies in question, accordingly waited upon Mr. Gerald Balfour on January 18th. This deputation added to its original programme a request that the Treasury rate in aid should be increased from 4s. per head per week to some larger but unspecified sum, and this although it would appear from a subsequent correspondence in the newspapers that the Chief Secretary "had written to say that the speakers must confine their remarks to the question of 'the deportation and chargeability of lunatics.'" One member of the deputation, being a prominent poor-law guardian, struck new ground by complaining that the lunatics were not taken proper care of. It turned out that he meant the lunatics in the workhouses; and while nobody denied the justice of this confession, its pertinency to the question at issue is by no means clear. Another speaker boldly suggested that the Treasury should contribute half the expense of maintenance, and that the other half should be levied by

a national as distinguished from a local rate. This suggestion, by the way, left the grievance of deportation of Irish-born lunatics from England and Scotland untouched. One gentleman dwelt at much length on the expense which the district was put to by the erection of a new asylum.

The speakers do not seem to have agreed beforehand as to the matters to be discussed, or the proposals to be made, and they do not appear to have had professional advice, either medical or legal.

The natural result ensued. The Chief Secretary pitted the arguments of one against those of another, and gave no satisfaction to any one. Talking apparently on the assumption that the expenses of maintenance in the Richmond district were higher than anywhere else in Ireland, he recommended economy. As for improving the condition of the workhouse lunatic, that would, of course, cause increased expenditure, which all parties seemed to deprecate. He disclaimed any intention of increasing the Treasury grant. As for widening the area of taxation for the maintenance of lunatics by nationalising the rate, he slyly pointed out that such a proposal, if accepted, would have the result that local government, as regards that particular function, would have no *raison d'être*. He was not sympathetic with regard to framing a law of settlement, thought the absence of such a law was on the whole an advantage, and disliked the idea of altering the simplicity of the law in Ireland in respect of this matter. Obviously he was unwilling to burden his Bill with a subject which does not necessarily belong to local government as such.

The Government and Lunatic Asylums.

Under the above heading there appeared in a Dublin daily paper on the 4th of February the remarkable report which, with slight abbreviation, we subjoin. We should premise that Granard is a Poor Law Union in the County of Longford, and that the County of Longford is portion of the district of the Mullingar Asylum.

At the Granard Board of Guardians meeting, Mr. A. E. Edgeworth, D.L., said he would like to propose a resolution which he had been requested to bring forward, and one which would be a matter of pleasing consequences to the ratepayers. It was a resolution to the effect that the Government be asked to take over the Irish asylums in the same way as they have taken over the

prisons. He had reason to believe that if a strong effort were made to impress upon the Lord Lieutenant and the First Lord of the Treasury the importance to the country cesspayers of taking over these very expensive institutions, it might have a very good effect. He had been requested by repeated letters to leave this matter before the Granard Board. One reason why the Government should take over the asylums was that they only gave a maintenance grant of £10 yearly, which was totally inadequate. Besides that, the Government appointed the Board of Governors and the Board of Control. Sometimes the Board of Control did things which entailed expenses and which the Governors could not resist. At one time the Governors decided on making some wooden flooring, and they had carried it out when a sealed order came from the Board of Control that it should be done with oak, and that cost a thousand pounds. The asylum had been originally built for 350 patients, and there came into it lately 780, and the Governors had to build a new block. The Governors wanted to expend £8000 on it, but the Board of Control insisted on having £18,000 spent on it, and £3000 on the hospital, which came to £21,000, or £13,000 more than the Governors wished to spend. Then the Governors wanted to have the asylum heated at a small cost, but the Board of Control insisted on the "Vacuum" system, which tended very much to make a vacuum in the pockets of the ratepayers (laughter). Those were cases in point to show that the Government should take over the asylums. The Government calls the tune, and the Government should pay the piper. The Chief Secretary admitted that the Government should increase the maintenance grant, but they said "no," that what they wanted was that the Government should take over the asylums altogether, and then let the Government try any amount of experiments for which the English ratepayers would help to pay. This resolution, if passed, would be brought before very influential members of the Cabinet.

The resolution was passed unanimously.

This method of discussing the "financial relations" of lunatic asylums has that charm and freshness which are peculiarly Hibernian. Anywhere except in Ireland a county magnate and asylum governor who used such language about his own asylum might be esteemed "gey ill to live wi'"—like the late Mr. Carlyle. If, as we gather from this report, which must surely be incorrect, however, the governors of the Mullingar Asylum, or the Board of Control for them, can accommodate 780 patients (or even half that number) for £21,000, we can only wish that such "extravagance" could be made universal throughout the three kingdoms.

It is perhaps not strange that the Irish country gentlemen, who have suffered much of late years, should regret that transfer of power to another class which the Bill will effect, and should be anxious that this transfer may not injuriously affect the insane. It is, however, very singular that, as we learn from the Irish papers, the Granard resolution was adopted subsequently, not only by the Mullingar and several other Asylum Boards, but also by some popular Boards of Guardians. That the last-named bodies should have taken up anything so contrary to their constant contentions shows how little they understood what the proposal amounted to, and how much needed was a broadening of the basis of asylum management such as will enable "the man in the street" to take some intelligent interest in what are, after all, his own affairs. There is probably only one class with whom the change desired by Mr. Edgeworth would be popular—office seekers. To carry out from a State centre the duties heretofore performed by local governors would require an army of officials.

In our view the adoption of State management and State control would be an unfortunate and retrograde movement. Government in Ireland is not paternal, is not even grandmotherly. The source of wisdom is no longer recognised (if it ever was in the distressful island) as springing from the Imperial Government, and the centre of political power has entirely shifted. Asylums governed by the State would be hateful both to the public and to the patients. The cast-iron discipline of a prison would supersede the freedom which is possible under popular control, while at the same time no central government in Ireland will ever again be strong enough to support an unpopular institution against attacks, so that at any crisis of difficulty the real ruler of the asylum would be the proprietor of the loudest of the local newspapers, or the most excitable of the local politicians. Such indirect popular control is wholly pernicious.

Irish Local Government Bill.

The long promised Local Government (Ireland) Bill was introduced into the House of Commons on February 21st by the Chief Secretary to the Lord Lieutenant in a speech the singular ability and lucidity of which evoked flattering comments from all sides of the House.

Mr. Gerald Balfour's introduction contained numerous

references to lunacy questions, and we find a curious indication of the interest which such subjects are beginning, under the pressure of recent events, to attract, in the fact that there were no portions of his opening speech which were received with more satisfaction by the Irish members, and none which attracted a larger share of attention in the Irish press.

From the old-time standpoint the Bill, so far as it deals with lunacy affairs, may fairly be called revolutionary. It places the management of asylums, financially and otherwise, on the same broad democratic basis as in England.

The most important and fundamental portion of the Bill as to asylums is contained in Section 9, which runs as follows :

“9.—(1.) It shall be the duty of the council of every county to provide and maintain sufficient accommodation for the lunatic poor in that county in accordance with the Lunatic Asylums Acts, and if it appears to the Lord Lieutenant that any council fail to perform such duty, he may order that council to remedy the failure within the time and in the manner (if any) specified in the order.

“(2.) The duties of the council under this section shall be exercised through a committee appointed by them, and if the Lord Lieutenant fix a number, of the number so fixed; and out of that committee a number not exceeding one fourth may be persons not members of the council.

“(3.) There shall be transferred to the council, acting through that committee, the business of the governors and directors of the asylum under the Lunatic Asylums Acts, and the committee, subject to the general control of the council as respects finance, may act without their acts being confirmed by the council.

“(4.) Plans and contracts for the purchase of land and buildings, and for the erection, restoration, and enlargement of buildings, shall not be carried into effect until approved by the Lord Lieutenant.

“(5.) The county council through the said committee shall properly manage and maintain every lunatic asylum for their county; and, subject to the provisions of this Act, may appoint and remove the officers of the asylum, and regulate the expenditure; and the powers, under the Lunatic Asylums Acts, of the Lord Lieutenant or the inspectors of lunatics, as to those matters, and as to land and buildings, and as to the appointment of governors or directors, shall cease, and also the Board of Control for lunatic asylums shall be abolished.

“(6.) The county council, through the said committee, may, and if required by the Lord Lieutenant shall, make regulations respecting the government and management of every lunatic asylum for their county, and the admission, detention, and discharge of lunatics, and the regulations when approved by the Lord Lieutenant with or without modifications shall have full effect.

“(7.) Where a district for a lunatic asylum comprises two or more counties, this section shall apply with the necessary modifications to those counties and to the councils thereof,” &c.

This brief section, which we may parenthetically say appears to have been accepted with universal applause, revolutionises the entire system of lunacy administration in Ireland. The local bodies are in future to build and own their own asylums, manage their own affairs, spend their own money, employ their own servants, and make their own rules.

Hitherto the Board of Control provided accommodation, built and owned the asylums. The Board of Governors appear to have been merely a sort of tenants, and though, like other tenants, they have latterly agitated a good deal, they did not succeed in securing much addition to their legal rights. Hitherto the Governors have been appointed by the Lord Lieutenant; in future the Asylum Committees, who take the place of the Governors, will hold office from the county council. Hitherto the medical superintendent was appointed by the Lord Lieutenant, the assistant medical officers under His Excellency's sanction, and only the servants (nurses and attendants) directly by the Board of Governors. The new committees will in these respects have powers identical with the English. The salaries and wages of employés were hitherto fixed by Order of the Lord Lieutenant in Council. This vexatious and unnecessary restriction on their powers is removed from the new committees entirely. Each asylum committee will frame its own code of rules, subject to approval as in England, and the Privy Council will no longer be empowered to frame general rules. In this Journal we have often during the last forty years drawn attention to the unsatisfactory nature of the General Rules of the Privy Council. Even if the Privy Council in Ireland had cared about such matters it would have been impossible to frame a working code applicable to a number of differently circumstanced institutions. We have only to hope

that the necessary approval by the Lord Lieutenant will not lead still to too much uniformity in minor details.

With reference to funds for building, it would appear that the county councils will have power to borrow under conditions similar to those laid down in the Local Government Act of 1888, one of the Acts scheduled with this.

As to maintenance, the Treasury rate in aid will be discontinued, but a grant similar in amount (4s. per head per week) will be made out of the Consolidated Fund to the Local Taxation (Ireland) account on behalf of each lunatic in a public asylum. The remainder of maintenance will be met out of a county rate, known in Ireland as the "cess" (or colloquially "cut;" words of interesting etymology, compare Norman-French *taille*). Now half this tax, *as far as relates to agricultural land*, will be in future paid by Government out of a fund derived from the Consolidated Fund, known as "the agricultural grant." How far this will be a relief to local burdens in country districts appears to be disputed among those who have studied the complicated financial clauses of the Bill. There is no concession similar to the agricultural grant provided for the relief of taxation in urban districts, which will, therefore, remain much as before in this respect.

With reference to existing officers, Section 72 provides (clause 1) that "where the business of any authority is transferred by or in pursuance of this Act to any county or district council, the existing officers of that authority employed in that business and not in any other business of that authority shall become the officers of the council of that county or district;" and that "the officers of every lunatic asylum shall be deemed to be existing officers of the governors and directors of that asylum;" and further (clause 14), that "subject to the provisions of this Act, every existing officer transferred under this section shall hold his office by the same tenure and upon the same terms and conditions as heretofore, and while performing the same or analogous duties shall receive not less remuneration than heretofore."

These provisions appear to secure existing rights in a satisfactory manner.

With regard to future appointments, Section 56 provides that—

"(1.) Subject to the provisions hereinafter contained, the county council, acting through their committee,—

“(a) shall appoint for each lunatic asylum a resident medical superintendent, and at least one assistant medical officer; and

“(b) may appoint such other officers as they consider necessary; and every officer so appointed shall perform such duties and be paid such remuneration as the council may assign to him.

“(2.) Every resident medical superintendent shall be a legally qualified medical practitioner of not less than *seven years'* standing, and shall have had experience in the treatment of the insane, and every assistant medical officer shall be a legally qualified medical practitioner.

“(3.) The Pauper Lunatic Asylums (Ireland) (Superannuation) Act, 1890, shall apply to every officer appointed under this section.

* * * * *

“(5.) This section shall be without prejudice to the provisions of this Act respecting existing officers.”

This section introduces the notion of special training and qualification for the post of medical superintendent, and thereby shows the sagacity and alertness of those who advised the promoters of the Bill. But we feel bound to point out that this will not satisfy medical opinion. The qualification laid down is quite insufficient. All medical students now-a-days are required to take out a course of clinical instruction in mental disease, and many of the older men took out such courses voluntarily as students or in the post-graduate stage. These gentlemen might all claim to have had experience in the treatment of the insane. So might any general practitioner of a few years' standing who had treated a dozen or twenty cases of insanity. The subject of psychiatry is a very special one, and requires long study to learn thoroughly. Besides, asylum management is a subject that can only be acquired slowly, and capacity for the important official work and responsibility thrown upon the medical superintendent of an asylum can only come through years of familiarity with such duties. In the interests of the insane the framers of this Bill have recognised that a qualification is needed. They should be urged to make it a full and satisfactory one. We would say that not less than five years' service as assistant medical officer should be required. As this is merely an amplification of a requirement which the Bill admits, Government would

probably adopt such a suggestion if it was urged upon them. As we go to press we learn that this suggestion has been urged by the Irish College of Physicians and by the Dublin Branch of the British Medical Association.

The Bill requires no special qualifications for the post of Assistant Medical Officer. The Chief Secretary was probably not acquainted with the fact that our Association holds an examination and gives a certificate in psychological medicine, and that the Royal University of Ireland does the same. We do not think it would be too much to ask that an Assistant Medical Officer should hold one of these or a similar qualification when appointed, or take out such a qualification within say a year of appointment. We think that such a test, easy though it may be, would be of distinct value.

It is to be noted that the provisions with regard to pension leave this question just as it was before, and just as it still is in England. It is understood that the attendants in the Irish asylums petitioned Mr. Gerald Balfour to take up the matter of pensions in this Bill, and to provide, even at a somewhat less liberal rate than at present, a pension scale which would be fixed, as pensions are in other public services, and would come to its recipients as a matter of right. This he has apparently not seen his way to doing, being probably unwilling to seem to limit the fiscal powers of the new bodies. It is a reform which ought, we think, to be effected, and which is evidently bound to come some time or other.

The Sheppard Asylum, Baltimore.

The development of hospitals for the insane of the middle and wealthy classes of the United States of America has not been checked, as with us, by the intervention of State aid. The magnificent buildings of the Maclean Hospital at Waverley, near Boston, have been recently erected in conformity with the latest ideas of asylum construction under the wise direction of Dr. Cowles. They have already been supplemented by gifts of detached houses, so that the accommodation for all classes of private patients is on a level with the demands of the most fastidious.

The Sheppard Asylum, near Baltimore, has lately been enriched by the munificent bequest of the late Mr. Enoch Pratt under circumstances of special interest. We briefly recount the history of this institution, which has the advantage of the able services of Dr. E. N. Brush as medical

superintendent, in the hope that we shall yet hear of similar charitable projects on this side of the Atlantic.

Mr. Sheppard procured an Act of Incorporation from the Legislature of the State of Maryland, and left nearly the whole of his property to a board of trustees to be used to found an asylum for the insane. He made no suggestion as to the name of the institution; but reluctantly acceded to a proposition that the board, which was in actual existence at the time of his death, should be called "The Trustees of the Sheppard Asylum." He said, "I want no such monument to my living fame." Mr. Sheppard desired to try the "experiment" of ascertaining how much could be done to bring about recovery in cases of insanity by liberal expenditure of money on buildings, nursing, dietary and scientific treatment. He wisely directed that only the income of the trust should be spent, and that the principal should remain intact, anticipating that such a stipulation would permit of the reception of patients gratis or at nominal rates. For that reason it is only within the last few years that the asylum has been in operation.

In September, 1896, Mr. Enoch Pratt, another prominent citizen of Baltimore, died, and by his will left the Board of Trustees of the Sheppard Asylum his residuary legatees, on condition that the name of the corporation should stand as "The Trustees of the Sheppard and Enoch Pratt Hospital," and that the money should be applied in the same manner.

A question has arisen as to whether the change of title proposed would not qualify the honour due to the original founder; but it seems to us that the association of the names of Sheppard and Pratt, *par nobile fratrum*, cannot be regarded as derogatory to the man whose aim was, irrespective of post-mortem fame, to benefit the insane. We should rather expect that Mr. Sheppard's feeling would have been to accept the help tendered by Mr. Pratt in the name of humanity, and to regard imitation as the sincerest form of flattery. We hope and trust that this benefaction will be conserved in the interests of the Sheppard-Pratt Hospital, with which are so intimately connected the future interests of the insane of the State of Maryland.

Since these lines were written we have learned with lively satisfaction that the Charter of the Sheppard Asylum has been amended by the State Legislature in terms of Mr. Pratt's will.

PART II.—REVIEWS.

Recherches sur les Centres Nerveux—Alcoolisme, Folie des Héréditaires Dégénérés, Paralysie Générale; Médecine Légale. Par le Dr. MAGNAN. Paris: G. Masson, éditeur, 1893. Pp. 572. Pr. 12 fr.

This volume is a collection of a number of Dr. Magnan's contributions to mental science, mostly between the years 1876 and 1892, a complement to the first series of *Recherches sur les Centres Nerveux*, published in 1876. Some of the articles were written in collaboration with various colleagues, and communicated to various societies and congresses; others are reprints of lectures delivered at the Sainte-Anne Asylum in Paris, &c. In its present form it is a useful book of reference to the scattered writings of one of the leading French alienists.

For purposes of convenience the contributions, mostly relating to the hygienic and medico-legal aspects of insanity, are arranged into four groups—alcoholism, insanity in the degenerate, general paralysis, medical jurisprudence.

In the first part we are shown the pernicious influence of alcohol and alcoholic beverages on the general health, and on mental diseases generally; the influence of alcohol in the production of general paralysis, and on the descendants of drinkers. We find here included Magnan's well-known and interesting observations on the effects of various poisons (absinthe, furfurol, &c.) which are added to certain alcoholic beverages to give them their characteristic flavour, "bouquet," &c. Much of our knowledge of the association of epilepsy with alcoholism and its causation dates from these observations. "Alcohol is a poison, but becomes a much more dangerous one when associated with the various toxic products which are added to flavour it."

In the second part are nineteen papers relating to the symptomatology, ætiology, &c., and the various forms of insanity in the hereditarily degenerate. From a medico-legal point of view a study of these papers especially is of the greatest interest, as it is in connection with this class of individuals—the degenerate—that some of the most delicate medico-legal questions arise. A warped judgment and imperfect moral sense predispose them strongly to a path of crime; but it is above all among them that obsessions,

uncontrollable impulses, &c., are found, often associated with apparent sanity; hence the importance and difficulty of settling the question of the degree of responsibility which should belong to their offences against the laws. Whether we are in presence of the kleptomaniac, the pyromaniac, the homicidal maniac, the "exhibitionist," &c., the leading phenomenon is of the same kind—an over-excited centre which calls for the sensation or the act which can alone quell it, and which the will of the patient frequently cannot resist. In this second part are included Magnan's writings (with notes of many cases) on sexual perversions, and several articles on the physical and psychical stigmata of the degenerate, and on the association of crime with insanity. The "insanity of anti-vivisectionists" is an article which might be read with profit by a section of noisy agitators who are always with us.

The third part consists of nine articles on general paralysis of the insane, dealing with the symptoms and pathology of the disease, special stress being laid upon its medico-legal aspect.

Finally, in the fourth part, headed "Insanity and Medical Jurisprudence," are included papers on recurrent insanity, on the simulation of insanity, and on unrecognised insanity, with a strong plea for the systematic examination of criminals by medical experts.

La Syphilis des Centres Nerveux. Par le Dr. HENRI LAMY, Paris: G. Masson, Éditeur, and Gauthier-Villars et Fils, Imprimeurs-Éditeurs. Pp. 192. Price 2 fr. 50 c.

This small monograph, one of the series of the "Encyclopédie scientifique des aide-mémoire," forms a useful introduction to the study of syphilitic affections (acquired and hereditary) of the brain and spinal cord, excluding those diseases which, like locomotor ataxy and general paralysis of the insane, are often of syphilitic origin but not strictly syphilitic in nature. The author begins with a description of the pathological anatomy of syphilitic cerebral lesions, in which he draws attention to the importance of inflammation of the vaso-vasorum in the early stages of syphilitic arteritis, and then gives a clear though brief account of the prodromal or preparatory period of cerebral syphilis. This is the period which it is so important not to overlook, for energetic treat-

ment at this time may be of most vital moment to the patient.

While certain forms of insanity in their manifestations may suggest a syphilitic origin, the author quite supports the view that there is no such thing as true syphilitic insanity; but in presence of the observations of Schüle, Foville, Desnos, &c., he is in favour of retaining the denomination of syphilitic pseudo-general paralysis for a certain number of cases which, at all events for a time, present the greatest resemblance to cases of ordinary general paralysis. Syphilitic cortical lesions with partial epilepsy he looks upon as the most curable manifestations of cerebral syphilis; the extreme importance of descending optic neuritis in these cases is wisely emphasised.

Clinically, the following classification of cases arising from syphilitic arterial thrombosis is simple and rational.

a. Transitory symptoms (*e.g.* temporary aphasia) due to ischæmia of the brain.

b. More permanent symptoms arising from true cerebral softening.

c. Bulbar and pontine manifestations due to syphilitic arteritis, and manifestations of cerebral hæmorrhage.

Generally speaking, one may say that, as regards *prognosis* in syphilitic diseases of the brain, it is decidedly gloomy; Fournier's statistics of fourteen deaths and thirty cures in ninety cases are no doubt approximately correct. Dr. Lamy gives a useful summary of the important points to be attended to in the diagnosis of cerebral syphilis (pp. 101—110).

In Chapter iii, on syphilitic diseases of the spinal cord, the great importance of vascular alterations is dwelt upon, and in most cases they are the first involved. The commonest cases are described under the various headings—syphilitic spinal meningitis, spinal paraplegia, transverse myelitis, and acute myelitis. This classification is clinically useful, although one may find all gradations between typical cases of Erb's spinal paralysis (syphilitic) and of transverse myelitis.

The prognosis here is even more unfavourable than in cerebral syphilis; pure meningitic cases are often curable when treated early, but they are comparatively rare cases; chronic or subacute spinal paralysees are frequently incurable, and cases of acute softening are particularly fatal. A few helpful remarks on the often extremely difficult question of diagnosis of these cases closes this chapter.

Chapter iv is devoted to the cerebro-spinal complications

of inherited syphilis, which are even more varied and deeper than those of acquired syphilis. Owing to arrest of development, and to premature birth in these cases of inherited syphilis, the nervous system is particularly liable to be affected, and intellectual disorders are especially constant. The prognosis is especially gloomy.

Le Gâtisme au Cours des États Psychopathiques. Par le Dr. MARCEL MANHEIMER. Paris: Félix Alcan, Éditeur, 1897. 8vo, pp. 194. Price 3 fr.

The importance of the symptom incontinence in nervous diseases generally is sufficient justification for the publication of a work which deals with the subject in a full and comprehensive manner, as Dr. Manheimer does in this work. For, from the medical point of view, its detection and certain features concerning its mode of onset, &c., may help in the diagnosis (differentiation of dementia, advent of stupor, &c.), and especially in the prognosis of some mental affections; from the psychological aspect, incontinence often occurs under curious circumstances in certain psychoses, giving an impression of grossness to psychical tendencies, and may give rise to problems of much interest; finally, it appeals to the mind of those who undertake the treatment of the insane as an important administrative question.

There is some want of agreement among alienists and others as to the meaning to be attached to the French word "gâtisme" (*gâter*, to spoil), so the author gives his definition: "Recto-vesical incontinence, or simple rectal incontinence, or simple vesical incontinence; but in the latter case including only that form which may become complicated with rectal incontinence;" that is, he excludes from his definition that essential incontinence of urine which is generally seen in children.

In his introduction Dr. Manheimer remarks upon the dearth of observations recorded in which stress is laid upon this symptom, and the dearth of literature dealing with its physiology or pathology. The question of incontinence seems at first to have only interested administrators; and it is only since the time of Morel, who first suggested the advisability of making distinctions and subdivisions in the groups of incontinent patients huddled together in asylums, that it has been considered clinically. More recently Schüle, Linderborn, &c., have discussed its pathology in the insane.

Statistics show unmistakably its marked predominance in general paralytics, and the much greater frequency of simple vesical incontinence. In the first of the three parts into which his work is divided Dr. Manheimer discusses the physiology and pathology of incontinence, from its occurrence as a simple spinal reflex to its association with purely voluntary impulses. He adopts the hypothesis of the existence of cortical centres presiding over anal and vesical contractions (as determined by J. Meyer, Sherrington, &c.) as best explaining many of the clinical facts observed. However, one of the important points which may be deduced from this study is that there is an analogy between the anal and vesical sphincters, both as regards the anatomical disposition of their governing centres and their physiological function, which accounts for their association in disease; the vesical muscles, however, whose function is more delicate, and therefore more easily disturbed (a frequent rule in pathology), being often the only ones affected.

The second part—which occupies the bulk of the volume—is devoted to a consideration of incontinence in the various psychopathies, and of its probable mode of occurrence. The great variety in its ætiology, and one might add its great uncertainty, practically preclude the suggestion of a satisfactory classification of cases of incontinence. With the difficulty which exists in the classifying the psychopathies themselves a clinical classification is not practicable; a pathogenic one is still more difficult, for a good deal of hypothesis is assumed in explaining the mechanism of incontinence, so Dr. Manheimer devises a mixed classification, in the divisions of which can be ranged not mental diseases alone, but all brain disorders in which incontinence may be found.

Three large groups of diseases are differentiated :

- a. State of coma.
- β. States of dementia.
- γ. Delusional states.

Under states of coma are discussed the varieties of incontinence which we find in apoplectic conditions, in hysterical sleep and stupor. Here we are dealing with a more or less complicated reflex phenomenon, consciousness being in abeyance.

A very large number of cases of incontinence come under the second category—states of dementia. And in this connection one may remark that the best way of realising how complicated and unsatisfactory is our knowledge of the

pathogeny of incontinence is to read the author's pages on incontinence in general paralysis of the insane. With such factors present as fatigue of the attention, modification of character, enfeeblement of voluntary inhibition, &c., common psychological disorders in this disease (and often associated), and each one competent apparently to cause loss of control over the bladder, how can one decide which is in play in any particular case? especially in presence of paresis, or actual sphincter paralysis of the bladder, which may arise from a spinal lesion, as in tabetic general paralysis, for example.

The incontinence of senile dementia also comes under this group. In one case, notes of which are given, the early appearance of this symptom in a doubtful case of dementia helped in the diagnosis of general paralysis, which was subsequently confirmed. As in general paralysis, the incontinence may be due in dementia to a weakness of the sphincters (paresis; hence it is more frequent when the patient stands or takes exercise, &c.), or may be psychological in origin.

In the third group we are dealing with incontinence as a psychological phenomenon. Subconscious psychological causes the author believes may explain some of the cases; but frequently some illusion, some hallucination, an idea (delusion, obsession), an emotion, or a mixture of these, is the real explanation; and the author endeavours to explain the occurrence of incontinence in impulsive states, in maniacal conditions, &c., on this basis. There is a good deal of interesting matter in this part of the work, but much of it is speculative. The pages on incontinence in cases of partial or total loss of the personality, in which this symptom is frequent, are perhaps the most practical.

The third part of the work is devoted to the question of incontinence in the asylum. The author believes that asylum life in a certain class of cases favours incontinence, and may help to make it permanent. Among the factors which may act in this direction are the disposition of the wards in relation to lavatories, the question of imitation, &c., especially with patients with diminished will and activity; then such factors as laziness, evil disposition, systematic opposition, vague sentiment of grudge, &c., towards attendants and others in delusional cases, &c. He also analyses the evil effects in this direction of isolation and restraint.

Under these circumstances, realising the difficulty which exists in many cases of deciding whether incontinence is

primary or secondary—*i. e.* whether due to the natural or logical evolution of the disease, or occurring as an epiphenomenon attributable to neglect of attendance, or other occasional causes which may be treated—Dr. Manheimer urges that these cases should be, for a time at all events, under attentive and uninterrupted observation in special wards, and that careful notes of them should be taken by their attendants, as enjoined by Von Gudden Ludwig, Linderborn, and others,—a plan already carried out in certain asylums (*e. g.* Hubertusburg). This book is a useful contribution to the literature of the subject, and a testimony to the industry of the writer.

Untersuchungen über die Libido Sexualis. Von Dr. ALBERT MOLL. Bd. I, 1897. Pp. 872. Price 18 mk.

Dr. Moll is well known as the author of two books, on hypnotism and on sexual inversion, dealing with delicate psychological and practical problems in a thorough, skilful, and judicial manner, which is only too rare in fields so inviting to hasty and ignorant investigators. He has now approached another very difficult field in a characteristic fashion, as we may learn from the preface. He here tells us that he has been for a long time preparing to write a large monograph on the sexual impulse, but that he met with so many important unresolved problems on the threshold of the subject that he considered it first necessary to deal with these in a preliminary work. The massive book before us is thus merely the first volume of the preliminary work. This spirit of scientific thoroughness is shown throughout, and if any amateur of that literature which the second-hand bookseller calls "curious," attracted by the title, should come to this elaborate discussion of definitions and of complicated questions in heredity, one may be glad to think that he will for the most part go empty away.

The serious reader will, on the other hand, be correspondingly grateful to Dr. Moll for his careful and minute discussion of general problems which are too often ignored or settled off-hand by those writers who undertake to deal with the sexual impulse in the course of a few pages.

The author takes up his subject at the beginning by a scientific discussion of the various senses in which the term "instinct" has been used, and seeks to define the sense in which it can be used in the region of sexual psychology.

He decides, further, that neither in man nor woman, save as a rare exception, can we trace any impulse that can correctly be called a reproductive instinct. He then sets himself to the chief task before him in the first chapter (occupying about 100 pages), and endeavours to analyse the sexual instinct. His main point here—and it is one of the most noteworthy and prominent points in the work—is the breaking up of the sexual instinct into two distinct instincts, a step which goes far to make the subject clear: the “detumescence” instinct and the “contractation” instinct. By the first term he means the impulse to seek the relief of physical turgescence of the sexual organs; by the second the impulse to seek the embraces of another person, normally of the opposite sex. These two impulses may each exist apart from the other, but normally they are combined to produce the reproductive act; and they may both, Moll holds, be regarded as irresistible and fundamental. Together they constitute what we call the “sexual instinct.” The detumescence instinct appeared much earlier, phylogenetically, than the contractation instinct (in fish, for instance, it constitutes the whole of the sexual instinct), so that the former instinct may be regarded as primary, while the latter is secondary. In individual development it is not so easy to say whether the instinct of detumescence or that of contractation appears first; Moll finds that either may appear first, usually, however, the former, and both of them before puberty: this is the case in animals as well as in man. Moll refers to the important work of Groos on the play-instinct in young animals, and considers that puberty must not be regarded as a necessary condition of the manifestation of either component of the sexual instinct. The contractation instinct may be regarded as a secondary sexual character. Moll supports his position on these points by a consideration of the phenomena in castrated individuals.

In the second chapter the author discusses at great length (over 200 pages), and on the basis of the fullest acquaintance with all the modern literature of heredity, the question of the inherited character of the normal sexual impulse. It is altogether a most masterly discussion, in which the question is treated on the broadest and most fundamental grounds, with constant reference to general scientific literature and to personal experience. The author shows that no organ of sense is absolutely essential to the awakening of the sexual impulse, and that from the standpoint of teleology, of Darwinism, of comparative anatomy, physiology, and psychology it is im-

possible to accept the conclusion of Meynert and others that the normal sexual instinct is acquired. It is inherited, but we must not regard heredity as extending to representations or ideas; it is the reflexes only that are inherited—certain modes of reaction in the presence of stimuli proceeding from the opposite sex. The author's discussion of this important point may fairly be regarded as convincing.

In the following chapter the allied question of the inherited character of the homosexual impulse is discussed, and a conclusion—in harmony with the previous chapter and with the author's book on the subject—is reached that here also we must admit a certain congenital element, and at the least an inherited weakness of the normal mode of reaction.

In Germany there appears to be a certain fear lest the modern doctrines of sexual pathology should lead us back to the old theory of monomanias as formulated by Esquirol. In his fourth chapter Moll deals with this question, treating it with his usual thoroughness and erudition. He concludes that there is no ground for any return to the monomanias. If the dominance of an isolated instinct involves monomania, then we must sometimes postulate monomania of the normal sexual instinct. There are, moreover, great differences between the sexual impulse and, for instance, kleptomania. Not only are the affections once described as monomanias in reality general affections in which a morbid impulse has become rooted, but the sexual instinct has this further distinction, that it is founded in a definite organic condition. At the same time the author does not consider that his position will satisfy the extreme opponents of the doctrine of monomanias; it must often happen that a single psychic symptom alone appears in the foreground, as in many obsessions.

The last chapter of this first volume deals with the legal aspects of the matter, and of course has special reference to the code of the German Empire. Moll accepts a partial responsibility (as admitted by the law for deaf-mutes and children between twelve and eighteen), and points out the objections to the term "partial insanity." Partial responsibility is not equivalent to diminished responsibility. In every case, he insists, we must decide according to the individual facts, as general propositions are valueless.

La Pubertà. By ANTONIO MARRO. Turin: Fratelli Bocca, 1897. Pp. 507. Price 10 lire.

This work, of which the full title is "Puberty studied in man and woman with relation to anthropology, psychiatry, education, and sociology," has occupied its author for many years. Dr. Marro, who is now the chief medical officer of the Turin Asylum, and who has had long experience as a prison surgeon, is the author of a work (*I Caratteri dei Delinquenti*) which, although it has never been translated, is the most precise, careful, and laborious contribution to criminal anthropology which has come from Italy. He is, as Professor Lombroso once described him to the present reviewer, emphatically "a laboratory man." He has no literary skill, and none of that genial enthusiasm and love of large generalisations which distinguish Lombroso himself. While the qualities of his work have secured Marro from the too noisy praise and blame which have surrounded his friend and colleague at Turin, they have rendered it a quarry to which many less original writers have constantly had to go for materials. The present work is full of carefully recorded facts and observations, not always very well wrought together, and impossible to summarise in a brief space, but all the more valuable because they are set down without partiality, and without bias in favour of any theories. The work is largely founded on observations made on the inmates of various Italian schools and institutions, and on more minute and prolonged investigations carried out on the author's own children.

In its general outlines the book begins with consideration of the age at which puberty appears, and of the various influences which modify its appearance; proceeds to consider the anatomical and physiological changes which accompany puberty—in genitals, hair, breast, voice, height, weight, vital capacity, elimination of carbonic acid and urea, tactile sensibility, reaction time,—and considers modifications in character and conduct. Then the anomalies of puberty are studied, and the modifications produced in degenerate subjects. The psychoses of puberty are considered at length, with special reference to the views of German, French, English, and American alienists; and the concluding chapters are devoted to a very full and detailed consideration of the hygiene of puberty, and the treatment and prevention of its morbid variations. A few points may be noted.

It was found that there was a gradual increase in urea, in

relation to the weight of the body, in the years preceding menstruation, but a diminution after menstruation begins; the output of urea is at its minimum during the menstrual period, and at its maximum at the greatest distance from the menstrual period. Even then, however, it never reaches the amount attained before menstruation is established. Marro thus finds reason to believe that there is a real retrogression in the process of organic oxidation in women, lasting throughout the sexual life, and most marked at the menstrual periods.

Observations on the various senses showed that, on the whole, girls and women have a more delicate sensibility than boys and men; but that, especially as regards tactile sensibility, it tends to decrease with age. Olfactory sensibility, which was specially investigated, was found to show certain peculiarities. While more delicate in women, it showed a greater development on the advent of puberty, and, unlike other forms of sensibility, there was no tendency to become obtuse with age. This, Marro points out, is additional evidence of the sexual relationships of the organs of smell in women.

Marro finds, on investigating the records of educational institutions, that there is a physiological period of bad behaviour. A chart founded on the conduct of 3000 boys shows that the ages from thirteen to fifteen are those of worst behaviour, the smallest percentage of well-behaved-being at fourteen. It is curious to note that in the well-nourished social classes, among whom growth is precocious, the epoch of bad behaviour is also precocious. In girls the age of bad behaviour is about fourteen and fifteen, and good behaviour is maintained to a later age in girls who have not yet menstruated. Girls, absolutely compared, are better behaved than boys, except in the important respect of "sins of the tongue."

After giving a full account of the historical growth of opinion in various countries concerning the psychoses of puberty, Marro points out that the German conception of a special form of insanity peculiar to puberty has gradually lost ground in favour of the view which attaches importance to two ætiological factors—hereditary degeneracy and physiological puberty—as imprinting their special seal not only on one, but on all the psychoses which arise beneath their influence. There are, as studied by Marro, three stages in the physiological evolution of puberty and adolescence:

(1) that in which the sexual organs develop and sexual activity awakes; (2) the period of increased growth; (3) the period during which growth is completed. Applying these stages to the interpretation of the insanities of puberty, Marro finds that the first, which extends to the fifteenth or sixteenth year, is marked by few morbid developments, except (in agreement with Gowers) those of epileptic form. The second period, extending to the twentieth or twenty-first year, is, on the other hand, marked by psychoses of every kind, and especially those which, resembling hebephrenia, indicate great disturbance of consciousness. The third period, with which puberty (or, as we should say, adolescence) terminates, shows a notable reduction of psychoses. The special form of insanity manifested must always be in relation with the conditions under which it arises. These various forms are well illustrated by cases. A number of special and peculiar cases are also presented showing the influence of sexual anomalies on the general development, notably on the osseous system (osteomalacia, acromegaly, infantile gigantism). Special reference is also made to the relations between the sexual organs and the respiratory apparatus.

The concluding chapters of the book, on the hygiene of puberty and adolescence, while full of insight and experience, are perhaps less novel than the earlier chapters. The whole work, however, is one on which great labour and care have been expended, and it is in a high degree interesting and instructive.

On the So-called Divining Rod or Virgula Divina. By Professor W. F. BARRETT (*Proceedings of the Society for Psychological Research*, Part xxxii, July, 1897, pp. 282, price 3s. 6d.).

On the Evidence for the Efficacy of the Diviner and his Rod in the Search for Water. By T. V. HOLMES (*Journal of the Anthropological Institute*, vol. xxvii, No. 2, November, 1897).

These two papers may be coupled together as contributions to an obscure subject. The former is important by reason of its length and detail, and the great amount of labour expended upon it. The latter has the advantage of being written by a very able field geologist, and is almost the first attempt to deal critically with the diviner's preten-

sions from the very pertinent point of view of the geologist.

The divining rod, it is scarcely necessary to state, is an instrument—usually a simple forked hazel twig—which is carried by the water-searching diviner (usually a more or less uneducated countryman, in England called a “dowser”), and which moves involuntarily in his hands when (*ex hypothesi*) he is passing over running water; at the same time the dowser usually feels more or less unpleasant physiological symptoms, which are variously described. The divining rod has been known since the seventeenth century, and at the present day is used to a considerable extent in England, especially in Somersetshire and the western counties generally. It has sometimes been considered as mere trickery; this opinion is now abandoned by careful investigators of the phenomenon. The dowser is undoubtedly, in many cases at all events, an honest practitioner of his art; moreover the twig cannot be moved by voluntary muscular movement, and it is beyond question that the dowser often finds water. We still have to discover how the twig is moved, and whether it is by chance, by skill, or by some yet unknown power that the dowser’s successes are achieved.

Unfortunately, it cannot be said that Professor Barrett’s report, while honest and laborious, is a model of investigation. It is a little confused, and, what is of more importance, evidence of very varying value is mixed up together in a way that leads one to conclude that Professor Barrett, while perfectly fair and open-minded, scarcely possesses the sternly judicial temper of mind, and the power of summing up and balancing evidence, which are essential to carry so difficult and complicated an investigation to a really satisfactory conclusion. Moreover, as a physicist, he does not bring to this task any acquired training which is helpful in unravelling the problem; for the only point at which the divining rod touches physics—the assumption that electricity is its motive power—may be dismissed without investigation. A weak point in the report is, further, the large amount of historical investigation which is introduced. However interesting the wonderful stories of ancient writers may be, they furnish us very little help in investigating any natural phenomenon, for we are to-day unable to discover the amount of evidential value which such records possess. Even the reports of contemporary achievements by dowsers, with which a large part of the report is taken up, have somewhat less value than Professor

Barrett seems to imagine. It is true that he has not usually depended on the newspaper accounts sent him by press-cutting agencies, but has also sought verification from the dowzers, their employers, and, if possible, eye-witnesses. But it very seldom indeed happens that any of these people are trained observers, or possessed of any scientific geological knowledge, so that their estimate of the achievement is of little value. This is sufficiently shown by the almost invariable way in which they accept the dowser's own statement that what he finds is a "spring," *i. e.* a strictly limited channel of water which might be missed by a few inches, thus witnessing to a ludicrous ignorance of the geological conditions which usually exist in water-bearing strata. It is when we come to the test experiments carried out by Professor Barrett himself that we feel that we have at least reached something really tangible and decisive. But unfortunately it is just at this crucial point that, as Professor Barrett himself admits, the evidence is weakest. Professor Barrett made two series of experiments, one on a successful dowser called Stears, much respected by all who know him; the other on Rodwell, a Yorkshire youth, who had been said to be very successful. These experiments were conducted with all due scientific care, and, so far as original contribution to the subject is concerned, they form the kernel of Professor Barrett's report. The experiment with Mr. Stears began well, for the rod moved over a spot on level greensward, which (as the gardener, who was not present, afterwards declared) was the site of an old well; afterwards the rod moved at a number of spots, some of which, indeed, were in a straight line; when blindfolded the dowser discovered another set of spots—about a dozen spots were thus marked (a plan is given),—which do indeed show a certain symmetry of disposition, but as no boring was made no conclusions can be drawn. Mr. Stears then remarked that the rod also moved over small masses of iron; accordingly three experiments were made with lumps of iron placed in nine handboxes, all precautions being taken to avoid thought-reading. These experiments were signal failures, the successes being not more than could be accounted for by chance. So that, so far as Mr. Stears was concerned, little definite evidence was acquired. With Rodwell eight experiments were devised and planned so as to cover ground containing concealed wells and pipes of known location. There was one success, three decisive failures, while four of the experiments were inconclusive. Thus it can scarcely be

said that Professor Barrett's experiments have greatly advanced the inquiry. He considers that he was unfortunate in not obtaining more experienced dowzers. Unfortunately the most successful operator, John Mullins, has been removed by death beyond reach of experiment.

In considering this alleged power we have two distinct problems to deal with—the cause of the rod's movements, and the cause of the diviner's occasional or frequent success. Regarding the first point there need now be no difference of opinion. Both Professor Barrett and Mr. Holmes are agreed on this point, and we may thrust aside the crude belief that the movement of the twig is a trick of legerdemain. The movement of the rod is due to involuntary reflex action which cannot be imitated by voluntary muscular action. Dowzing thus belongs to the same group of phenomena as table-turning and automatic writing. The divining rod may be compared to the planchette or the *pendule explorateur*. Professor Barrett proposes the generic name of autoscope for this group of appliances. It should be added that dowzers do not always use hazel twigs; some use watch-springs; some merely spread out their hands; one German operator used a long German sausage. Whatever is used, curious physiological symptoms often occur, and Professor Barrett very reasonably believes that there is often a partial degree of hypnosis.

The second problem—to determine how far the dowser's success is to be set down to chance, to more or less unconscious skill, or to some unrecognised physiological sensitiveness—is much more difficult. It is of course quite possible that the last alternative may have to be accepted. With our present knowledge of the vagaries of idiosyncrasy, and of the aptitude acquired in hypnosis and allied conditions, we cannot assert that this is impossible. But we must first prove that chance and skill are not adequate explanations. Mr. Holmes, who treats the problem with fairness and sagacity, as well as geological knowledge, is distinctly inclined to conclude that chance and skill account for all the dowser's discoveries. He points out, in the first place, that the astonishment caused by the dowser's success is largely due to the fact that the dowser himself, and usually those who employ him, always believe that water-finding is a matter of locating a "spring," which it is possible to miss by a few inches, so that the achievement becomes as wonderful as finding a buried jar of ancient coins. But, as Mr. Holmes points out,

while water sometimes runs in underground fissures, water-bearing strata usually cover acres or miles, over any point in which a well may be successfully sunk. He insists, moreover, that while so-called experts, even if engineers or eminent geologists, may have no special knowledge regarding the best spots for sinking wells, an observant countryman may easily acquire a practical knowledge of the indications furnished by water-bearing strata; and in this connection he refers to the fact, demonstrated by the sites of ancient villages, &c., that primitive man possessed this skill. He concludes that "the available evidence seems to me to suggest no qualities on the part of the diviner beyond practical shrewdness, and a good eye for indications of the presence or nearness of water in surface rocks." Professor Barrett would also admit an element of skill, and he refers to various trifling indications which may suggest the existence of water below; but although he can bring forward no decisive proof, he will not admit that skill will alone explain the dowser's success, and believes we must assume "some peculiar instinct or faculty" having its roots not in conscious experience, but in "the wider realm of subconscious life." He compares the dowser to a pointer, the dog's scent, more delicate than any scientific instrument, corresponding to the dowser's "scent," the nervous excitement of the animal corresponding to the dowser's psycho-physiological disturbance, and the dog's rigid tail to the involuntary motion of the rod. The dowser's art, he believes, affords a "striking instance of information obtained through automatic means being often more reliable than, and beyond the reach of, that derived from conscious observation and inference." Thus the solution of the problem—as between chance and skill on the one hand, and an unknown kind of physiological sensibility on the other—still awaits a decisive investigation.

Manual of Mental Diseases. For Practitioners and Students. By A. CAMPBELL CLARK, M.D.Edin., F.F.P.S.G., Mackintosh Lecturer on Psychological Medicine, St. Mungo's College, Glasgow; Medical Superintendent of Lanark County Asylum, Hartwood. University Series. Baillière, Tindall, and Cox, 1897. 8vo, pp. 484. Price 10s. 6d.

The object of this book is to supply students and practitioners with a concise and readable account of mental diseases. One hundred pages are devoted to the consideration of the

constitution, character, and health of mind ; sleep and its disorders ; and the causation, diagnosis, prognosis, and treatment of insanity. The rest of the book is taken up with a description of the various forms of insanity, idiocy, and imbecility, and concludes with a brief account of the legal and civil aspects of mental disease, and the functions of medical men in relation to these.

In reviewing any book we have to ask how far the author has fulfilled his object. In this instance the object has been fulfilled if absence of controversial matter, terseness of view, and a free and easy style of diction constitute what is "concise and readable." To the student who, for examination purposes, requires merely an elementary knowledge of the subject, and to the junior practitioner who has little time or inclination to study the more complete text-books, the present volume will prove of real assistance. To those, however, who have already acquired some knowledge of the symptoms and types of insanity, either by clinical observation or by reference to other works on insanity, it will hardly repay perusal.

Emanating as it has done from Scotland, the home of metaphysics, we would hardly expect the opening sentences to be as follows:—"To the question, what is metaphysics? a shrewd Scotch rustic replied, 'When the person who listens disna ken what the person who speaks says, and when the person what speaks disna ken what he says himsel', that's metaphysics.'" This, the author observes, had a vein of truth in it, and we cannot but conclude that this is to a certain extent the author's mental standpoint. With regard to psychology, however, the author appears to take a more enlightened view than some of his present compatriots, inasmuch as while he regards the study of mind as wearisome and unprofitable to the average student, he nevertheless recommends the acquisition of a knowledge of mental constitution as an essential to the satisfactory study of mental disease. With regard to the anatomy and constitution of the brain substance he maintains perfect silence throughout, whilst the pathological teachings at present in vogue are not only left severely alone throughout the text, but even discredited in the preface. We question the wisdom of withholding from the student the results of the researches of a vast body of competent observers in the pathological aspects of diseases of the mind, and the object of the book will be defeated if the

student has to turn to other manuals for even the most elementary information.

Many of the chapters dealing with the types of mental disease are excellent, and show that the author has devoted great care to the clinical material at his disposal. Other sections, however, are meagre in the extreme,—in fact, they scarcely touch upon the subjects. The book is well printed and of convenient size.

Hallucinations and Illusions. By EDMUND PARRISH. London: Walter Scott, "Contemporary Science Series." 8vo, pp. 390. Price 6s.

The aim of the author is to classify into one great group the whole range of fallacious perceptions, and to establish the fact that they all depend, with minor differences, upon a uniformly abnormal cerebral condition—"Dissociation." "Dissociation" is the opposite of "Association," and means here a state in which the usual association paths are in certain regions for some reason obstructed or inhibited. The author, it is true, speaks of pathological and physiological causes of dissociation (pp. 152, 153), but it simplifies the subject and expresses his meaning better if we regard the condition as abnormal.

The old idea that hallucination is ideation equalling sensation in vividness is finally disposed of, let us hope for ever (although even to this day it finds approval in general writings), and a new one substituted in its place. It is as follows:—"Every psychological phenomenon that takes the character of a sense impression is a sense impression, for an hallucination is not merely like or related to a sense impression, it is identical with it" (p. 14). From this standpoint the transition to the next proposition is a simple one. Much confusion has arisen in literature by the persistent reiteration of the divisions of hallucinations into morbid and normal, or rather on account of the tendency to place the hallucinations and illusions of insanity in opposition to those of other states. "All hallucinations and illusions may be reckoned as fallacious perceptions, whether observed in the sane or the insane, whether occurring in sleep or in the waking state, whether arising spontaneously or experimentally induced" (p. 17). The author qualifies the foregoing statement to the extent of admitting that the physiological processes accompanying

hallucinatory perception are probably not dependent in all these cases on similar brain conditions, but he considers it highly probable that they rest on analogous functional principles.

In Chapter II the hallucinations of insanity and other morbid conditions, such as the various forms of intoxication, are discussed. Here the alienist need look for nothing new, and apart from the internal evidence which leads one to suppose that the enormous mass of facts which under this heading has been condensed into such a short space is intended merely to carry out the scheme of argument, this chapter until the very end is a disappointing one.

The third chapter is occupied by an account of waking hallucinations and the result of the international census. The data are taken from the report of Professor Henry Sedgwick's committee in the *Proceedings of the S. P. E.*, vol. x, 1894. The author confidently assumes that most if not all these cases of "waking" or conscious hallucinations are, like the hallucinations of crystal vision, hypnosis, and intoxication, due to cerebral "dissociation."

In the next chapter (IV) we reach the main argument of the book, and the author's theory of fallacious perception, which, as has already been indicated, is that of "dissociation." Before enunciating his own theory he criticises the various theories which up till quite recently have held the field. Chief among these are the centrifugal, psychic, and sensory theories, and the centripetal theories. The fundamental conceptions underlying the former group of theories are shown to depend upon (1) the belief that, as all hallucinations were images of the memory or imagination, there occurred a reflux impulse from the cortex to the sensorium; (2) on the assumption of a centrifugal discharge, which produced "eccentric projection" of the hallucinatory image; (3) on the adduction of a great number of cases which pointed to the implication of the retina in visual hallucinations. This view is maintained by Griesinger, Krafft-Ebbing, Schüle, and Tamburini, as well as by Sergi and Lombroso, the two latter assuming in every sensory perception a reflux wave to the peripheral sense-organ.

The arguments against the centrifugal theories are—(1) that, however, vivid and energetic an ideational image may be, it can never rise to the level of sensation itself; (2) the partiality which hallucinations display for primary colours, red, blue, and yellow, makes it difficult to refer them to

ideational excitation ; (3) if hallucinations depended upon energetic ideational stimulus their voluntary and involuntary appearance would be much more common ; (4) the hypothesis of a descending current in ascending nerve tracts is inconsistent with generally accepted physiological theories.

The centripetal theory is, strangely enough, not criticised by the author, though equally powerful arguments might be urged against it ; but we are left to infer by his subsequent adoption of an entirely different position that it holds no serious place in his mind. "It is clear," he says, "that the whole controversy as to whether hallucination arises in the ideational or in the sensory centres, and whether the process travels centripetally or centrifugally, becomes meaningless when once we have seen adequate grounds for concluding that the centres of sensation and imagination are not locally separated, but occupy the same part of the brain, and that the difference in character between sensory perception and ideational reproduction corresponds only to a different degree of excitement in the same cells" (p. 134). The cortical localisation theories of many writers he dismisses as futile circumlocutions which serve only to complicate our view of the subject.

Parrish's view of the origin of hallucinations is practically in accord with that of Jaimes, to whom he accords priority, but upon whose theory he claims an advance, which is not quite clear from the description. The theory depends upon the assumption that the sensory and ideational elements are one and the same, and that the difference in the processes depends upon the intensity of the stimulus. In other words, the currents flowing in from the periphery are of greater intensity and produce a more powerful effect than those flowing in from neighbouring cortical regions, *i. e.* they have greater power in overcoming resistance ; and upon this difference in intensity depends the faculty of normally distinguishing between reality and phantasy, by means of which our actions are adjusted to the environment. The intrinsic molecular cohesion of the cells is proof against the feebler currents from the association paths, unless the latter from any cause accumulate in the nerve elements ; and the normal free communication of the cells with one another prevents the incoming association currents from accumulating. But—and here is the crux of the theory—"if from any cause the outflow is blocked, wholly or in part, the inflowing nerve currents accumulate and reach the maximal explosion point, the

process of perception takes place, and the result is an hallucination." This is the process of "dissociation," which depends usually and ultimately upon exhaustion of certain groups of cerebral elements from any cause. From this point the author proceeds to show the similarity in origin between hallucinations and illusions.

Hallucinations are thus the result of *forced association*. Illusions in the same way are caused through the suppression (by dissociation) of certain cerebral processes which are usually present in normal perception, and the absence of which causes misrepresentation of the sensation. The sensation lacks completeness, "and the correction and adjustment which the dormant elements in consciousness could alone have supplied. . . . No hard and fast line can be drawn between them [hallucinations and illusions], though generally either the *plus* or *minus* quality predominates, and the phenomena can be classed as 'hallucinations' or 'illusions' accordingly." Enough has been quoted to show how admirably the theory of "dissociation" adapts itself to all the difficulties which surround the whole subject of hallucinations, and how dexterously the author has applied it. As a working theory we must admit it to be the latest and most scientific explanation which has yet been propounded; but as a final solution of the problems which underlie these complicated phenomena it should only be accepted with reservation.

Having established his theory, the author comprehends within it all the phenomena with which we are familiar under the names of crystal vision, hallucinations in the sane, second sight, and the positive and negative hallucinations in hypnosis. He attempts to demonstrate that in all such subjective apparitions there is a condition of dissociation, either induced voluntarily by inhibition of the mental processes, as in fixing the attention solely on one thing, as in crystal vision, or involuntarily, as in nervous exhaustion, or in the dream-like state between sleeping and waking, which is so prolific of ordinary "sane" hallucinations.

The work concludes with a chapter on telepathic hallucinations, which the International Census has proved to exist in numbers excessive of what can be accounted for by coincidence. These hallucinations are usually associated with the apparition of the dying to friends or acquaintances, and the general veracity of the returns may be assumed. Our author, however, remains sceptical; he considers that before we can

accept the conclusions to which the Sedgwick committee points, it is necessary to eliminate at least three sources of error:—(1) the possibility of the occurrence of hallucinations of memory; (2) the reading back of details after the event; and (3) the personal condition of the subject at the time of experiencing the hallucinations, whether exhausted or in the hypnogogic state, &c.

While a little more clearness and definition in the arrangement of the difficult and complicated subjects which are dealt with might be desirable in order to render the book more readable, it must be admitted that the author has succeeded in presenting to us the most comprehensive and most scientific work on false perception that has up till now been written in any language.

A Contribution to the Study of the Medulla Oblongata, the Cerebellum, and the Origin of the Cranial Nerves. By S. RAMÓN Y CAJAL. German edition, translated from the original by Johannes Bresler. Leipzig: J. A. Barth, 1896. Pp. 132.

This *brochure* presents the results of Ramón y Cajal's recent researches into the histology of the brain areas named in the title. Chapters are given upon the following subjects:—The origin of the trigeminus; upon a bundle of fibres originating in the superior cerebellar peduncle; upon the cerebellar cortex; the anterior corpora quadrigemina; the interpeduncular ganglion of mammals; the olive; the origin of the vagus and glosso-pharyngeal nerves; the nuclei of Goll's and Burdach's columns; the posterior longitudinal bundle; the origin of the vestibular nerve; the nervus cochlearis and the acoustic nuclei; the structure of the thalamus; the red nucleus and the region of the tegmentum; the inferior cerebellar peduncle; the hypoglossal nucleus; the facial nucleus; the cells of the substantia reticularis of the bulb; the pineal gland; the termination of association fibres in the molecular layer of the brain. The silver method was employed, and upon new-born and young rabbits, cats, mice, and the foetus of the last named. We are aware that the silver method has been instrumental in elucidating some of the difficult problems which these portions of the nervous system present in such profusion; in the present memoir the author confirms many of the recent statements made by workers in this sphere, adding original observations of his own. There are besides

many interesting suggestions as to the connections and functions of tracts of fibres and of cells, of a kind with which we are familiar in the author's writings. These seem to emphasise the need for patient inquiry into the structure of the obscure areas under consideration, an indispensable adjunct to which is an adequate knowledge of the work already done, to which reference is made in the bibliography at the end of the present memoir. We do not think that any useful object would be served by selecting for mention such few of the author's observations as the limits of space would enable us to allude to; in this highly technical and complex field it is difficult to pick out one item as more important than another. We rather regret that the author has not adopted the plan of giving a *précis* or summary of the chief points brought out by his work in the different regions investigated at the close of each chapter concerned. The somewhat abstruse subject-matter is elucidated by numerous illustrations. Doubtless the memoir is one to be possessed by the neuro-pathologist. Nevertheless it is perhaps with many, as with us, a matter for regret that so much good work is published in monograph form—a practice much in vogue on the Continent—instead of in a few well-accredited journals or archives, such as would come under the notice of the great bulk of readers in any given branch of work.

Le Monisme : Lieu entre la Religion et la Science. Profession de Foi d'un Naturaliste. A translation into French by G. VACHER DE LAPOUGE from the German of Professor ERNEST HAECKEL. Introduction by the translator. Schleicher Frères, 1897, Paris. La. 8vo, pp. 47.

If we cannot accept all the eulogies of the introduction, still the work is a masterly statement of the arguments in favour of the faith of the monist. It does not tend to reconcile that form of belief with any generally accepted religion, but is a profession of yet another, claiming to be the one true faith; basing the arguments in its favour on acknowledged facts of science.

The introduction was written for the French, and therefore it does not as a whole appeal to the English reader.

The author, in his preface, states that the essay was an extemporary speech delivered at Altenburg on October 9th, 1892, on the occasion of the seventy-fifth anniversary of the

Naturforschende Gesellschaft des Osterlandes; partly in confirmation, partly in refutation of a discourse by Professor Schlesinger, delivered at the same meeting. He says that his objects are two, viz. to give an idea of the rational conception of the world, and to establish a connection between religion and science, and by this means to cause the disappearance of the opposition wrongly interposed between these two "superior domains" of human thought.

Haeckel gives at the commencement of his discourse his definition of monism. "We express by this the conviction that a spirit is in all things, and that the whole knowable world exists and develops according to a common law." He then argues in support of his profession of faith against the dualism of most religions and the pluralism of many, and states that their fundamental idea is the anthropomorphism of the Deity, with the placing of man in a position separated from the rest of nature, which commonly carries with it the idea that man is the centre of the universe; and further, that each important accession of knowledge carries with it a separation from dualism and pluralism and an approach to monism. He then passes in rapid review the uninterrupted series of natural evolution from the lowest to the highest, showing therefrom that man's place in nature has now been rightly defined.

If it is true that the human body has been developed from a long series of ancestral Vertebrates, then the mind is in exactly the same position. Haeckel traces the mind backward, and claims to find some traces of it in the lowest animals (Infusoria, &c.). He objects to the consideration of the soul as a separate entity, and claims that the only immortality is that due to the indestructibility of matter and the conservation of energy. He then demolishes some of the objections to his faith, such as the charges of materialism, atheism, and of its failing to satisfy the wants of human sentiment.

The whole discourse is written with clearness, and is freely annotated, references being given to numerous works. It is very interesting reading, both as a profession of faith and as a review of the present state of knowledge regarding the subjects of which it treats.

Abhandlungen zur Gesundheitslehre der Seele und Nerven.
I. Arbeit und Wille: ein Kapitel-Klinischer Psychologie zur Grundlegung der Psychohygiene. (Treatises on the Hygiene of the Mind and Nervous System. I. Work and Will: a Chapter for a Groundwork to Mental Hygiene.)
Von Dr. E. HALLERVORDEN. Würzburg: A. Stuber, 1896.
Demy 8vo, pp. 42, 56. Price each number M. 1.20.

We have received two numbers as instalments of a promised work upon mental hygiene. Dr. Hallervorden means to proceed by what he calls the clinical method,—the study of human beings in situations where their passions and motives are laid bare. He observes that our ordinary books on psychology have become shadowy, because the personality is lost in the average, the individual in the generalisation. This is true to a great extent. Your professional psychologist and metaphysician is a man who has spent most of his time in reading what has already been written on the subject, and for this very reason he has little experience of life. Otherwise he gains a livelihood or a university chair, with a good position, by repeating his time-honoured terms and definitions. His pupils are mostly young men who have not seen the world, and as they are bound to listen, the teacher does not himself feel the need of going to school. What physicians have observed in the complex dissociations of the mind in disease he either entirely neglects or looks at in a very airy way. A wide experience of human nature will, of course, help a man to write on psychology, the wider the better. He should use all methods, and neglect no sources of information; but a difficulty commences when one has to communicate his knowledge. Mr. Squeers's method of teaching botany was to send the boys to weed the garden, and no doubt his pupils would thus gain some acquaintance with the natural flora of Yorkshire; but if after leaving the seminary of Dortheboys they were to try to teach what they had learned, they would need to have recourse to definitions and generalisations. Dr. Hallervorden writes vigorously against *schema*,—that is, the old pedantic terms and methods of treating the subject; but in these numbers he gives us little else save an array of theses, paragraphs, numbered sentences, A and B subdivisions, with occasional big type to make his ideas striking—*plus* a number of quotations from Kant, Goethe, Lessing, and other great German authors. He will say that he requires to lay down his methods, but they are

quite as formal as any of his predecessors, and it is to be feared that if we spent time in conning them we should forget them before he came to the more practical parts of his work. This is the inconvenience of bringing out such a treatise in parts. The author promises much, and we are willing to learn something new in psychology; but a reviewer at least cannot take the promise for the performance. Dr. Hallervorden tells that the best psychologist he ever met with is a judge who has the charge of a prison. The under officials also showed a surprising "psychological understanding." Amongst other practical psychologists he thinks more highly of teachers, despite their pedantry, than of physicians; waiters in large hotels have a delicate appreciation of the social and paying qualities of arriving guests; some police officials have made the best of their opportunities, and they often preserve under a rough exterior humane feelings, for they have learned by experience that there is much good in human nature. Dr. Hallervorden courageously remarks, "Freilich im Amte borstig zu sein, hält der Preusse für seine Pflicht." Very true, but difficult to translate! One might try, "Every Prussian official considers it his duty to try to be like a hedgehog."

Om Tvangstankar och dermed Beslagtade Fenomen. (On Imperative Ideas and Related Phenomena.) By Dr. BROR GADELIUS, Asylum of Lund (Sweden). 8vo, pp. 239. Lund: Gleerup.

This is an elaborate and interesting work which deserves to be widely known beyond the bounds of the Scandinavian kingdoms. The author gives a scientific definition of imperative ideas and the symptoms attending them. He points out that a peculiar double life is characteristic of those who suffer from this mental disorder: on the one side there is an intrusion of ideas into the foreground of consciousness; on the other an active recognition of the intruding ideas as unfamiliar and strange: in their mental life there seem to be two centres, two sources of energy, two wills. The imperative idea can be compared with the phenomena of hypnotic suggestion, especially with the post-hypnotic ones, and persons with imperative ideas yield very readily to suggestions. In those visited by dominant ideas there is a chronic inability for voluntary attention, and want of power to resist the automatic activity of certain ideas which are not admitted

into consciousness in the common way, that is through a synthetic action natural to the mind, but breaking into consciousness as if from a source out of the patient's own personality. From the physiological side Gadelius treats the imperative idea as a phenomenon of irritation in a centre or complex of centres, more or less dissociated from another cortical area where at the same time another process of consciousness is going on. This dissociation is only functional, depending partly on mental feebleness. The patient's attention and will are feeble and trembling, and there is a greater or less irritability in the brain centres of the cortex. This hypothesis is almost the same as that of Meynert. Gadelius gives a critical account of what has been written about dominant ideas in different countries under the names of *Grübelsucht*, *folie de doute*, &c. The varying forms of this disorder can be referred to two main groups—imperative ideas, and fears or phobias; both may pass into the motor regions of the brain, appearing as imperative actions. Often the ordinary modus of association called simultaneous contrast asserts itself in an abnormal way, so as to produce persistent ideas of a lascivious or homicidal character, which the patient does not willingly entertain. The dissociation of consciousness rarely rises to complete mental confusion, and imperative ideas are seldom transmuted into hallucinations and impulses. The disease generally remains in a chronic state, getting worse at intervals. Sometimes the imperative ideas take a more systematised form, agreeable to the character of the individual; the minds of those affected are filled with absurd fears and precautions for unlikely contingencies. These precautions are altruistic or egotistic, as the patient is more disposed to care for his own welfare or for that of others. The agitation and motor vehemence are much alike, but between the paroxysms the temper of the altruist has a more melancholic, and that of the egotist a more paranoiac aspect. The author adds to the literature of the subject some cases observed by himself. Amongst these one is especially noteworthy. The disorder commenced with real attacks ushered in by a sensorial aura, a simple hallucination of sight, a flame of fire in the sky, and a hallucination of blasphemous words. The disorder now amounts to the intrusion of thoughts of a blasphemous nature in contrast to religious feelings, a restless desire to see what people were about and to put questions to them. Another patient, "an egotist," had such a horror of touching anything that she had not allowed her

own hands to come into contact with one another for many years, and her bathings and dressings were done with so many precautions that it is marvellous her attendant could put up with her. In some instances the disease could be traced back to childhood, and there are three descriptions of cases occurring in children.

The Education of the Central Nervous System. By R. P. HALLECK, M.A. (Yale). Published by the Macmillan Company, New York. 8vo, pp. 258.

This work is a compilation of facts relative to the training of the nervous system, fairly well up to date, and put in a clear and popular manner.

The key-note of the book is that given in the preface, viz. "That it is always too late to be what you might have been." From this point of view he discusses the "fatalistic aspects" of mental development, and the limits of "the possible modifications of the brain," and enforces in a special chapter the importance of early training.

The author's theory of training is more accurate than his practical views of how to carry it out. He does not seem to have grasped or to have fully emphasised the importance of training definitely related to the order of mental evolution.

The fact that teaching is attempted to be based on physiological psychology is, however, sufficient to commend the book to the attention of teachers, many of whom, in this country at all events, are in happy ignorance of all that pertains either to physiology or psychology.

Ueber die Tabes : eine Abhandlung für praktische Aerzte, von Dr. P. J. MÖBIUS. Karger, Berlin, 1897. (On Tabes : a Treatise for Practitioners, &c.) 8vo, pp. 132. Price 3s. 6d.

In his introduction our author makes the history of the late recognition of tabes point a moral: "Unprejudiced observation was despised; people's heads were full of scholastic theories; what was read in books was deemed more important than what one saw with one's own eyes, and conceit led men into physiological explanations rather than into observation. One must add, indeed, that if the late recognition of the thoroughly distinct tabes is damaging to the intelligence of the men of earlier times, the rapid increase of tabes, on the other hand, is a reproach to the morality of

recent days. We now know that tabes is metasyphilis—that is, a disease consequential on syphilis (*eine Nachkrankheit der Syphilis*); in proportion as syphilis spreads tabes becomes more frequent. We need not, therefore, deem ourselves over clever since it has been made easier for us now to study tabes than it was for the old physicians.”

Möbius here anticipates, in a rather question-begging way, the conclusions arrived at later on in his chapter on the causes of tabes. At the same time he suggests what is, perhaps, the main difficulty in accepting the metasyphilitic or parasyphilitic nature of tabes. Mairat and Vires, in their recent brochure on general paralysis, dispute the views now general on the Continent as to the universality of syphilis as an antecedent to general paralysis, and their arguments apply closely to tabes as well. Parant, in commenting on Mairat and Vires, remarks, “It is notorious that the African Arabs are almost all syphilitic; general paralysis is unknown among them. According to our American colleagues, it was equally unknown among the black race till the time when they became addicted to alcoholic drink. In our country there was a time when syphilis, the French disease, raged in a fearful degree. . . . Nevertheless, the medical observations, imperfect though they be, have recorded nothing which could correspond to what we know of paralytic insanity.” *Nominibus mutandis*, Parant’s remarks apply to tabes. Möbius, however, says that “among the Arabs of North Africa, more accurate observations have shown that in proportion as syphilis spreads, tabes and general paralysis appear”! The question is not so easily disposed of. In modern times and in civilised countries the association of syphilis with tabes and general paralysis is brought under our notice so frequently that it cannot be overlooked; it often attracts the attention of patients themselves and their friends. In earlier times, when syphilis raged terribly, and when the natural tendency would be to attribute almost every ailment to this taint, how did tabes and general paralysis escape attention?

Möbius subscribes to the opinion, recently accepted, “though by no means universally,” that tabes and progressive general paralysis of the insane are one. “We speak of ‘tabes’ when the centripetal nerve-fibres are pre-eminently diseased, and of progressive paralysis when the cerebral cortex is pre-eminently diseased.”

The introduction, from which we cull the above opinions,

and which contains an interesting account of the earliest descriptions of tabes, is followed by a chapter on the signs and course of the disease. This comprises in a comparatively brief form a very full and careful account of the symptoms of the affection, and of the methods of clinical examination. The value of the loss of pupillary reflex is rightly insisted upon. "Paralysis of the pupils is observed in various diseases, loss of pupillary reflex occurs only (practically) in tabes and in progressive paralysis. . . . Usually a man comes to the doctor complaining of some tabes-symptom or other, . . . and when the former finds loss of pupillary reflex the diagnosis is made." The rare "paradoxical pupillary reaction" is described (apparent expansion of the pupil to light) and explained: "while the eye has been in shade the patient has strained the accommodation, when relaxation occurs the pupil expands." The feeble action of atropine on the pupil in tabes is mentioned. "Sometimes the pupil is no longer circular, but displaced, elliptical, or altered irregularly." To these conditions the term irregularity as distinguished from inequality ought to be restricted. In the kindred affection—general paralysis—irregularity in this sense is even more common, in our experience, than inequality.

The importance of bladder troubles from the diagnostic point of view is pointed out, "for they are the rule in tabes, but a very rare exception in neuritis."

Leimbach's statistics are quoted. Out of 400 patients with tabes 92 per cent. had lost knee-jerk (while in 4.25 per cent. more it was impaired); 88.25 per cent. had lancinating pains; 80.50 per cent. had bladder trouble; 70.25 per cent. had altered pupillary reaction; and 48.25 per cent. had inequality of pupils.

With regard to ataxy the author says, "In tabes it appears to me to be certain that the ataxy is nothing but a result of anæsthesia, particularly of deficient sensation about the joints combined, perhaps, with paræsthesia of the deep parts. Locomotor ataxy is not an essential of the disease. Many tabes patients die without ever having become ataxic, and in my consulting practice the non-ataxic cases distinctly outnumber the ataxic." The latter fact is probably due to the greater number of anomalous and difficult cases that come under the notice of a consultant as a speciality. "Leimbach found 74.75 per cent. ataxic."

The various forms of crisis are described, the nutritive

changes, and the joint and bone affections. Among the phenomena connected with the special senses the occasional occurrence of loss of smell and of taste is noted as well as deafness. Paræsthesia (hallucinations) of hearing, smell, and taste are mentioned; the first are vague (rushing of waters, humming of a kettle, ringing of bells, and the like); the others do not appear to be commonly well defined, but are, Möbius notes, always disagreeable. The old observation is confirmed that a certain weakmindedness with some degree of euphoria is not rare in tabes.

The next chapter deals with the anatomy of tabes. "It is beyond doubt that the death of 'the noble parts,' of the parenchyma, is the first change, and that the morbid condition of the connective tissue and the blood-vessels is secondary." While we agree with the view here supported, we think this statement is too unqualified, having regard to the opinions of such observers as Obersteiner, who, with Redlich, holds that the essential lesion consists in a chronic inflammatory process in the meninges with hyperplasia of the connective tissue. Nageotte, again, holds that a meso- and peri-neuritis in that portion of the posterior roots which lies between the spinal ganglia and the entrance into the arachnoidal sac is the essential cause of tabes. "In tabes the first seat of disease, excepting certain spots in the brain, is the fibres issuing from the spinal ganglia and running into the posterior columns of the cord, the fibres of the posterior roots. . . . According to the ideas now prevailing, cell and fibre is one living entity, and this entity is either sick or sound. From our point of view, however, the question in tabes is of a primary independent affection of the nerve-fibres." The most interesting subject in connection with the pathological anatomy of tabes is no doubt that which is here hinted at. According to Marinesco, tabes is a degeneration of the centripetal protoneuron. Goldscheider agrees with this view, saying that a poison circulating in the blood changes the neuron as a whole and in its entirety. Similarly, Rosin calls tabes neither a disease of brain nor cord, but a degeneration of the first neuron of the sensory tract (direct sensory neuron of Kölliker; sensory neuron of the first order of Waldeyer).

We have already indicated the views of our author as to the cause of tabes, to which he devotes a chapter. He points out, truly enough, that the notion of a constant syphilitic origin is gaining ground. Though our own experience coincides with

his, we think that he dismisses somewhat too lightly what is to be said on the other side. Arguing against the existence of an ergotine tabes (and here again we are with him), he says that in the entire field of pathology there exists no proof that two different poisons can produce precisely the same morbid state, at least when the morbid state is so distinctive as that of tabes. On the other hand, there is no more remarkable discovery in modern pathology than the fact that certain disease-producing organisms will only act in the presence of others which are either themselves harmless, or harmful in a less degree and in a different manner. This discovery will probably eventually throw great light on the formerly inexplicable complexity of causes of disease, supplying the *tertium quid* that seems so often to be wanting.

A short chapter is given on the diagnosis of tabes, but this subject has been already anticipated in the excellent clinical description.

A chapter on prognosis follows, which is somewhat longer than, but much to the same effect as the celebrated chapter on the snakes of Iceland.

Twenty-one pages are devoted to the chapter on treatment. Little that is new is suggested. The suspension method is dismissed along with every other general treatment as hardly worth discussing, the treatment of individual symptoms receiving more attention. For lighting pains antipyrin, antifebrin, phenacetin, and salipyrin are recommended; for bladder trouble nux vomica, which we used to hear condemned on "physiological" grounds.

The book concludes with a collection of some fifty-five clinical cases serving as examples of the states described. These, like the rest of the author's clinical work, are of excellent quality.

PART III.—PSYCHOLOGICAL RETROSPECT.

RETROSPECT OF PHYSIOLOGICAL PSYCHOLOGY.

By Havelock Ellis.

The Psychology of Religion.—Considering the importance of the religious emotions not only for the alienist, but in life generally, it is very remarkable that religion has hitherto been almost abso-

lutely neglected by psychologists. Thanks mainly to the energy of that most fruitful school of psychologists grouped around the inspiring personality of Professor Starley Hall at Clark University, this omission is now in process of rectification. I have before me four valuable and interesting studies on this subject by two Fellows in Psychology at Clark University, as well as a series of papers by Mr. Rutgers Marshall, who is well known in another connection.

Mr. J. H. Leuba's "Studies in the Psychology of Religious Phenomena" (*Amer. Journ. of Psychology*, vol. vii, No. 3, 1896) deal with the general manifestations of conversion and the religious life. A leading point in his exposition, and one that is clearly of great importance for the right comprehension of religious phenomena, is his insistence upon "the absolute divorce which must be recognised between intellectual beliefs and religion;" intellectual beliefs are the most evanescent elements in religion. He defines religion as "the conglomerate of desires and emotions springing from the sense of sin and its release." The fact that conversion has no necessary intellectual element is shown by the frequency with which, on the evidence of religious workers here quoted, it may take place even in states bordering on delirium tremens. "Take my own case," to cite one testimony, "a big bloated drunkard, had fifty-three drinks the day before I was converted—most of them brandy cocktails,—and before me I saw my Lord crucified. I was converted." It is noteworthy that many such conversions are, as was this case, permanent. The author has accumulated a number of detailed histories of conversion, and his paper is mainly made up of a searching and instructive analysis of them. He breaks up "conversion" into the following elements:—(1) Sense of sin; which is "made up essentially of general physical discomforts due to unhealthy living (the yearning of the flesh after righteousness) and of conflicting moral tendencies, whose painfulness has also its physical basis." (2) Self-surrender, which is the turning-point. (3) Faith; the author emphasises the fact that faith in anything may be effectual; "it is a gross error to imagine that the chief practical value of the faith state is its power to stamp with the seal of reality certain theological conceptions. On the contrary, its value lies solely in the fact that it is the psychic correlate of a biological growth reducing contending desires to one direction." (4) Justification, which is really the relaxation of the tense emotions. (5) Joy. (6) Appearance of newness. The paper is full of suggestive and sympathetic observations on religious phenomena, and it is well explained how a psychic development, which is really the natural and inevitable outcome of the organism, comes to be regarded as sometimes arbitrarily inspired by divine influence from without into a merely passive subject.

In a subsequent paper ("The Psycho-physiology of the Moral

Imperative," *Amer. Journ. Psych.*, vol. viii, No. 4, 1897) the same author attempts to analyse on a biological basis the phenomena of the moral ought. He finds that in typical cases of moral imperative experiences there are three successive processes, or "movements" of the reflex arc type: the first two involuntary, but antagonistic to each other; the third reflective. "The cognition of moral rightness is the psychic side of certain particular processes of the reflex arc type." The moral imperative, being thus conditioned by a reflective, purely cerebro-spinal process, contains neither direct sensations from the external world nor sensations from the internal organs. "Consequently it must feel as a disembodied experience, as a disembodied unlocalised manifestation of spiritual life." Thus the body is, as it were, left out of the moral imperative, and "the crusade of the ethico-religious consciousness is a war of the cerebro-spinal Self against the cerebro-sympathetic Self." The defect of this paper of Professor Leuba's is a certain lack of facts and documents.

Certainly no such reproach can be brought against Mr. Starbuck's studies of the same and similar phenomena, which are somewhat later in date ("A Study of Conversion," and "Some Aspects of Religious Growth," *Amer. Journ. Psych.*, 1897). These are packed throughout with facts, figures, documents, and generalisations illustrated by charts, and while Mr. Starbuck has fewer suggestive observations to make, his results, in so far as they are placed on a wide basis of facts collected with much industry and energy, perhaps have greater scientific validity; in the main they confirm Professor Leuba's conclusions.

Mr. Starbuck issued a *questionnaire*, and by Professor Stanley Hill's influence, the assistance of many teachers, &c., he obtained several hundred replies. He starts by regarding conversion as a more or less normal process, having a physiological basis, and rooted in the first place in puberty, being thus a function of growth; and he finds that the years of greatest frequency of conversions correspond with the years of greatest bodily growth; in both males and females the charts accompanying the paper show that while the greatest annual increase in weight is for boys the age of sixteen, and for girls thirteen, the greatest number of conversions is for boys at fifteen, and for girls from twelve to thirteen. There is also a correspondence between the periods of most frequent conversions and puberty in both sexes, the average age of female conversions, 13·8 years, differing only by a small fraction from the age of most frequent accession of puberty, as shown by 4000 cases.

It thus appears that there may be a normal age for conversion at about the beginning of adolescence, and the author refers to the initiation ceremonies so common throughout the world on the advent of puberty.

After the first climax in the frequency of conversions at puberty

there is in both sexes a rapid fall, with a second, but in both sexes somewhat lower climax in boys at eighteen and in girls at sixteen; as this is separated from the earlier rise by, in both sexes, a period of three years, it evidently follows according to some law. The author considers that there is at this time a normal period of intellectual awakening following the physical and emotional disturbance at puberty.

The author analyses in detail the elements of conversion from the histories before him. There is little evidence of conscious exercise of the will. In the early "conviction" period of conversion, conscious following out of teaching is only mentioned in 7 per cent. of the cases, and the response to moral ideas in only 20 per cent., while external forces were recognised in 40 per cent. An apparently spontaneous awakening is the most prominent factor, and increases the evidence that the process is automatic. The unconscious automatic element is especially marked in the female cases, the conscious element being *entirely* absent in only 2 per cent. of the males as against 19 per cent. of the females, while the conscious element is equal to the unconscious in only 19 per cent. of the females as against 36 per cent. of the males. Conversion is thus largely a process of "unconscious cerebration." From the social and biological side the author describes it as primarily an "unselfing;" an awakening to the larger facts of the world. Hence it is that conversion coincides with puberty, which is a physiological awakening to the sexual existence of other persons.

Starbuck finds, however, that the most interesting period from the point of view of religious development is not so much puberty as adolescence. Analysing more minutely a larger number of cases in his second paper, the author finds that there is often more than one period of awakening or religious stress in the same individual. The charts show on this basis in boys a minor rise in the curve at twelve, a steep climax at sixteen, and a third minor rise at nineteen, while for girls the corresponding ages are eleven, fifteen, and eighteen. A period of "storm and stress" is found to be extremely common, since it occurs in 52 per cent. of males and 70 per cent. females, beginning between sixteen and seventeen in boys and between thirteen and fourteen in girls, and lasting on an average in the former five and a half years, and in the latter three years. Its manifestations in the two sexes are widely different. In the girls it is shown by brooding, morbid sensitiveness and fears, the feeling of incompleteness, and a struggle after the ideal. The boys work out their ideals from the intellectual side, with a predominance of constructive and rational elements. In the females there are often imperfect physical conditions and bad health. At the age of eighteen in males and fifteen to sixteen in females begins a period of religious doubt, much more marked in males, for only 10 per cent. of the females as

against 37 per cent. of the males have an *unemotional* period of doubt, so that adolescence is for the female primarily a period of storm and stress, and for the male primarily a period of doubt. On the whole, two thirds of both sexes tend at some period to rebel against conventional religion. Between twenty and thirty, and on the average at the age of twenty-four in both sexes, follows a period of reconstruction. The great frequency of doubt and storm and stress suggests to the author that these experiences may be the result racially of a survival of the fittest in which the fittest is he who wrestles in youth with the inextricable mesh of impulses that spring up, and even pauses in despair while the deeper forces of his nature are working themselves out into clearness and harmony."

Mr. Rutgers Marshall's papers ("The Function of Religious Expression," *Mind*, 1897) are on somewhat different lines, being on the whole almost as much sociological as psychological, and having little basis of fresh concrete fact; but they agree with those already summarised in maintaining that religious phenomena have a real basis in the organism, and perform a beneficial social function. Thus he believes that religion acts beneficially by emphasising instinct and repressing the over-influence of variations from typical forms of action. The most interesting point in his exposition is probably the very great importance and the very beneficial influence which he attributes to religious hallucinations. They act, he believes, by emphasising and sanctifying, as if with the authority of some external and higher power, the restraining voice of the social instincts within men. When states of ecstasy and catalepsy are present these religious effects are, of course, emphasised still further. But even "when hallucination is not accompanied by such morbid conditions, we nevertheless have of necessity a repression of reaction to environmental stimuli, and a concentration of thought upon states of purely subjective origin." Even when processes, which when carried to extreme produce hallucinations, are not carried to extreme, mental states similar to those accompanying hallucinations will obtain; "consequently if any benefit were ever connected with the attainment of these hallucinations, the same benefit in less degree would be likely to be gained by the person who followed the practices which often lead to hallucinations," whether or not he succeeded. Thus the "still small voice of conscience" is not altogether a metaphor.

By analysing various of the leading manifestations or expressions of religion, Marshall finds that they tend to produce the suppression of individualistic reaction, leading us to listen to the guiding voices within us, and that if carried to extremes they mostly tend to the production of true hallucinations. The phenomena he thus deals with are (1) seclusion, (2) fasting, and (3) torture; (4) initiatory rites; (5) prayer—not productive of hallucinations, but subsidiary, since leading to an attitude in which the

inner voice may best be heard; (6) sacrifice—also useful in establishing an attitude of mental submission and subordination; (7) celibacy; and (8) pilgrimages. Marshall finds that these religious customs “are all tools, so to speak, which nature has used to enforce restraint; and I wish to emphasise the fact that this restraint is of the very core and essence of religious functioning.” Altogether a very acute and suggestive study, and useful in reminding those of us whose familiarity with morbid mental phenomena is apt to breed contempt, that such phenomena have played a lofty and perhaps even useful part in the moral evolution of the race.

Researches upon School Children.—Dr. Allen Gilbert, well known in connection with experiments on loss of sleep, has recently been appointed Assistant Professor of Psychology at the University of Iowa; and in collaboration with Professor Patrick he has just issued from the University vol. i (1897) of a series of *Studies in Psychology* (similar to those issued by Dr. Scripture from Yale), which will be of considerable value should the high level of the first volume be maintained.

The chief study in this first volume is by Dr. Gilbert himself, “*Researches upon School Children and College Students*,” in continuation of similar researches already published in the *Yale Studies*. The data were in this case taken from Iowa, and the investigation has occupied two years. The subjects were nearly 1500 in number, and were fairly equally distributed as regards sex and age between six years and nineteen years. The tests cover (1) pulse before and after the series of tests; (2) pain threshold; (3) strength of lift with wrist; (4) strength of lift with arms; (5) estimation of length by arm movement; (6) estimation of length with the eye; (7) lung capacity; (8) weight; (9) height; (10) voluntary motor ability; (11) fatigue. The results are made clear by twenty-seven charts, boys and girls being in every case shown separately. Reference may be made to a few of these results. The tests for the pain threshold were notable on account of the care with which certain fallacies, usually neglected, were avoided. The apparatus, which the authors call the balance algometer, was constructed from a balance scale with an arrangement on one scalepan so adjusted as to push the finger-nail against a stationary bracket when the opposite scale was pressed down. It was found that there is a definite point at which pressure on the nail becomes pain. Care was taken to measure the time with a metronome, while the fact that pressure was brought to bear on the nail instead of on the flesh of the finger obviates the errors due to callosity of the finger. Boys are less sensitive to the test than girls throughout, and, as a rule, there is a gradual decrease of sensibility from six to nineteen. Girls reach nearly the minimum of sensibility by the time they are thirteen, while for the boys that age marks the point at which the most rapid falling off in sensi-

tiveness seems to begin, and at nineteen there is a very considerable difference between the sexes.

As regards wrist-lift, the same dividing point in the rapidity of development was found at fourteen in both sexes, boys having a greater strength than girls at all ages, but by the age of nineteen a boy being able to lift twice as much as a girl. Much the same result was found as regards the power of lifting with the arms.

The accuracy with which space is judged in terms of movement by the arm with closed eyes, after having first been estimated by the eye, increases with age. The tendency is nearly always to under-estimate the distance. Boys are less accurate than girls from six to ten years of age, after that boys are more accurate. The estimation of length by sight (the subject being asked to estimate in inches the distance of two lines) increases very rapidly from six to eleven, more rapidly in boys than in girls. Boys are throughout more accurate than girls, except at the ages of six and fourteen. Up to the age of fifteen the distance is always judged shorter than it really is; between fifteen and sixteen is the most accurate age; after that there is a tendency to over-estimate the distance, this being due to an attempt to measure the space inch by inch instead of as a whole.

In height and weight the boys, according to the normal rule, take the lead until the age of eleven, when the order is reversed until the age of fourteen; the boys then again take the lead. In voluntary motor ability (the number of taps on a key finger-board made in five seconds) the girls come first from six to nine; from that age onwards the boys tap faster. Fatigue in tapping decreases with age, and in the girls less than in the boys.

The pulse-rate was, as a rule, raised after the tests, as would be expected. Except at the age of six the boy's pulse is slower than the girl's till between ten and eleven, faster from then till between thirteen and fourteen, and then slower again. "The data point very distinctly to an acceleration of the pulse during the age of puberty for both sexes, both in the curves for normal pulse and pulse subsequent to fatigue. The effect of puberty seems more marked for boys than for girls."

One of the chief aims of these tests was to discover their relationship to mental ability. The record cards for each case, after the tests were completed, were sent to the teachers to be marked (1) bright, (2) average, or (3) dull; so far as possible mere examination standards being avoided. For most of the tests it was found that there was no relationship to mental ability. Certain points came out, however, in regard to some of the tests. The bright subjects are generally better able to estimate length by sight than the others. In opposition to Porter, there was no reason to suppose the tall and heavy children the brightest, from ten to fourteen the dull children being much the heavier. During the age of rapid growth (ten to fifteen) the dull children

have also the largest lung capacity, but before and after there is no such distinction. Bright subjects tap much faster than dull ones; they also lose more in the rate of tapping, owing to the fatigue induced.

On the whole, Dr. Gilbert has made a careful and valuable contribution to the psychology of childhood and youth, a subject which, as we are beginning to recognise, is important from more than one point of view.

Involuntary Movement.—This subject, which had previously attracted the attention of Stricker, Lehmann, Féré, and Jastrow, has recently been studied on a large scale, and with considerable precision, in the Psychological Laboratory of Leland Stanford, jun., University, California, by Milo Asem Tucker (*Amer. Journ. Psychology*, vol. viii, No. 3, 1897). The apparatus used was practically the same as Jastrow's automatograph, which has been described in this Retrospect in previous years, and the experiments were made on over 1000 adults and children, who were always ignorant of the precise object of the experiments. The movements were generally unconscious, and only those that could fairly be called involuntary were counted.

Jastrow had reached the conclusion that there is a tendency to move towards a stationary object on which the attention is directed. He had not, however, determined what was the spontaneous tendency of the hands to move in any direction. Tucker finds that there is a normal physiological tendency for the hands and arms resting in front of the body to move inward towards the median plane of the body, and that there is no certainty that when we see an object at rest we tend to move towards it, the idea of motion being necessary to cause movement in that direction. Tucker admits, however, that his experiments "would indicate that the whole body moves when we think, though of course almost imperceptibly," and even refers, as a further illustration, to the tendency of the amateur bicyclist to be drawn towards a stationary obstacle in his path. In adults the majority of spontaneous movements of the hand (the mind being kept occupied) were forward, in children backward; there were few differences between the right and left hands. Adults are much more direct in their movements than children. No sex differences were discovered.

In testing the influence of motion on involuntary muscular movements of the hand a bottle was drawn along by a string. It was found that 88 per cent. adults and 81 per cent. children imitate the movement. After seeing the moving object the subject was asked to close the eyes and think of the moving object; in nearly every case the motion was imitated. In some cases the whole body was called into corresponding action.

On the whole these experiments go to support the views (hitherto resting on a very small basis of fact) of Féré and

Lehmann. A number of interesting traces from the automato-graph accompany the paper.

A somewhat allied investigation has recently been carried on in Harvard, under the superintendence of Professor Delabarre, by Mr. Dearborn and Mr. Spindler ("Involuntary Motor Reaction to Pleasant and Unpleasant Stimuli," *Psychological Review*, September, 1897). Münsterberg believes that stimuli which cause action of the extensor muscles are as a rule agreeable, while stimuli which cause action of the flexors are as a rule disagreeable. The object of this investigation was to test the validity of Münsterberg's view.

The emotional stimuli chiefly used were odours, and, to a less extent, sounds and variously coloured lights. The subjects were numerous, and the stimuli were repeated several times with each subject; it was sought to give as purely painful or pleasurable an effect as possible. The odours employed (in the order of agreeableness to the majority of subjects) were oil of bergamot, *eau de Cologne*, heliotrope, methyl acetate, oil of cloves, tincture of musk, ethyl iodide, spirits of turpentine, xylol, eugenol, oil of eucalyptus, iodoform, cider vinegar, bisulphide of carbon, ethyl bomeol and camphor, sulphuric ether, toluidin, allyl alcohol, tincture of asafoetida, diamylamine, acetic acid, ammonium valerianate. A few subjects found none of these odours painful, and for these ammonia was substituted for a real odour; the hands and head were chosen for reaction. According to Münsterberg's theory the hands should relax and the head drop back under agreeable stimulation, while disagreeable stimuli should cause the hands to contract and the head to drop forward. A pasteboard cap was fitted tightly to the head and connected with a Marey's tambour, and a sponge and india-rubber bulb was held in the left hand, a somewhat different apparatus being applied to the second and third fingers of the right hand. There were 764 reactions to stimuli; in 253 cases stimuli were applied without any motor reaction.

Under pleasant stimulation there were 67 per cent. of movements of extension and 32 per cent. of flexion, a proportion of more than two to one: the hands and head did not necessarily move together. "The left hand seems much more sensitive and more given to expressing motor reaction than the right; and as our subjects were mostly right-handed, it would seem justifiable to infer from this that the right hand is more civilised and more under control and less naively expressive than the left." (In Tucker's experiments there was a very slightly greater range of involuntary movement in the left hand.) The percentage of no reactions is much less for the left hand, and there was also a greater proportion of extensions, as compared to flexions, in the left hand's reactions. The tendency of the head to extend was in some degree counterbalanced by a tendency to move towards the pleasant stimulus.

In the same way, under unpleasant stimulation, the tendency of the head to droop forward was to a considerable degree balanced by a tendency to draw back from the unpleasant stimulus, though flexion still predominated. In the hands flexion was more marked, 78 per cent. of the movements of the left hand and 69 per cent. of the movements of the right hand being flexions. The left hand here, again, showed a greater readiness to respond.

Under indifferent stimuli the left hand still reacted more than the right. Here flexion and extension were nearly equal, with a slight balance in favour of extension.

Various temperamental differences were observed. On the whole, these interesting experiments distinctly confirm Münsterberg's views.

The Physiology of Exaltation and Depression.—Dr. G. Dumas, whose investigations of emotional states in insanity are well known, has lately endeavoured to carry further the work of Johnson Smyth (published in this JOURNAL) with regard to the state of the blood in insanity ("Recherches expérimentales sur l'Excitation et la Depression," *Revue Philosophique*, June, 1897). While accepting Johnson Smyth's general result that the number of corpuscles in the insane is always below the normal, Dumas criticises the method of averages employed by that investigator, pointing out that the number of corpuscles varies with age, temperament, time of day, &c.; and also that every form of insanity includes minor divisions. He has himself always followed an individual method,—that is to say, instead of comparing one individual with another he compares him with himself; instead of counting the corpuscles of several subjects who seem to be in a similar condition, he counts the corpuscles of the same subject in different states of exaltation and depression, thus comparing the individual only with *his own* average. To illustrate the importance of this he refers to a general paralytic whose pulse, in a state of depression, he was surprised to find at 90; but a few days later, when in a state of exaltation, the same patient's pulse was 120, so that this pulse in depression, though apparently fast, was really slowed.

Dumas starts from the physiological fact that vaso-dilatation is accompanied by a decrease of corpuscles, and vaso-contraction by an increase. If, as Lange believes, exaltation is accompanied by vaso-dilatation, and depression by vaso-contraction, there ought in the same individual to be more corpuscles during depression than during exaltation. Dumas proceeded to verify this hypothesis (using Hagen's instrument) on cases of circular insanity.

The first was a woman 33 years of age, with alternate periods of excitement lasting twelve days, and depression lasting on an average sixteen. Twenty experiments failed to give the expected results; on the contrary, the average during depression was somewhat lower than during exaltation. He then decided to make daily examinations, and this was done during two months with instruc-

tive results. It became clear that a period of exaltation was always initiated by a decrease of corpuscles (so that the psychic change could even be foretold before the patient herself was aware of it), and that a period of depression was initiated by a rise in the number of corpuscles. But these rises and falls were never maintained beyond the first day, being then slowly reversed. Thus the average during each period altogether failed to indicate the conditions which ushered in that period.

The next subject was a man 37 years of age, who had at first been regarded as a melancholiac, but was now found to be a general paralytic. He presented curious daily alternations of exaltation and depression, each lasting twenty-four hours. In this case it was found that there was a sudden increase of corpuscles accompanying depression, and a sudden decrease accompanying excitement, appearing with great regularity, and on account of the brevity of the period not followed by any reaction.

In order to verify these observations on a normal subject, Dumas carried on a series of experiments on himself. He is always physically and mentally depressed on awakening in the morning, with cold hands, pulse at 54, and low tension, requiring tonics to work, while in the evening the hands are almost feverishly hot and the pulse tension high. He invariably found that the corpuscles were increased in the morning, the average difference being as much as 850,000.

It will be seen that on the whole this investigation confirms the physiological theory of the emotions originated by James and Lange.

The Psychology of Laughter.—Professor Stanley Hall, whose interesting study of fears among normal children and adults was noticed in the Retrospect last year, has now carried out a similar study on the phenomena of laughter (G. S. Hall and Arthur Allin, "The Psychology of Tickling, Laughing, and the Comic," *Amer. Journ. Psych.*, vol. ix, No. 1, 1897). A very full and elaborate syllabus of questions—the precise answering of which, it may seriously be said, would be scarcely a laughing matter—was issued, and answers received from or concerning nearly 3000 people. It is on these answers that this study of the phenomena of tickling and laughing—their manifestation, causes, and significance—is founded. The description of the phenomena and their varieties is very detailed; in seventy-one cases laughter begins with the eyes, in fifty-one with the mouth. As to body movements, about two-thirds assert that the shoulders, one-third that the diaphragm first moves. In exceptional cases there is no feature or movement that may not be the first symptom or aura of a laugh. The description of the various convulsive and uncontrollable muscular phenomena of laughter leads to the conclusion that, "on the whole, the laugh is not unlike an epilepsy, from the aura, at which stage it may be checked, to the subsequent exhaustion." Laughter is connected

with the remission of arterial tension; the authors suggest that the characteristic attitude of the laugher favours this process. Many instances are given of those paradoxical cases in which grief causes laughter, and reference made to the case of the frontier man who, returning home to find his wife and children murdered by Indians, burst out laughing until he died from a ruptured blood-vessel. An uncontrollable tendency to laugh when grieved, or in the presence of grief, is fairly common among young girls.

The authors consider that the act of physical tickling is fundamental to a proper understanding of laughter, and their returns cover the phenomena of tickling. Various facts are brought forward in support of this position, especially the actions of children, and their "deep impulse to fuss with the skin." The strange sensitiveness to minimal tactile impressions all over the skin, which has never been explained, and which reverses the psycho-physic law, the authors are inclined to regard as very primitive, representing "the very oldest structure of psychic life in the soul," and being reminiscent of "the primal vigour and spontaneity of the dawn of psychic life, and especially of sight and hearing." They also refer to the great influence which parasites have probably had, and to the connection between ticklishness and the sexual emotions. (Vasey maintained that children would never learn to laugh if they were not physically tickled, especially in forbidden places.) The paper is full of admirable suggestions which cannot be summarised without injustice, and the authors conclude with the broad statement, "While we cannot agree with Hughlings Jackson's conception of fear as broken-down anger, it is possible that æsthetic pleasures generally, genetically considered, and even some of the joys of religion and virtue, are laughter diffused, tempered, properly alloyed with pain, and minted for general circulation through all our psychic activities."

The Origin of Number-forms.—The "number-form," as first named and described by Galton, is related to the same group of phenomena as coloured hearing, and its character is such that when a number is thought of it invariably appears to the mind's eye in the same place in a visual diagram, which is usually an irregular composition of lines. It has lately been investigated afresh by Mr. D. E. Phillips, of Clark University, whose inquiries extended to 974 school children of Worcester, Mass., and 343 miscellaneous adults, the sexes being about equally divided ("Genesis of Number-forms," *Amer. Journ. of Psychology*, vol. viii, No. 4, 1897). Nearly 7 per cent. of the males and nearly 8 per cent. of the females were found to have such number-forms, and thirty-five of these forms are diagrammatically represented. The number-form appears very early; of 280 persons who answered the question as to when the form first appeared, 241 could not remember when it did not exist, and most of the remainder placed it at a very early age. Phillips even finds, to his surprise, that there is some reason

to believe that the form appears before the power to recognise written or printed figures; at the same time a period of gradual formation and development is often evident. Unlike Galton, he does not find the number-form specially common among imaginative persons.

The author attempts to suggest an explanation of the origin of these forms. It appears certain, he says, that such visual diagrams are only less ordinary examples from a much wider field of mental phenomena. He finds that most people who deny that they have any number-form (210 of 250 adults examined) will still discover that they "have a feeling that numbers in some way recede from them." Nearly all persons, he believes, possess some idea of extension of numbers, more or less definite. We see here the dominance of the eye over the other senses. The saying of Sylvester is recalled, "Every time I go deep enough I find a geometrical bottom." The explanation of the genesis of the number-form is to be found in the motor and space element in thought.

Researches on Reaction-time.—The fourth volume (for 1896, but not issued until February, 1898) of Dr. Scripture's *Studies from the Yale Psychological Laboratory*, contains two interesting investigations on reaction-time. One, by Dr. Scripture himself, deals with various experimental modifications of reaction-time. Thus the influence of a constant electric current through the head was investigated. The city supply was used as a source of current; it was passed through an Edelmann milliamperemeter. The tests for the effects of the current were, for simple reaction-time, pressure on knob, when shutter of Scripture's pendulum chronoscope exposed a coloured disc; for complex reaction-time one of two colours was exposed, the subject being required to react only to one. Experiments on five subjects showed almost constant quickening of both simple and complex times under the stimulus of the electric current. It was also the general testimony of the subjects that there was a decided feeling of refreshment after the experiment; only one subject, to whom a high current of nine milliamperes was used, complained of vertigo, double vision, and peculiar metallic taste.

The influence of visual fatigue was also investigated, the fatigue being produced by a small Geissler tube connected with a spark-coil in the adjoining room. The experiments were continued for a long time, records being taken a number of times at the beginning, and then a number of times at the end. The room was dark and silent. Observation was made not only on the reaction-time, but also (though the subject was unaware of this) on the time of holding down the key. Reaction-time and holding-down time were both increased, and the subject felt a strong sense of contraction between the eyes, and the necessity for great effort in fixing attention on the tube. One eye was then bandaged, in order to some extent to eliminate convergence, and the subjective effects were

increased, the subject feeling stiff, fatigued, and as if floating away or dropping to sleep, thus closely approaching the hypnotic state. Then the room was lighted up to eliminate accommodation, the result apparently showing that fatigue of attention alone produces very little lengthening, though the holding-down time is lengthened, showing a tendency to fall asleep. The total results seem to show that fatigue in reaction-time increases with complexity of the adjustments required for perceiving the stimulus, most fatigue being produced when attention, convergence, and accommodation were all involved. The tendency of the subject to fall into a state of doze, as indicated by the holding-down time, depends on repetition of the stimulus ([?] fatigue of attention) as well as fatigue from the adjustments. These results bear on the common methods of hypnosis.

In another series of experiments, carried out on cats, comparison was made between simple reaction-time and direct stimulation of the cortex. We may notice first the remarkably quick reaction of the cat to moderate electric shock (the cat registering reaction by breaking circuit through withdrawing leg or head); for the right fore-foot it was as quick as 41σ ; in a dog twice as large it was 89σ , while in human beings it is rarely less than 100σ . A large cat was quicker than a small cat, but in both the hind foot was slower than the fore-foot, a result analogous to that found in man. Under ether (before operation) there was no reaction, except for the *retrahens aurem* muscle; the temporal muscle, when exposed, responded. The reactions produced by direct stimulation of the cortex were very slow, this retardation being evidently due to ether. Scripture considers that there is a large field for experiments on animals, and that the methods of experimental psychology will lead to a new quantitative science of comparative psychology.

The same volume contains a study by Dr. A. G. Nadler on "Reaction-time in Abnormal Conditions of the Nervous System," which may also be summarised in this connection. Four types of diseased nervous system were selected: neuritis, hysteria, locomotor ataxy and allied conditions, alcoholism. Over fifty subjects, taken from the University Clinic, were examined for simple and complex reaction, tested as in the study already referred to. In classifying the results the median was used instead of the average.

In the neuritis group—local neuroses of branches of the brachial plexus due to traumatic or toxic causes—it was found, as might be anticipated, that the reaction-time was materially lengthened, and that when one arm only was affected reaction was longer in the diseased arm.

In the group of locomotor ataxy and multiple neuritis simple reaction-time was markedly long, longer in those affected by multiple neuritis than in the tabetic patients. Thought-times were long also, but more so in the tabetic cases. There was an astonishing

regularity of simple reactions in the locomotor ataxy cases, as shown by smallness of mean variations, and this the author regards as inexplicable.

The alcoholic cases were men who had drunk enormously during their lives, who had just been on a "bout" for some days, and were on the verge of delirium tremens. Their minds, however, were clear and active; they were acutely anxious about their condition, unable to sleep, and utterly worn out. It is, however, rather surprising to find that the simple reaction-times in this group were even shorter than in any series of experiments performed on healthy persons at Yale; the complex times, however, were longer. After treatment there was a general decrease, making simple reaction-time less than the normal, and complex time about normal. "These results," Nadler remarks, "appear to show that the effect of the alcoholic toxine upon the individual is to heighten the power to perform simple regular movements, but that when a judgment is needed the individual is at a disadvantage."

In the hysteria group the reaction-times were very erratic; that, indeed, was their chief feature, for while the median for simple reaction-time was almost normal, the mean variation was extremely large. Complex time was much above normal; the subjects had great difficulty in concentrating their attention, and were constantly forgetting what they were attempting to do. One subject could not refrain from reacting to every fall of the shutter, regardless of the colour it showed, so that no record could be obtained from her.

AMERICAN RETROSPECT.

By Dr. C. Hubert Bond.

Cerebral Diplegia of the Family Type.—Under this name Dr. F. X. Dereum describes (*Journ. Nerv. and Ment. Disease*, July, 1897) an affection attacking three children out of a family of four. Each of the three affected children was born apparently healthy, and developed normally up to a certain period,—sixteen months in the case of the eldest, to four years in the next, and to two years in the third. Cessation of normal development in the first child followed upon a severe general convulsion, upon an attack of measles in the case of the other two. Each then became dull and stupid, the eldest now being quite idiotic, and each became the subject of marked spastic diplegia and epilepsy, the latter assuming the character of *petit mal*. All three children now present the tumid, sodden features so often associated with epilepsy. The reflexes are exaggerated wherever the contractures and rigidity do not interfere with their being tested. In neither case was there nystagmus, but in the eldest, athetoid movements of the hands may

be sometimes noticed. The remaining child, the second in age, now nine and a half years old, possesses good physical health, and his intelligence is up to the average, even somewhat above it, but it is noteworthy that he has not been attacked by any of the exanthemata, nor has he had any serious illness. As regards the family history, that on the father's side was negative, and this is emphasised by the fact that the mother of these children was his third wife, and that his numerous progeny by the first and second wives were all normal. But there is a history of the child of one of the paternal aunts of the mother being paralysed—she thinks in a manner similar to that of her own children. Thus it would appear that these children present a feebleness of development on the part of the neurons of the motor area; and that, while they possessed the power of developing in a normal manner so long as not subjected to any malific influence, their vulnerability was so great that they underwent degenerative changes from very slight causes. To a certain extent these cases may be regarded as analogues of Friedreich's ataxia.

Varieties of Brain-cell Degeneration.—In the *Journ. of Nerv. and Ment. Disease*, August, 1897, is an account of a paper by Dr. C. L. Dana, embodying the results of two years' study of anatomical changes in the brain-cells in acute alcoholism. Ten cases are reported, and Nissl's stain was the chief method employed. What was known as acute alcoholic meningitis would appear not to be really a meningitis at all, despite the fact of a distinct clinical course of meningitis, nor usually would the microscope show any migration of leucocytes or evidence of encephalitis. Alcoholic meningitis is not primarily a vascular disorder, but a slow poisoning, and therefore required a study of the nerve-cell. He would combat the statement made by some, that it was not possible to make any differentiation of cell-degenerations according to the pathological irritant concerned. Death from sunstroke with pyrexia and acute delirium yielded a distinct form, namely, sudden and general pigmentation, especially of the larger cells; while another and distinct form, involving the smaller cells as well, could be found in pernicious anæmia. He would describe three varieties of cell-degeneration: (1) intense pigmentation of the larger cells chiefly, with degeneration of the cytoplasm; (2) a general cell-atrophy of the body and nucleus; and (3) a good deal of change in the cell-body, with many neuroglia nuclei in the pericellular spaces. No definite type of cell-degeneration, he said, could be made out in alcoholic cases, probably because the mode of death was by auto-toxæmia and pyrexia.

Hydrocephalus in Adult Life.—A report, by Dr. M. Prince, of three cases—two followed by autopsy—together with a summary of the chief facts known of the subject (gathered mainly from Quincke's monographs), appears in the August number of the

Journ. of Nerv. and Ment. Disease. The writer believes that the disease occurs much more frequently than it is diagnosed. Mention is made of the vagueness and uncertainty which at present surround the subject, and of the inexact picture that is usually given of the affection. That it is of an inflammatory nature is a question much open to doubt. His first case was that of a woman, in whom the symptoms came on apparently in direct relation to severe injury to the head; but it should be stated that before this she had had "freaks of leaving home suddenly without apparent reason, and returning after some time." In analysing her symptoms he divides them into *general*—irregular fever, slight chills, headache, vomiting, stupor, delirium; and *local*—cervical rigidity, tenderness and pain, paralysis of the right, third, and sixth nerves, paralysis of both pupils, retracted abdomen, mild rigidity of the biceps muscle of both arms, localised spasms, temporary weakness of the right seventh nerve. The local symptoms were not manifest until the fourth week, and up to that time the case was not necessarily cerebral. Special emphasis is laid upon the great variability in the intensity of the general symptoms. An abscess, possibly in the cerebellum or temporo-sphenoidal lobe, was diagnosed and explored for. Death occurred the third day after the operation.

At the autopsy the skull was free from injury, while the brain at the vertex showed flattening of the convolutions with complete obliteration of the sulci, and was abnormally elastic. The vessels at the base were normal, but here there was an excess of cerebrospinal fluid; there was no pus anywhere. The lateral ventricles were dilated to treble their usual size with clear fluid, and their ependyma was pale, velvety, and sodden. In the second case, a pronounced neurasthenic, the symptoms followed upon her second confinement. Of these the most prominent were "delirium, stupor, coma, and dementia,—the last simulating, as was thought at one time, general paralysis; chills and fever at first, later normal and subnormal temperature, rapid, followed by slow pulse; abdominal pain and tenderness and cervical pains; severe headache (she at one time said, "I believe my head will burst"); nausea and vomiting; optic neuritis; muscular weakness, but no paralysis or anæsthesia." Changes in intensity of many of these symptoms were again noticed; some would disappear and reappear. After death the brain presented much the same appearances as in the previous case, but it was the fourth ventricle that showed the greatest distension. The ependyma, however, was smooth and shiny, and microscopically yielded no changes except a slight increase of the neuroglia beneath it, and no inflammatory appearances. The third case had a very sudden onset, and there was nothing with which it could definitely be connected. She gradually recovered, and therefore the positive evidence in the two prior cases is lacking, but it seemed to the writer that no other diagnosis was possible.

The fundamental conception, he says, would seem, then, to be that a meningitis, especially an ependymitis, may give rise to a simple serous effusion as well as a purulent one. It may occur at all ages, and trauma, mental strain, alcoholism, otitis media, and acute infectious diseases may be regarded as the chief causes. It may be acute or chronic,—the former simulating tubercular meningitis, while the latter is frequently confounded with the presence of a tumour. The morbid anatomy is mostly limited to the accumulation within the ventricles of clear fluid, containing little or no albumen or cellular elements, resulting sometimes in enormous distension of the ventricles, flattening of the convolutions, and obliteration of the sulci. The sudden development and the variability of tension, he says, are rendered intelligible by Quincke's analogy, where he likens the affection to angio-neurotic acute œdema of the skin.

Katatonia.—A paper read by Dr. F. Peterson, and based upon four examples of this disease, is reported in the *Journ. of Nerv. and Ment. Disease*, September, 1897. He pointed out how contradictory are the descriptions of the affection: some hold that it is a clinical entity, some describe it as a variety of melancholia, while others would term it as a form of alternating insanity, others yet again as a species of hysteria. His conclusions were—“(1) That katatonia is not a distinct form of insanity; (2) that it has no true cyclical character in its manifestations, and hence cannot be classed as a form of circular insanity; (3) it is simply a type of melancholia, and it is therefore not desirable to retain the name.” Katatonic melancholia would be a conveniently descriptive term. Its prognosis, in his opinion, was graver than in any other form of melancholia.

THERAPEUTIC RETROSPECT.

By Dr. Harrington Sainsbury.

Spermin (Poehl's). *Deutsche med. Wochenschr.*, October 7th, 1897. —Two cases of tabes, treated with injections of Poehl's spermin, are recorded by Dr. M. Werbitzky from Professor Popoff's Clinique in St. Petersburg. The first case is most typical of tabes. It occurred in a soldier of 60 years of age, and as a result of the injections, ten in all, very marked improvement set in. The improvement was noted in the gait and posture, as also in the pains, and in the skin perception of sensations—tactile, electric, and other. The second case, not so typical, received fourteen injections. In him it was noted that there was improvement in the sense of well-being, in the sensitiveness of the skin to stimuli of all kinds, in the ataxy, and in the muscular power. The amount of the injections is unfortunately not stated.

Anesine, a new substitute for Cocaine. *Deutsch. med. Wochen-*

schr., September 2nd, 1897.—Dr. V. Vámosy draws attention to a new compound, trichlor-pseudo-butylalcohol, *alias* acetone-chloroform. He points out that whilst cocaine is of the greatest value as a local anæsthetic, it possesses general poisonous action, and local after-effects which are by no means desirable; hence the introduction of such substitutes as tropacocaine, eucaïne, holocaine, but all these come very far behind cocaine as local benumbers, and, moreover, they are poisonous, though to a less extent. Of anesine Dr. Vámosy employs, as highest strength, a 1 to 2 per cent. solution, and this, from experiments upon animals, as also from results obtained by his colleagues in medicine, surgery, and dentistry, he finds to be a very decided anæsthetic. In degree of action it about corresponds with a 2 per cent. solution of cocaine, but it cannot compare with the higher solution strengths of cocaine on account of its own insolubility. In surgery the drug was employed always hypodermically, and in quantities which ranged between 1 to 10 Pravaz syringefuls of the above solution, yet in no case were any toxic symptoms observed. Its harmlessness is insisted upon also by the workers in the throat and nose department, also in the ophthalmic and dental departments. Among minor advantages it may be mentioned that anesine does not cause salivation when painted on the throat, an effect which often proves very troublesome when cocaine is used. Anesine may be obtained from the chemical manufactory of F. Hoffmann, La Roche, et Cie., in Bâle.

Kryofin. Deutsche med. Wochenschr., November 4th, 1897. Beilage.—Dr. Schreiber describes, under the above name, the characters and action of a new antipyretic and analgesic. In composition it is a benzene derivative, and it approaches closely to phenacetine in its composition; in place of the acetic grouping we have a corresponding one of methyl-glycollic acid.

Kryofin is soluble in 52 parts of boiling water, in 600 parts of cold water; it dissolves in alcohol, ether, chloroform, fixed oils, and in glycerine.

Upon animals the effects of kryofin in toxic dose are paralytic, and, in addition, the respiration and pulse rates are much reduced in frequency; the kidneys have not appeared to suffer. In man, though very large doses up to 80 grains were in general borne without unpleasant sensations, yet occasionally doses over 15 grains would cause a cyanosis, with retarded breathing and pulse rates, the effects lasting perhaps for hours.

The dosage recommended is 0.5—1 gramme; at the most 2 grammes (30 grains) were administered in the twenty-four hours.

As an antipyretic kryofin gave fairly definite results, but secondary effects were not wanting. In one case a profuse sweating, in another case severe collapse (both of these cases were of advanced phthisis). In other cases the patients would sometimes complain of feeling ill.

Kryofin proved its powers in headaches, even in those of uræmia and of cerebral syphilis with periostitis, but it did not seem to possess any advantage over antipyrin.

On the whole, as far as present experiments have gone there seems to be no distinct reason why it should supersede antipyrin and phenacetine.

Phesin and Cosaprin.—Two new drugs, derivatives respectively of phenacetin and antifebrin, are reported under the above names by Drs. v. Vámosy and Fenyvessy in the *Therapeutisch. Monatsh.*, August, 1897. Their experience is at present confined to the action upon animals, but the drugs are upon trial clinically in some of the hospital wards in Budapest. At this stage of proceedings the investigators draw attention to the marked antipyretic action of both preparations, which action suggests that they might well be used as substitutes for phenacetin and antifebrin. They further point to the following advantages which the drugs present, viz. : (1) Their ready solubility, which permits of a readier administration by the mouth, and their use, if need be, hypodermically. (2) Their speedy action—they take effect very quickly. (3) Their relative innocuousness. As a disadvantage they state that the effect is relatively transitory; this, however, they suggest might be got over by a more frequent smaller dosage. Drugs of this class, as we know, combine antipyretic with analgesic effects, and they are mentioned here for this reason.

Lactophenin. *Therap. Monatshefte*, September, 1897.—Dr. Wefers reports a case of poisoning by lactophenin. A vigorous young lady received $7\frac{1}{2}$ grains of lactophenin on account of headache (she had on previous occasions taken 12 grains of phenacetin with success, and without any bad effects); about twenty minutes afterwards she suddenly ceased speaking in the midst of conversation, looked bewildered, and grew very red in the face. She gave no immediate response when addressed, then said that she had experienced so severe an attack of giddiness that she could hardly keep upright; the pulse was quickened, intermittent, of moderate tension.

Graves' Disease, Treatment of. *Wiener medizinische Wochenschr.*, 1897, September 4th, p. 1672.—At the Kongress für innere Medizin, held in Berlin in June of last year, Dr. Eulenburg, dealing with Graves' disease, drew attention to the symptomatic growth of this disease from that earlier stage when palpitation, thyroid enlargement, and exophthalmos summed up its clinical aspects. The addition of the eye symptoms of v. Graefe, Stellwag, and Moebius, of Marie's tremor, of the diminished resistance of the skin to the galvanic current, described first by Romain, Vigouroux, and Charcot, of the alimentary form of glycosuria, frequent, as shown by Chrostek, and lastly, of the large group of symptoms which belong to the neurasthenic or neurotic type,—these additions have served to build up a disease of considerable complexity.

Three theories have arisen to explain the symptoms, viz. the hæmogenic, the nervous, and the thyroid secretion hypotheses. Not one of these covers the ground quite satisfactorily, and we find that methods of treatment based on each one of these theories, or on a combination of more than one, sometimes succeed, sometimes fail.

Thus the hæmogenic theory finds its corroboration in the admitted occasional success of tonics and of medicines regarded as builders up of the blood. Here also belong certain dietetic and climatic treatments (in particular prolonged stay at high altitudes, even during the winter); also hydropathic methods of cure.

The neurogenic theory is indicated by the value of electric treatment, and more recently by the success obtained by psychical methods.

The more modern "thyreogenic" theory has led up to thyrectomy and the use of thyroid preparations. Concerning these last, Dr. Eulenburg says that the best that can be said of the use of thyroid preparations is that if given *circumspectly* they do not appear to do harm. Of the operation of thyrectomy he says that, in spite of its laudation by many surgeons, it may in the great majority of cases be entirely dispensed with, and that it should be reserved for those cases which exceptionally threaten by their severe local effects.

Tuberculin TR. Preliminary reports on the use of Tuberculin TR., by Jaroslav Bukovsky. *Wiener medizinische Wochenschr.*, October 2nd, 1897.—The writer refers to nineteen cases of tuberculosis in all (lupus scrofuloderma, multiple tuberculosis, including one case of infiltration of one apex), treated with Koch's new tuberculin. The results obtained cannot be said to be very encouraging; true, sufficient time has not yet passed for a complete testing, but some positive observations have been made. Thus, in general, the effect upon the nutrition was unfavourable, a loss of weight being recorded in the majority of cases in spite of a full dietary,—a loss of eleven pounds occurred in one case. The local effects in superficial lesions did not exceed the local effects of the older form of tuberculin. As to immunity conferred by TR. the evidence was inconclusive, but in one case in which the course of TR. had been completed it was found that the patient gave a very marked reaction to small doses of the older tuberculin. And in another case, in which a lupous patient was about to be discharged, the tuberculous foci having all disappeared and given place to scar tissue, whilst still under the treatment with tuberculin TR., a relapse took place in the scar tissue in the form of miliary foci.

Schnabl. (*Wien. med. Wochenschr.*, October 16th, 1897) does not report favourably of the use of the new tuberculin; he records fever, loss of weight, and night sweats as apparently following upon the injections, and he was unable to reach the upper limits of Koch's doses, because of the impaired state of health.

Disinfection of Dwelling-rooms and Larger Spaces.—This subject has an interest for all those who have to control large institutions into which, in spite of every care, infection is liable to find entrance. It will therefore commend itself to the superintendents of asylums. Dr. H. Aronson brings before us a new disinfectant in the shape of formalin. This in the solid form as pastilles is very portable, and by the aid of a suitable heating apparatus may be readily volatilised, and carried in the form of fumes to all parts of the chamber to be disinfected. The disinfectant has proved its powers upon staphylococci, streptococci, *Bacillus pyocyaneus*, typhoid and diphtheria bacilli, the bacilli of anthrax and of tubercle. With the very uncertain results which sulphur accomplishes, even when consumed in fullest quantity, we shall welcome this addition to our available list of disinfectants. Formalin has no damaging effect on clothes and furniture (consult *Zeitschr. f. Hyg. u. Infectiionskr.*, Bd. xxv, quoted from *Wien. med. Wochenschr.*, October 23rd, 1897).

Treatment of Insomnia.—An interesting discussion upon this subject took place at the Montreal meeting of the British Medical Association last autumn (see *Brit. Med. Journ.*, October 2nd, 1897). The subject was dealt with from its medical and physiological aspects, German See's classification of insomnia being adopted by Professor C. K. Clarke, viz. 1, dolorous; 2, digestive; 3, cardiac and dyspnœal; 4, cerebro-spinal and neurotic; 5, psychic; 6, the insomnia of physical fatigue; 7, genito-urinary; 8, febrile; 9, toxic. He also adopted Howell's theory of sleep as due to—

- (1) A diminution of cortical irritability, the result of fatigue.
- (2) A voluntary withdrawal of sensory and mental stimuli in the preparations for sleep.
- (3) A lowered blood-pressure within the cranium due to the dilatation of the vessels of the skin (Howell), or of those in the splanchnic area (Hill); this latter, *i.e.* the physiological basis of sleep, was discussed chiefly by Professor Webb Wilcox.

On all hands it was admitted that insomnia required very cautious and well-considered treatment, and that the recourse to drugs was the last step to be taken. Passing to the use of drugs, Professor Wilcox made special mention of pelletin, the alkaloid derived from the *Anhalonium Williamsii*, a species of cactus found in Mexico. The dose of the chloride of pelletin, a very soluble salt, given hypodermically, is, according to Pilcz, $\frac{1}{3}$ gr.; according to Jolly the dose may be raised with advantage to one grain. Few by-effects have been recorded, but these include heaviness of head, giddiness, some slowing of the pulse, and sometimes restlessness before the drug takes effect. After-effects seem to be lacking at present, and the sleep obtained is said to be very refreshing.

Professor Wilcox, after a survey of the list of hypnotics at our disposal, summed up in favour of four, viz. paraldehyde, chloral-

amide, pelletin, trional. He places them in the above order of *potency*. Judged by *rapidity* of action he ranges them thus: pelletin, paraldehyde, chloralamide, trional; by *duration* of effect thus: trional, chloralamide, pelletin, paraldehyde; by *habituation* thus: pelletin (slight), trional, chloralamide, paraldehyde; by *safety* thus: chloralamide, pelletin, paraldehyde, trional.

McPhedran, of Toronto, dwelt rather upon the dangers resulting from the use of hypnotics, but he mentioned paraldehyde as a comparatively safe drug.

Dr. Ferguson, of the Western University, commenting on bromides as drugs which permit sleep rather than enforce it, confesses his belief in the superior virtues of the potassium salt, the comparative depressant effect of which, as taught, he holds to be theoretic, and not to obtain for ordinary doses.

Donald MacAlister, of Cambridge, referred to his experience in the treatment of insomnia among young students of both sexes, and urged the importance of the air-bath, also of a modification of the cold pack or drip sheet, and such like measures. Where these failed he said stimulation rather than sedative action was often called for, and that strychnine was often of great value in such cases, $\frac{1}{40}$ — $\frac{1}{20}$ grain of the hydrochlorate at bedtime being often an efficient hypnotic. Occasionally a cup of strong coffee would serve. The only other drug used regularly in the treatment of this class of insomnia was sulphate of magnesium. If his hand was forced, Dr. MacAlister had recourse to the bromides or to chloralamide, which he very carefully did not *prescribe* in writing.

Dr. Learned, of Northampton, Mass., described a series of postures to be assumed in regular sequence in bed, *horâ somni*. The postures were such as to involve considerable fatigue to the muscles used in maintaining the positions, and they were accompanied by a slow regular breathing of six or eight respirations per minute. Each enforced posture would last during ten to twenty respirations. In his method the slow, regular counting of the respirations formed one factor, upon which he laid stress, mind and muscle both contributing towards the result; he also insisted upon there being no intervals, no vacations between the postures assumed. The value of Dr. Learned's contribution is that it has received the sanction of his own experience.

Dr. Whitla thought the danger of chloral had been much exaggerated, and he urged, rightly, that it was fallacious to compare its statistics on a vast scale with the statistics of the more recent and insufficiently tried drugs. Alcohol in his opinion was perhaps the best of all hypnotics but for its habit-danger.

Dr. Leech, the president, summed up an interesting discussion.

Scopolamine as a Calmative in Insanity.—Much confusion has existed and still exists in the nomenclature of the alkaloids of the group *Atropaceæ*, which includes the important drugs belladonna-hyoscyamus, stramonium. Having become familiar with the alka-

loid hyoscine, from *Hyoscyamus niger*, we have recently been taught that its proper name should be scopolamine, the name being derived from the *Scopola carniolica*, native of Austria, from which this alkaloid is also obtainable. The question is not of very serious import, for, as Martindale and Westcott state, it is "from a therapeutic point of view an alteration of name" only. Accepting the newer nomenclature, we learn that Dr. S. Tomasini has recently employed the hydrobromate and sulphate of scopolamine with equally good results as sedatives in maniacal cases and periodical insanity. He injects the salts hypodermically in doses of $\frac{1}{50}$ — $\frac{1}{64}$ grain. The injections were not painful, nor did they give rise to any local reaction. Marked dilatation of the pupils occurred after the injections, but no nausea or other toxic effect is mentioned; the sleep which was obtained is stated to have been quiet and physiological in character. A drawback is to be noted in the readiness with which habituation obtains, the dosage calling for rapid increase.—(*Amer. Journ. of Med. Sci.*, September, 1897, from the *Riforma medica*.)

The Wet Pack in the Insomnia of Neurasthenics.—Dr. G. Richard recommends a modification of the ordinary wet pack in the shape of flannel roller bandages, which are dipped in water before bandaging. The application of a double spica to neck and shoulders and thighs, with the plain spiral to the thorax and abdomen, is, however, a complicated proceeding when compared with such measures as the drip sheet or the plain pack; and though doubtless good results are obtainable by this method, are these in any way better than those obtained by a simpler procedure? According to Dr. Weir Mitchell the "drip sheet" of hydropathic establishments (which is something quite different from the wet sheet pack) is a remedy past praise in many forms of insomnia, and there is no doubt that we do not in general utilise to their full the virtues of water applications in the treatment of this most obstinate affection, the sleeplessness of the neurasthenic. Dr. Richard records his experience in the *Revue Thérapeutique*, No. 6, 1897. (See *Amer. Journ. of Med. Science*, September, 1897.)

FRENCH RETROSPECT.

By Dr. Macevoy.

Note on a Case of Epileptic Jaundice.—Féré believes, judging from the dearth of references to it in medical literature, and reviewing his own extensive experience, that the occurrence of jaundice after epileptic attacks is rare, and therefore records a case which he has observed in "*Le Progrès Médical*" (1897, No. 24).

Mdme. B—, aged 49 years, of a "nervous" family, had eclampsia during her first confinement at the age of twenty-one years, and began to suffer from epileptic fits at the age of forty-seven years.

Her first attack occurred a fortnight after a shock due to being caught in a storm, which also caused arrest of menses. She did not pass urine during her attack; but on awakening, the urine first passed was observed to be dark brown; a little later, jaundice of conjunctivæ and skin was noticed. The signs of obstructive jaundice persisted for eight days, accompanied with itching and a slow pulse (28 per minute on second day). For the next three months she had fits every fortnight, always during the night, each one followed by more or less jaundice. The urine first passed after each fit presented a constant appearance.

After a time the patient was treated with bromides, and the interval between the fits was decidedly lengthened (*e. g.* six months); but there was no diminution in their intensity, and each fit was followed by jaundice.

Between the attacks examination revealed no sign of disease of the liver, and her digestion was good. After one of the fits, when she passed water unusually early, at an interval of one and a half hours, the presence of bile was easily detected.

Féré believes the explanation of the production of the jaundice is most likely that suggested by Potain in the case of "emotional jaundice" (from fright, anger, &c.). A dilatation of the abdominal vessels takes place; and pressure diminishing in these vessels, while the internal pressure of the hepatic vessels is unaltered, the passage of the biliary elements by osmosis or otherwise from the biliary ducts to the blood-vessels becomes easy.

Féré leaves out of consideration the slight yellowish tinge which is noticed before and after fits in the eyes of epileptics subject to gastric troubles, when talking of jaundice after epilepsy; these cases are quite different from the above.

Suggestion in Warfare.—M. Félix Regnault (*Revue Scientifique*, 1896, No. 25), in an interesting article extracted from his work "Hypnotisme, Religion," reviews the experience of several campaigns, principally those in which the French have been engaged during the present century, with the object of showing the marvellous influence of suggestion on the troops engaged in warfare.

"A lost battle is a battle which is believed to be lost;" and analysing the various elements of a fight, one sees that a defeat is moral and not material,—that is, not dependent on the number of the slain, but on the moral condition of the survivors; and the author instances battles won by Napoleon through obstinacy in not leaving the field after severe initial losses, and persuading his troops that victory was at hand. The power which Napoleon possessed in such a high degree—the supreme quality of a general—that of imparting confidence of victory to his soldiers, is, of course, in the nature of suggestion. Arcole, Eylau, Arcis-sur-Aube, &c., illustrate the results of this powerful influence.

Cavalry charges have no value beyond the moral impression which they produce; but their effect on occasion in suggesting fear

with the enemy has led, as Regnault shows, to almost incredible victories. This same suggestion provoked by panic has again and again brought about defeat, even of the best troops (Mans, 1870, Saint-Privat, &c.).

Numerous instances of shameful capitulations mentioned by Regnault illustrate in a remarkable manner the moral effect of certain defeats, *i. e.* they result from suggestions of fear, of cowardice.

The advantages of attack over defence, as suggesting superior moral confidence, are therefore undoubted in warfare; and in this connection we are reminded of the short, sharp work of troops in late wars contrasted with the prolonged duration of wars before this century. To-day, ceaseless attack without respite in order to demoralise the enemy, to rob him of his courage, leads to success. Want of confidence of the French generals in 1870, with its suggestive effect on the soldiers, led to an attitude of defence, and therefore defeat, says Regnault.

From his study Regnault draws conclusions which are applicable to the present time. Forts, cannons, guns, &c., all the engines of war are being perfected; but is sufficient attention being paid to the moral factor? And yet, as he remarks, this is everything when we are dealing with millions of men suddenly dragged from their hearths and full of fear. In these more enlightened days one suggestion may turn out to be of great importance; the nation who goes to war persuaded that her rights have been assailed, that to surrender would mean dishonour, would start with a great advantage. To successfully suggest to an intelligent people that they are fighting for their rights, for a good cause, will be a powerful factor in ensuring victory, and should be the aim of any statesman who premeditates war.

Apoplectiform and Epileptiform Attacks in General Paralytics.—In reviewing various theories which have in succession been suggested to explain the occurrence of apoplectiform and epileptiform attacks in general paralysis, Professor Pierret, of Lyons (*Le Progrès Médical*, 1896, No. 40), thinks that one which deserves a certain amount of attention is the inflammatory, especially for those cases which are accompanied with a rise of temperature. Unfortunately, he says, microscopic examination does not support this contention, inasmuch as we do not find lesions in cases which die immediately after a series of epileptiform attacks differing from those found in ordinary cases of general paralysis (without such attacks). On the other hand, the temperature may be subnormal in some cases—perhaps a more valid argument than the preceding against the view that the attacks are inflammatory. No solid support is forthcoming in favour of the view that œdema is the cause; it is so frequently found in the brain of general paralytics in all stages, and is probably compensatory. He is much more inclined to attribute them to errors of nutrition with stasis of

toxic products, which affect those cells which are still able to react.

When the kidneys are diseased, and there is retention of urine, the possibility of their uræmic origin must not be lost sight of; but as it is not uncommon to look far and wide for things close at hand, he believes that constipation, indigestion, the use of meat in a state of incipient decomposition, may cause certain attacks—probably by absorption of toxic products, as has been shown to be likely in the genesis of some cases of puerperal mania (e.g. by A. Campbell Clarke, *Journal of Mental Science*, 1886-7).

The epileptiform attacks of general paralysis are not always as sudden in their onset as is generally believed. There are often premonitory signs. When, for example, says Dr. Pierret, they are related to digestive troubles, they are preceded and perhaps foretold by a gradual elevation of temperature.

An Extraordinary Child.—M. Carl Stumpf, of Berlin (*Revue Scientifique*, No. 11, 1897) gives an account of his study of an interesting child of 4 years, son of a butcher of Brunswick, who two years ago attracted a good deal of attention in Berlin. Of fair general development, the shape of the head, which is elongated and prominent in the occipital region, at once strikes the observer. On account of his restlessness, and the difficulty of attempting methodical experiments with him, Professor Stumpf was content with observing the spontaneous manifestations of his marvellous faculties. An extraordinary memory of events relating to history and biography, &c., was noticed; he knows the dates of birth and death of the numerous German emperors since Charlemagne, of a number of generals, poets, philosophers, often including the day and place of their birth. He answered all kinds of questions concerning the Thirty years' and Seven years' wars—battles of these wars, &c. Not only is his memory distinguished by rapidity and duration of impressions, but a certain similarity is sufficient for their reproduction, so that he easily reads all kinds of hand-writings, and is enabled to complete words written in abbreviation. He exhibits well the part which is played in *rapid reading* by the mental perception of the subject-matter long before the text has been read out; that is, the ideas arising from words alone impress the mind, obliterating the form, and hence mistakes in spelling and such like are quite overlooked in the rapid reading. With this child it seems probable that visual images play an important part in the development of his wonderful memory; but one must not forget also the part played by muscular sensations arising from the emission of words. Music and arithmetic interest him not. He cannot distinguish differences of pitch in various notes, and has no notion of addition or subtraction. He cannot write, and is apparently not anxious to learn to do so.

Professor Stumpf looks upon his memory as not purely mechanical, but depending on a decided co-operation of the intellect. In

common with Placzek and other savants who have studied his case, he believes that the child is highly intelligent and morally healthy.

The Action of the Thyroid Gland on Growth and Obesity.—Dr. Bourneville (*Le Progrès Médical*, February 1st, 1896) gives the notes of six cases of idiocy (three of which were cretins) treated with thyroid extract, especially in relation to the effect on growth and obesity. The emaciation and increase in height observed in the three cretins led to its trial on three dwarfs, with the same results, except in the case of one patient, aged 28 years, where no alteration in height occurred and his weight increased. Reference is made by Dr. Bourneville to similar observations made recently by Dr. E. Hertoghe, of Antwerp. Comparing the increase in height of his cases while under treatment (Dr. Hertoghe deals especially with cretins) with the increase which takes place normally in ordinary idiots, the difference is most marked.

With regard to emaciation, it is noticeable that after a certain time patients cease to lose weight even while under treatment, and weight is regained when the treatment is suspended; hence the necessity of resuming it after a temporary rest.

Finally, in six cases of retarded growth (not cretins) observed by Dr. Hertoghe, and said to be due to chronic albuminuria (two cases), to rickets (two), to early menstruation (one), and to congenital debility (one), the same increase in height is noticed while the patients were taking thyroid gland.

The Function of the Lenticular Nucleus.—Drs. Tonnel and Raviart publish a very interesting case of softening, limited to the internal segment of the right lenticular nucleus, which seems to throw a good deal of light on the function of the lenticular nucleus (*L'Écho Médical du Nord*, 1897, No. 12).

F—, aged 45, was under observation from 1890 to 1897, and successively developed marked motor and mental symptoms culminating in the following:—sensory troubles on the right side, labio-glosso-laryngeal palsy, flaccid paralysis, more and more marked in the lower limbs, progressive paresis of upper limbs passing on to absolute paralysis on the right side, and progressive mental impairment ending in “mental confusion” or stupor. The autopsy revealed an area of softening localised to the internal segment of the right lenticular nucleus, without involvement of the internal capsule.

The authors, reviewing the literature of cases bearing on this, compare notes, and suggest that the important function of the lenticular nucleus is as a superior reflex centre, the action of which is more marked according as the will intervenes less—intermediary, therefore, between the reflex function of the medulla and the volition of the intellectual zones of Flechsig.

Their general conclusions are that the lenticular nucleus is before all—(1) a channel of passage for certain cortical motor

fibres; (2) the site of origin of descending cylindraxils, condensed in one fasciculus in the internal segment, spread in a fan through the middle segment and the external segment, where are situated their cells of origin; (3) the point of destination of sensory fibres. Physiologically its function is especially that of a centre of co-ordinate movements, the execution of which is determined by peripheral stimuli, or as a result of a voluntary stimulus originating in a projection-sphere (cortical); on the other hand, from a psychical point of view some importance must be attached to the lenticular nucleus.

Hypnotic Suggestion.—In *Revue de Psychiatrie* (1897, Nos. 6 and 7) Professor Joffroy, à propos of the treatment of a case of infantile hysteria, makes some very interesting remarks concerning hypnotic suggestion. In view of the fact that this treatment has been especially advocated by French physicians, it is particularly important to hear the opinion of so good an authority as Professor Joffroy. Suggestion, as we know, may take place during hypnotic sleep and in the waking state; shall we try the former? Such is not his advice, as therapeutic hypnotism is susceptible of serious drawbacks, of which several are emphasised. We may not succeed in hypnotising patients; or after perseverance we may succeed, but only aggravate the hysterical symptoms. "Beware of patients who are difficult to hypnotise; better a thousand times leave them alone." On the other hand, your patient may be easily hypnotised; but this does not mean that suggestions, especially therapeutic suggestions, will be carried out. Again, there are some patients whom you easily send to sleep; you thereupon make suggestions, but hours and hours pass before you succeed in waking them from their lethargy. Others (and the case of a morphinomaniac in point is mentioned by Joffroy) after one or more attempts at hypnotism develop a mania for being hypnotised; every one hypnotises them; it suffices to look at them fixedly for a moment, and they "drop off;" life becomes unbearable.

Professor Joffroy's advice is, therefore, to try hypnotism only in those cases which are serious, and in which there is, so to speak, nothing to lose. Here hypnotic suggestion may give marvellous results, as in a case of his own, a patient suffering with hysterical arthralgia with severe pains, inability to do anything, and in whom arthrotomy had been proposed. Suggestion during the waking state and during hypnotic sleep brought about a complete cure in one "séance."

Suggestions during the waking state, which of course are daily made by all practitioners consciously or unconsciously, are on quite a different footing, and are often most beneficial.

While hypnotic suggestion may be exceptionally advisable in hysterical cases, Joffroy looks upon as an absolute contra-indication the fact that a patient is suffering from non-hysterical manifesta-

tions; for it is not efficacious, he says, especially in epilepsy and in the various forms of insanity.

In conclusion, "the indications for hypnotism may be resumed in one word: very serious and very tenacious form of hysteria, where the condition of affairs is so deplorable that we have nothing to lose, but on the other hand we may stand to win everything."

"Such is my way of thinking on this important question; it is in accordance with the teaching of Charcot and of most of his pupils; and especially with that of Professor Pitres."

Therapeutics of Suggestion and Auto-suggestion.—After the opinion expressed by Professor Joffroy it is of interest to read what Dr. Dumontpallier, member of the Académie de Médecine of Paris, says on the subject of suggestion. In *Revue de l'Hypnotisme* (1896, No. 4) Dr. Dumontpallier relates the case of a lady aged 37 years, who suffered for some months after childbirth of paresis of the lower limbs, with gastric troubles and obstinate constipation, and applied to him for relief because he had cured a friend of hers of paraplegia which had lasted several years. On examination no stigmata of hysteria were found, but decided evidence of neurasthenia. Incidentally the patient remarked that she often felt a tendency to sleep when she fixed a brilliant object.

The patient was told that she would be able to go down the stairs of her house the next day, would drive to the doctor's house and ascend the three flights of stairs leading to his consulting-room; and it so happened. Hypnotic sleep was induced by fixation of a brilliant object and suggestions made. The next day there was marked improvement in all her symptoms, and in three weeks she was practically well.

In cases of this kind, which depend upon a psychical cause for their origin, this treatment is strongly advocated. "Who shall decide when doctors disagree?"

The Description of a Cigarette.—Among other experiments made by A. Binet, in order to study the higher intellectual faculties, an interesting one is detailed in the *Revue de Psychiatrie* (1897, No. 9).

Three different groups of individuals were selected as subjects of the experiment: (a) seven old boys of an elementary school (aged 13—20 years); (β) five pupils of a class of elementary mathematics; (γ) six pupils and assistants in the laboratory of psychology (aged 30—35 years). The experiment was as follows:—A pen and paper were given to each, and they were seated before an object which they were asked to describe. "A small object, such as a pen-holder, a knife, &c., will be placed before you, and remain before your eyes. You understand, you are not asked to draw it, but only to give a description of it in words. Here is the object." This object was a cigarette. Five minutes was the time allotted for the task, but in a few cases, where the number of lines of description was deemed insufficient, the time was prolonged by a few minutes.

A number of characteristic descriptions are given, and from the general tendency exhibited, or the intellectual direction of the subject shown in his description, Binet arranges them into types :

1. *Descriptive or Graphic Type*.—Minute and dry observations, without reasoning or conjecture, without imagination or emotionalism.

2. *Observant Type*.—Observations and tendency to judge, to conjecture, to interpret what is perceived. This mental type has already been commented upon by Miss Bryant.

3. *Érudite Type*.—Memory and erudition exemplified. The subject mentions what he knows, what he has learnt concerning cigarettes in general. The result is quite impersonal, and borders on the common, the stereotyped.

4. *Imaginative and Poetical Type*.—This is a more complex type, and would perhaps bear subdivision. It illustrates a neglect of observation, the predominance of the imagination, of personal recollections, of emotionalism. Bad taste and bathos may be found in this type.

Without laying much stress on his results, or endeavouring to draw definite conclusions from this and other similar experiments, Binet concludes that from the experimental study of the higher intellectual faculties we may observe the existence of four or five definite mental types—the descriptive, the observant, the erudite, the emotional, and the idealistic.

Obsession of Blushing (Ereuthophobia).—Drs. A. Pitres and E. Régis (*Archives de Neurologie*, 1897, No. 13) distinguish three kinds or degrees of morbid blushing, as regards the moral effect produced by the blushing. (a) Simple ereuthosis, including individuals who present an extreme readiness to blush, but are not concerned, or only momentarily troubled, on this account. (b) Emotional ereuthosis. In this class we find subjects who, besides blushing readily on the slightest provocation, are concerned about it, and evince a desire to be rid of this weakness. This anxiety does not, however, amount to an obsession. Cases are given to illustrate this group. (c) Obsessive ereuthosis or ereuthophobia. Here we are dealing with cases in whom the mental preoccupation on account of the blushing constitutes a true obsession—a painful and tenacious phobia. Nine cases have been observed by Pitres and Régis during recent years, and from an analysis of them they are able to define the principal characteristics of this obsession. All the cases but one were men of a neurotic type. The attacks of blushing appeared in all under very similar conditions, and were similarly influenced (by weather, observation, &c.). During the interval between the paroxysms there is a constant dread of blushing, a constant self-analysis to explain this peculiarity. In order to conceal their weakness patients resort to all kinds of devices; some take to alcohol. Full notes of two cases are given.

Psychologically this obsession seems to offer a favourable field for

the study of the relations between fixed ideas and emotions, and of the nature of the emotion. From the recent investigations of Lange, Ribot, &c., we are prepared to believe that the rôle of the emotion in certain psychopathic states is much more important than has been hitherto held; and although the attention of our two authors was not directed especially to the condition of the vaso-motor reflexes of their patients at the time they were under observation, nor to some other points of interest in this connection, they nevertheless draw attention to certain deductions from these cases which are of great psychological importance.

(1) The order of succession in the phenomena observed in cases of morbid blushing is invariably the following:—(α) An excessive tendency to blush, followed by (β) a feeling of confusion coming on at a later date, and then (γ) a fixed idea, which comes as a complication. That is, (α) a vaso-motor phenomenon; (β) an emotional phenomenon; (γ) an intellectual phenomenon. If, on the other hand, we consider the disease from the point of view of the increasing *gravity* of its various forms, we notice the same dissociation of the three elements, and in the same order.

(1) In simple ereuthosis—an excessive tendency to blush (innate or acquired) without morbid emotion and without fixed idea—the disease is reduced to the vaso-motor element.

(2) Emotional ereuthosis is a tendency to blush with morbid emotion and without fixed idea; *i.e.* the disease with its two elements, vaso-motor and affective.

(3) Ereuthophobia—tendency to blush with morbid emotion and with fixed idea; *i.e.* the disease complete with its three elements, vaso-motor, affective, intellectual.

One fact, however, seems to militate against the priority and the absolute preponderance of the affective element in ereuthophobia: it is that the blushing attacks are generally brought about by the idea of blushing, according to the almost invariable testimony of the patients; *i.e.* the intellectual element precedes the emotion. This, however, as the authors show, is probably only a hasty conclusion drawn from a superficial analysis of the facts.

A study of the influence of atmospheric conditions on the attacks of blushing, a careful examination of the phenomena which occur when attacks are suddenly brought about, &c., lead to the conclusion that the idea is not the precursor of the emotional crisis.

The authors' final words on this subject are, "We believe that we are justified in saying that in the obsession of blushing, as in many other phobias doubtlessly, the fundamental and constant phenomenon is the emotion."

Loss of Consciousness in Hysterical Attacks.—After referring to a widely spread notion that consciousness is never lost in hysterical attacks, Dr. A. Pitres, in a small monograph ("De la perte de connaissance dans les attaques d'hystérie;" Paris, Masson et Cie., éditeurs), gives the results of his researches into the mental state

of patients during hysterical paroxysms. At the outset he lays stress on the importance of distinguishing, in what is called vaguely loss of consciousness, or "losing the senses," phenomena of consciousness and phenomena of memory; and on the necessity of studying the state of the consciousness and of the memory in each of the three periods or phases of a regular hysterical attack, as well as in each form of irregular or incomplete attack.

The laws which preside over the retention or the loss of consciousness in hysterical attacks are found to be complex, but Dr. Pitres believes that they may be summed up in the following propositions:

1. In the pre-convulsive stage of complete and regular hysterical attacks, and in incomplete attacks solely characterised by phenomena which habitually belong to this stage (attacks of sobbing, spasms, pandiculation, &c.), consciousness and memory are entirely preserved.

2. In the convulsive stage of regular attacks, and in the incomplete attacks constituted by tonic and clonic convulsions of the epileptoid type, consciousness and memory are totally abolished. In incomplete or irregular attacks where *clonic* convulsions appear at the outset, patients may retain enough intellectual lucidity to be able to notice what goes on around them, and to answer questions put to them. But, in spite of this apparent persistence of consciousness, they are not able to realise that they are convulsed, and do not remember, when the attack is over, that they have had spasmodic, involuntary movements.

3. In the post-convulsive stage of regular attacks, and in attacks solely represented by hypnotic phenomena (attacks of sleep, of catalepsy, of lethargy, of delusions, &c.), consciousness and memory behave exactly as in cases in which these phenomena do not represent attacks or stages of hysteria; that is to say, that with the exception of a few rare varieties (deep lethargy, acute maniacal delirium, &c.) consciousness is preserved during the hypnotic stage; and the memory of what has occurred, though abolished in the normal state (awakening), is susceptible of being revived completely in subsequent hypnotic states, either spontaneous or induced,

On the Pathogeny of Joint-troubles and Spontaneous Fractures of Bones in Locomotor Ataxy.—In *Archives cliniques de Bordeaux* (1896, No. 11) Drs. Pitres and G. Carrière give a detailed account of the history and post-mortem examination of a patient suffering from locomotor ataxy, which bears upon the pathogeny of the joint and bone affections in this disease. Two theories have been suggested to explain these affections: one refers the trophic lesions of bones and articulations to an atrophy of the cells in the anterior horns of the spinal cord; the second refers them to inflammatory or degenerative lesions of peripheral nerves.

Pitres and Carrière's case is that of a man aged 58 years, with a

history of alcoholism and sexual excess. At the age of twenty-six he had his first gastric crisis; at the age of twenty-eight, soft chancres, scabies, and a second gastric crisis; at thirty, anæsthesia of the big toe, numbness in left foot, lightning pains; at thirty-three, inco-ordination of legs, shedding of big toe-nails; at thirty-five, confirmed ataxy, troubles in micturition; at thirty-eight, spontaneous fracture of the tenth right rib; at forty-two, arthropathy of the left knee ("Charcot's joint").

Between 1881 and 1895, progressive aggravation of symptoms.

Death on July 10th, 1895, in a condition of marasmus, after a severe and prolonged gastric crisis.

At the autopsy, and as a result of careful histological examination, were found: systematic sclerosis of posterior columns along the whole length of the cord; normal appearance of cells in the anterior cornua, and of antero-lateral columns; advanced atrophy of posterior nerve-roots; diffuse lesions of ulnar nerves, intercostal nerves, and nerves of lower limbs, more marked than elsewhere in the filaments distributed to the left knee-joint (the seat of arthropathy), and in those of the tenth intercostal nerve on the right side (corresponding to the broken rib). Anterior nerve-roots normal.

The description of the nervous filaments supplying the articulation of the left knee, for instance, is: "only a few fibres are to be seen here and there with a recognisable myelin sheath. The nerve-fibres are for the most part reduced to empty sheaths, or to sheaths containing here and there fusiform masses of granular protoplasm."

Reviewing the literature of the subject, our authors find that in four cases, more or less convincing, alterations in the anterior cornua of the spinal cord are described in locomotor ataxy, against seventeen cases in which microscopic examination has failed to reveal any appreciable alteration in the anterior cornua.

In favour of the neuritic theory of arthropathies, they find eleven observations detailing the results of careful examination of the nerves supplying the diseased articulations, in each of which these nerves have been found more or less diseased (references given). In only two cases, concerning which scant information has been supplied, these alterations have not been found. So that the authors conclude that tabetic arthropathy in all probability depends upon alterations in the nerves supplying the articulations involved.

As regards the causation of the bone affections in locomotor ataxy, we have up to the present but limited contributions to the study of the subject. Only five published cases bear on this point. In three, including the case of Pitres and Carrière, there are positive indications that these fractures are due to disease of nerves supplying the bones. In two cases no mention is made of the condition of the nerves particularly in question; but in one of these it is definitely stated that the anterior cornua were healthy. Here also, therefore, the evidence so far is more strongly in favour of the neuritic theory than the myelopathic.

THE PROGRESS OF PSYCHIATRY IN 1897.
AMERICA.

By Dr. H. M. Bannister.

The statement made a year ago in reference to the condition and progress of American psychiatry is equally applicable at the present time; there have been no startling novelties or events, but there have also been no backward steps, at least as regards the country as a whole, in which it may be said there has been a continuous though gradual advance. There have been, it is true, the expected political changes, but many of these were for the better; while some, it may be, have been for the worse. It is a great misfortune that politicians in some parts of this country still consider public charities as political spoils, in so far as the emoluments of their administration are concerned, and that some of them have disgraced themselves by introducing the spoil system where it had not previously existed, and thus have demoralised the public service in these institutions. The past year, though it followed one of the most exciting political campaigns in our history, has not been especially notable in this respect, and there have been signs of improvement even in quarters where it was hardly expected. It may not be in the immediate future, but the time will certainly come, and that before many years, when this at present the greatest hindrance to progress in American hospitals for the insane will be a thing of the past in every part of our country.

A year ago I referred to the increasing interest in pathological work as evidenced by the founding of laboratories for this purpose in different parts of the country. This interest has not decreased, but is extending, and one of its latest manifestations is the inauguration of a plan, much like that already adopted in New York, in the State of Michigan. This commonwealth possesses in connection with its State university one of the best equipped and most efficient physiological and pathological laboratories in the United States, and the proposition is to utilise its advantages, each of the state hospitals contributing its portion to the salary of the specialist who will do their work. The plan has the advantage of economy, as the cost to each institution is small, and there will be no fitting up of quarters or expensive apparatus to procure; and it has the still further advantage of the best surroundings and atmosphere of scientific research, which, it must be confessed, are not always so well insured in all hospitals for the insane. It is quite possible that some former attempts at pathological work in asylums have been ineffective for this very reason; the workers were not sufficiently in touch with what had been or was being done elsewhere, however well equipped with appliances or skilled in microscopic technique they may have been. There

will be no deficiencies in these regards in the New York State Laboratory or the University of Michigan. There is still another advantage in having the pathological work for all the institutions done under critical supervision at one central point, and this is not an unimportant one; it makes possible a comparison of the methods of clinical study in each separate institution, and ought to stimulate a healthy competition in this respect. Pathological findings are of comparatively little value except as interpreting clinical observations; and, as an eminent naturalist has remarked, it is just as scientific to make observations with our unaided but educated and properly guided senses as it is to observe through a tube furnished with lenses. To many, however, and to some who ought to know better, there is a sort of impressiveness about the brass and glass and general paraphernalia of microscopic work that gives it a sort of factitious importance as compared with other less showy but not less really scientific work in a hospital for the insane.

That there is an increasing interest in clinical studies of the insane is shown by the efforts constantly made to assimilate the treatment of acute cases, at least to general hospital methods. In this connection also may be mentioned the psychological laboratories at Waverley and Kankakee, the latter in charge of Professor W. A. Krohn, late of the State University of Illinois. It has as yet published no results of its operations, but there is no reason why whatever is possible in the way of good work in this special department should not be done. Kankakee, with over 2000 patients, and affording every type of mental aberration, ought to furnish an especially favourable field for the study of pathological psychology by modern objective methods.

It is probably well known to European alienists that the population of American asylums includes a large proportion of non-native inmates; but few, it is likely, realise the extent of the burden thus imposed upon our charities. The State of Massachusetts alone is stated to have deported to their native countries 520 alien insane and paupers at its expense last year,—this, of course, not including naturalised foreign-born who had gained a residence, or those turned back by the United States immigration inspectors. While the great mass of the foreign-born inmates of our institutions—and these form in some sections nearly or quite 50 per cent. of the whole—are legitimately there, having broken down mentally after they had gained a residence, there is in nearly every large asylum a number who are known or strongly suspected to have been assisted emigrants, and in many cases asylum inmates before coming to this country. I have personally known three cases of this character from a single limited district in a European state in one asylum. This condition of affairs has led to legislation in the State legislatures, and is one of the motives, it may be, of the stricter immigration laws now pending in the National Congress. Probably the seaboard States suffer most, and in this connection an inquiry into

the relative degeneracy of the younger class of criminals in New York and Illinois, by Dr. E. S. Talbot, is of interest. The paper was offered at the last meeting of the American Medical Association, and was based on a series of observations and measurements of the inmates of the State Reformatories at Elmira and Pontiac respectively. The proportion of foreign-born in these two reformatories was about the same in both, and the figures of Irish and German nationalities were large. The statistics brought out the rather striking fact that while all or nearly all the inmates examined were physical degenerates as compared with the average population, those of the eastern institutions were decidedly more markedly such than those of the Illinois Reformatory, and that this difference was as pronounced in the different nationalities as in the inmates taken as a whole. Dr. Talbot endeavours to account for this by the fact that New York has for a long time maintained institutions for defective immigrants, and that these have had a tendency to concentrate this class within its limits. The inferiority, however, existed in the native-born as well, and to make this reason apply to them we have to assume that practically all the native offenders of this class must at least have had recent ancestors of foreign birth. This is probably hardly true of such a proportion as would be required, and it seems probable that other reasons, as yet not given, must exist. The fact, however, is an interesting one, and goes to show how, besides its native product, the country is overloaded with alien defectives. While the writer was connected with one of the large State hospitals of Illinois, the one county in its district that was almost exclusively populated with the original Anglo-American stock never kept its quota over half filled; while the others, similarly situated but with a large foreign element, were always demanding space.

It is not altogether pleasant to anticipate the founding of new Jukes families, or such as that recently described by Kierman, the record of which, according to the *Lancet*, exceeded Zola's most daring imagination, and which was the outcome of one or two defective immigrant importations. That we have survived them in the past is, perhaps, a comfortable assurance for the future; but, as shown in the Jukes family, they are expensive and inconvenient.

The care of the chronic insane is a subject that is always to the fore in the older States of the Union. Within the past three or four years Massachusetts and Pennsylvania have built asylums for this class, and one has been started in Illinois; but this last, according to recent reports, is not likely to be available for use for some time on account of defects in construction, &c. The Wisconsin system of so-called county asylums is claimed by its advocates to best meet the needs, but it is hardly an ideal plan, though inexpensive, and an improvement on the almshouses it supplanted. According to the Hon. Clarence Snyder, Special Agent for the

Inspection of Charitable, &c., Institutions, Wisconsin supports in these establishments nearly 3000 chronic lunatics, at a cost of about \$88 a year apiece. New York adopts the plan of State care for all, and has about 20,000 inmates in her hospitals for the insane. The boarding-out plan has been tried to a limited extent in Massachusetts, apparently without striking success thus far. Dr. Moulton's reply to Sir Arthur Mitchell's criticisms of the Report of the Massachusetts Commissioners states, I think, some of the difficulties in carrying out this method in this country fairly, and, as the statement of one acquainted with the ground, is worthy of credence. He might, however, have said more and made his case still stronger. Until the country has become much older, and has a larger settled rural population of a certain social class than it now possesses, it is doubtful whether the boarding-out plan will be anywhere general or remarkably successful.

The after-care of the insane is another subject that is exciting attention, and has been taken up the past year not only by the Medico-Psychological Association, but also by the American Neurological Association, which includes in its membership a number of alienists as well as neurologists. At its last meeting this body received a report of a committee appointed to consider the subject, which included recommendations that the Association take further active measures to aid in the foundation of organisations for assistance of the convalescent insane. As a preliminary, however, it was held that there should be a more universal recognition of the necessity of separate hospital treatment of insanity in its acute and active stage, and special provision for the treatment of the acute insane in public hospitals before burdening the taxpayers with the cost of convalescent homes. This, of course, will not interfere with voluntary endeavours in this direction, and it is not understood that they were discouraged or not advocated by the recommendations, whether the hospital reform is or is not immediately achieved.

Two events of psychiatric interest during the past year were the transfer of the *Journal of Insanity*, the organ of the Medico-Psychological Association, to Baltimore, where it is now issued from the scholarly precincts of the Johns Hopkins Press. It has been completely changed in appearance, and otherwise improved. The other event is the publication of Dr. Kellogg's book on *Mental Diseases*, which is the most extensive work of its kind that has as yet appeared as a native product in this country, and as America has not been very prolific in psychiatric text-books its publication is the more noteworthy. It is to be hoped it will meet with deserved success.

FRANCE.

By René Semelaigne.

Diagnosis of General Paralysis.—At the Congress of French alienists held in Toulouse last August, Arnaud of Vanves presented an interesting report on the diagnosis of general paralysis. According to him there is no pathognomonic sign of this disease; the diagnosis must be grounded on an union of physical and psychical symptoms, *i. e.* on the one side generalised and progressive dementia, on another disorders of speech, oculo-motor symptoms, psycho-motor ataxy, and cerebral disorders. General paralysis is most uncommon after fifty-five. Arterio-sclerosis might assume the clinical aspect of this disease, or be associated with and modify its features. If one finds a genuine hemiplegia, the diagnosis of general paralysis is doubtful; or if the patient is an habitual drunkard, if the disease is consecutive on an infection or intoxication, and above all if the evolution has been rapid, it is necessary to wait, and to study the progress of the disorder before asserting a final diagnosis.

Ætiology of General Paralysis.—According to Christian of Charenton there is no proof that the origin of general paralysis is syphilitic. In some countries where syphilis is very common, as among the Arabs of Algeria, general paralysis is almost unknown. Even if a general paralytic is syphilitic, it is not thereby certain that syphilis is the cause. Besides, specific treatment is of no value.

Carrier and Carle of Lyons report two cases of general paralysis in females. The first patient, affected by hereditary syphilis, presented the symptoms of general paralysis at the age of eighteen, and the disease rapidly progressed. The second showed, during the evolution of an evident cerebral syphilis (pronounced cephalalgia, spasmodic hemiplegia, and dissociated paralysis of the ocular muscles), the genuine symptoms of general paralysis at the age of forty-two.

Régis of Bordeaux considers general paralysis as a post-infectious disease, generally following syphilis, and sometimes but not so often acute illness. Besides the general paralysis, he admits that the alterations of cerebral syphilis could produce symptoms nearly the same; it is a syphilitica pseudo-paralysis.

According to Paul Garnier of Paris, syphilis only prepares a favourable soil for general paralysis; alcoholism does the same. To produce the genuine disease, some other cause must intervene, such as surmerage, venereal excesses, &c.

Petrucci of Angers thinks that we must interrogate pathological anatomy to interpret clinical facts. He recognises (1) a poisonous origin, such as alcoholism, syphilis, saturnism, infectious states; (2) disorders of the white substance or of the nervous filaments,

with primitive and predominant phenomena of ophthalmoplegia; (3) primary disorders of the grey substance, the patient presenting a peculiar aspect of dementia, but without delirious concepts; (4) commencing in pathological alterations of membranes of the brain, such as thickening, blood-coloured or lactescent suffusions, neo-membranes, &c.

Mariet and Vires of Montpellier noted in 174 cases of general paralysis that the causes capable of being quoted separate into two groups. First group: tuberculous heredity, mental and nervous heredity, acute infections, excesses of every kind, traumatism, moral causes. Second group: cerebral heredity, arthritic heredity, alcoholic heredity, personal alcoholism. The causes of the first group, even when associated together, exceptionally tend to general paralysis, and they must be associated with some of the causes of the second group, which are the special and genuine causes of general paralysis. According to Mariet and Vires, syphilis does not determine true general paralysis. The true causes act either by creating the disease or by preparing a favourable soil for the growth of the causes of the first group, which in another case become predominant. Accordingly general paralysis is not the result of one, but of multiple causes. Arthritic heredity acts by determining an anticipated senility, *i. e.* degeneration and inflammation of the tissues. Cerebral heredity determines on one part a tendency to diffuse inflammation of the vascular system of nervous centres, or on the other part a less organic resistance of the nervous cells. Alcoholic heredity and personal alcoholism act either as arthritic heredity or as cerebral heredity. So the excesses of every kind—the overstrain of the brain, the infections, &c.—consume the cells and congest the nervous system. Accordingly one finds degeneration everywhere.

Obsession and Imperative Ideas.—According to Pitres and Régis of Bordeaux, emotion is the fundamental element of the states of obsession.

Vallon of Villejuif, and Marie of Dun-sur-Auron, think the obsessions are excitations not reaching the totality of the nervous centres, but partially irradiating to a limited place. The secondary disorders so provoked are more or less intense as irradiation is limited to such or such determined place. Intensity and limitation of disorders produce an automatism more or less imperious and anxious. The authors divide obsessions into emotional, hallucinatory, impulsive, intellectual, with possibility of various combinations.

Self-accusing Persecution.—Vallon reports the case of a girl of twenty-one who confessed to having been guilty of concealment of pregnancy and murder. She furnished exact particulars of hiding the infant's body in the ground, &c. On the legal investigation no dead body could be discovered. Doubts arose, and inquiry proved that the letter of confession had been written by the alleged

criminal who, during a period of eight years, had been prosecuted and sentenced some ten times for robbery, injuries to policemen, begging, &c. Medical examination showed that the woman was nearly imbecile, and very dangerous. She was sent to an asylum.

On the Use of Serum in Nervous and Mental Diseases.—Mariet and Vires have used either the serum of an insane person on the point of recovery, with which they inject a patient affected with the same variety of mental disorder; or artificial serum, which they inject pure or mixed with a medical substance; or pure serum taken from rabbit's or dog's blood. Serum of human blood seems to have produced a slight and short acalmie. Injections of artificial serum were of no appreciable value. The pure animal serums seem more useful for the depressed forms of mental disease. The use of these was followed by a notable physical improvement.

BELGIUM.

By Dr. Jules Morel.

Psychological Methods for the Examination of the Insane.—Dr. Sommer, Professor of Psychiatry in Giessen, desires the adoption of rational methods for the examination of the insane, and in order to obtain these results he tries to determine the knowledge of the patient by means that allow of the measurement and analysis of some of the phenomena. For instance, perception of sight is reproduced and analysed by optical, photographic, stereoscopic, and cinematographic processes. The motor senses, *e. g.* the reflexes, may be fixed and measured by appropriate apparatus, and the same may be done for voice production by means of the phonograph. Next to these elementary, motor, and vocal acts, it is also very important to take notice of and fix in a durable manner the nature of the psychical processes of the patient, for the sake of diagnosis and prognosis. The usual subjective method is replaced by a more exact one, in order to determine the exact measurement of certain phenomena of mental diseases, and to explore the reactions of a patient always subjected to the same stimulus—in other words, psycho-physical reaction. The old descriptions of these diseases are subject to so many variations that they need to be scientifically developed by physiological factors, *e. g.*—

1. The competency of the patient to solve the four elementary rules of arithmetic.
2. His competency to solve various problems.
3. The time taken for their solution, *i. e.* the duration of the psycho-physical reaction.
4. By noting down the concomitant phenomena which allow us to draw conclusions as to the mode of the psychical process.

In accordance with this scheme Sommer made a series of investigations, and in comparing the results he discussed certain important indications for diagnosis.

1. Normal type. An attendant examined for six minutes made three mistakes in the easy exercises (multiplication), while the more difficult exercises (subtraction and division) were done easily. The psychical capacity, therefore, increases with the effort required.

2. An imbecile acquainted only with the most simple processes. In arithmetic she could only multiply by ten. She could do nothing else. Her multiplication does not seem to be a real ciphering, but rather a repetition of words learnt by heart.

3. Imbecile of a medium degree, with very marked lapses of memory, required half an hour to answer the questions of the author's scheme, and in this time made twenty-six mistakes. She had no notion of division. Instead of dividing the numbers she added them.

4. Epileptic, well educated, has had epilepsy since her twelfth year, with occasional epileptic mania. The patient answered in a well-defined automatic way all the questions by the word "nine." Consequently there is a loss of the faculty of ciphering, with automatic phenomena.

5. Epileptic with intermittent mania. There are periodical oscillations in the faculty of ciphering. At the first examination she calculated without a fault the exercises of multiplication, addition, and subtraction. The day following her ciphering knowledge greatly diminished for multiplication, the reaction time very long, and with false results; for addition the results false, and she did not answer the subtraction exercises. This examination was made thirteen hours after an epileptic fit. In a third trial ciphering was possible again, the patient could sum up everything asked; the answers in multiplication were incomplete.

6. This case resembles the foregoing one. The first examination in multiplication showed a loss of every notion of ciphering. The patient repeated some answers automatically. For the first question the word "three" is repeated at different times, then the word "once." The other questions were answered either by repeating the whole question, or by repeating the last word, *e.g.* "Three multiplied by ten?" Answer, "Three multiplied by is five." "Four multiplied by six?" Answer, "Is six." Four days afterwards the patient could solve certain sums in multiplication, and even in addition. In the third trial, made the day following, the patient showed phenomena of total automatism, *e.g.* "Two multiplied by four?" Answer, "Is four." "Two multiplied by six?" Answer, "Is six." In a fourth experiment the patient seemed more lucid, but made mistakes after a few questions, consequently showing periodical oscillations, combined with automatic phenomena—an important combination for the differential diagnosis of epilepsy.

By the foregoing processes we can study a given function, namely ciphering, and by a comparison of the results a series of important postulates can be made. The scheme permits of the solution of the following questions:—1. Has the patient received education at school? 2. Is he suffering from congenital imbecility? 3. Does he exhibit slowness of mentalisation in the course of psychical processes? 4. Do symptoms or phenomena of automatism exist? 5. Is the disease continuous, intermittent, or periodical?

Dr. Sommer has formulated many other schemes for the study of innervation, the processes of association, the faculty of orientation, &c., which may lead to the solution of doubtful points of psycho-pathology.

Du Patronage familial des Aliénés à Lierneux en 1897.—Dr. Deperon describes the new Walloon colony. It was inaugurated in 1884, and is managed in the same manner as that of Gheel, Lierneux, has a territory of 6325 hectares, with a population of 2500 inhabitants, and at the present time can receive 1000 patients. Dr. Deperon hopes that later on, when the buildings exist in a sufficient number, the colony will be enabled to receive 2000 patients. The number at the end of December was 419. There were several escapes, but, with the exception of eight, all were recovered in one or two days.

Official Classification of Mental Diseases.—Professor Francotte, after a close study of the classification of mental diseases, still maintains the classification of the International Congress of 1889 in Paris, with this difference, that he desires to add the “*Délire Généralisé*,” which is the “*Confusion Mentale*” of the French, the “*Verwirrtheit*” of the Germans, and the “*Amentia*” of Meynert. He prefers to substitute the term “*Paranoia*” for “*Folie Systematisée progressive*,” or “*Délire Chronique*” of Magnan. Next to Moral Insanity he places the “*Parapsychies*,” a new word given by Dornblutt to specify “*Déséquilibre Mentale*,” *i. e.* constitutional anomalies and eccentricities of all sorts; and “*Folie Dégénérative proprement dite*,” *i. e.* mental diseases specially characterised by phobias, either intellectual obsessions or impulses. I believe that in the future there will be no difficulty in admitting the “*Délire Généralisé*,” but I think that there is as yet no sufficient reason to separate neurasthenic insanity from the neurotic insanities (epilepsy and hysteria), many cases of hysterical insanity being similar to those mental troubles characterised by phobias, obsessions, &c. It is at present very difficult to settle the boundaries of this pathological form of insanity.

Abnormal Children and their Education.—Dr. John Demoor, Physician to the Special School for Education of Abnormal Children in Brussels, has written an excellent paper on this important question, in which he proves himself well acquainted with the views of Baldwin, Bourneville, Fernwald, Hammarberg, Perek,

Seguin, Shuttleworth, Sollier, Voisin, &c. He studies the relation between idiocy and its causes, and consequently its symptoms, and concludes, as Hammarberg has already demonstrated, that every idiot constitutes a special type. He shows the difference between the intellectual development of the normal child and that of the idiot, some of whose different sensations are growing and improving, whilst others are absent or rudimentary. Those differences have to be examined, registered and considered from a therapeutic point of view. The author also refers to the discoveries of Hammarberg, both macro- and microscopic, and to the work of Flechsig, and rightly comes to the conclusion that idiots should not be inmates of lunatic asylums, but of special schools, considering the brilliant results obtained in the special schools in England, the United States, Scandinavia, and France.

As regards treatment, he is of opinion that little can be done in the way of surgical treatment, but much may be expected of rational teaching. He reviews what has been attained by physical and intellectual education, and is of opinion that both should be combined with social education. He advises when to begin the education, states what results are to be obtained by the exercise of the different senses, and what may be expected after a certain number of years' work. Next to Sollier's work (*The Psychology of the Idiot*) that of Dr. J. Demoor deserves to be known by every one who takes the education of the idiot into consideration.

The Nursing of the Insane.—The question of attendants was again brought before the Société de Médecine Mentale, although the discussions have lasted since 1894, and the conclusions were approved of in other countries after one or two meetings. The necessity of teaching attendants being evident, we are still awaiting results; and we shall have to wait somewhat longer, as the greater number of the Belgian asylums belong to proprietors who, directly or indirectly, superintend their own institutions, while the physicians have no authority over the attendants, who are appointed by most of the proprietors without the advice of their physicians, who ignore the qualities of the attendants. Some of the principal proprietors have been informed of the necessity for instructing their attendants, but they will remain indifferent as long as they are not obliged to alter their way of nursing the insane. Dr. Maere, physician to one of the numerous asylums superintended by the Brothers of Charity, did not hesitate to say, "We have to deplore the instability of our attendants. It is useless to give professional teaching, for we should have to begin teaching again the day the attendants leave the asylum. We must try to avoid these frequent changes in the staff of the attendants." And Dr. Lentz added that at the present moment the difficulties were insurmountable.

Provision for the Insane in Belgium.—Dr. Peeters insists on the necessity for a better classification of the insane in Belgium. Some patients whose mental state is incompatible with the usual condi-

tions of the insane in Gheel are, notwithstanding, sent to that colony by superintendents of asylums, while others fit for the colony remain in the institution; and others again are sent direct, whether fit or not. Dr. Peeters makes comparison with what is more logically done in other countries, and especially in Scotland. Dr. Peeters would like to see the rules existing for Scotland adopted in Belgium, but I fear that he will not have his wish fulfilled for many years, although I agree with him.

Belgian Asylums and the Belgian Government.—One of the members of Parliament availed himself of the last official report to give his views concerning the situation of affairs, *i. e.* that the private asylums are far inferior to the public as regards scientific organisation and medical service, besides being superintended by incompetent men who are mercenarily inclined. Following the Belgian law the medical staff is appointed by Government, but as the proprietor may present his candidates, they are always appointed. Any doctor, whether he has studied mental disease or not, can become physician to a lunatic asylum. Moreover in most asylums, as the doctors are paid according to the number of patients, they are allowed to engage in private practice. The Minister of Justice pointed out that although some alienists are really working as alienists, many are quite indifferent to their asylums and to the progress of mental diseases. Dr. Lentz stated at a meeting of the Société de Médecine Mentale that six of the largest private asylums, containing the greatest number of lunatics in the country, had twelve physicians during thirty years, and not one of these had done any scientific work whatever, whilst the majority of the papers published in the *Bulletin* were contributed by doctors of public asylums. It was resolved in Parliament to adopt the conclusions arrived at last year at one of the meetings of the Société de Médecine Mentale:

1. For medical students a compulsory course of clinical psychiatric instruction in the four Belgian universities.
2. An increased rate of salaries in asylums, the salaries to be fixed and in proportion to the number of patients.
3. In large asylums the doctor should not be allowed to engage in general practice.
4. Inspection of all asylums by a board composed of alienists.

Special attention was also given to the education of idiots and the formation of classes for feeble-minded children.

The same questions were brought before the Senate by his Excellency M. Lejeune, Minister of State, ex-Minister of Justice. He also showed the necessity of appointing only competent alienists to the asylums, and warmly recommended the teaching of psychiatry in the universities.

Two Cases of Délire Généralisé (Verwirrtheit, Confusion Mentale).—In order to prove the necessity for introducing this morbid form of insanity into the actual classification of mental

diseases, Professor Francotte describes two cases. There is loss or diminution of the consciousness, consequently the patient has no notion of time, place, or persons. Ideation is more or less affected because of the absence of conscious attention. The speech is unconnected, mixed with nonsense, or actually incoherent, *i. e.* the words do not represent ideas. The patient being in a dreamy state, he may have delusions or hallucinations.

Reflexes in General Paralysis.—Regarding the comparative evolutions of the cremasteric, pharyngeal, and patellar affections of the reflexes in the same patient at the three periods of progressive paralysis, Dr. Marandon de Montyel in two different papers has described these troubles in progressive paralysis. He has found important modifications in one, two, or three reflexes. These modifications may be permanent or temporary. The conclusions of the author are numerous. From a practical point of view there is nothing to aid in the diagnosis or prognosis of the disease.

The Provision and Classification of the Insane in Foreign Countries.—Dr. Peeters describes what has been done concerning home treatment in Dalldorf since 1884, in Luchtpringe by Dr. Alt, in Bunzlau, near Breslau, in Dun-sur-Auran (France), in Russia, and in the State of Massachusetts. His paper is only a sketch of what has been accomplished. Many smaller colonies exist, and many are annexed to public asylums. However, the report of Dr. Peeters is sufficient to prove that much more can be done in nearly every country.

ITALY.

By Professor Bianchi.

Dr. Cesare Colucci has published an interesting work entitled *A Contribution to the Pathological Histology of the Nerve-cell in certain Mental Disorders* (from the Clinical Institute of Professor Bianchi). It contains the result of the examination of four cases of epileptic dementia, and of five cases of progressive paralysis. In order to exclude the doubt that certain alterations in the cells might be post-mortem changes, the author refers to certain researches made by him upon nerve tissue at various stages after death, from which it appears that such changes consist in a diffuse granular disintegration, especially of the elements of the second and fourth cortical layer. With Marchi's method these cadaveric changes are found to consist especially in the formation of large black droplets originating from nerve-fibres; or there is a diffuse black coloration of the whole cell body.

The author passes on to discuss the various methods of staining most suitable to the varied constitution of the cell, and to the nature of the change it presents. As regards hardening reagents, reference is made to alcohol, sublimate, picric acid, pyridin, chromic

acid, osmic acid, formaldehyde, formalin, &c.; and as regards stains, to the coloration methods of Nissl, Heidenhain, Delafield, Paladino, Golgi, &c. When it is feasible the author prefers direct coloration of the tissue by methylene blue or other aniline dyes. In connection with methods, he refers to his modification for neutralising balsams which are acid; this consists in the addition of neutral carbonate of soda or potash, the only carbonates which neutralise balsam and at the same time leave it soluble in xylol. The cell alterations upon which the author especially insists are the following:—(a) *The formation of yellow globules*, otherwise known as “pigmentary atrophy” and “fatty degeneration.” The yellow granules which result give various histo-chemical reactions, which do sometimes correspond to those which result in fatty degeneration. The cell protoplasm is principally involved, being generally invaded, and replaced by yellow granules; ultimately the nucleus is involved. In advanced stages there is fatty metamorphosis. But the chief characteristic of this form of degeneration is its limitation to distinct zones of the protoplasmic substance, which may be significant from the point of view of the function of the nervous elements. The products of degeneration are created and undergo disintegration *in situ*. (b) *Granular disintegration*. According to the various modes of dissolution of the fibrillar substance and of Nissl’s bodies (which the author regards as structures supplementary to the nerve-cells), many forms of disintegration are described, of which the significance varies. The peripheral bodies of Nissl present the greater resistance in chronic processes; they participate in the changes of the chromatic substance and of the fibrillæ in varying fashion. The participation of the nucleus in the degeneration is always of grave significance, it being the most resistant structure. (c) The changes in the *cell-processes* were investigated by the methods of Golgi and Nissl; the author considers these changes in their relation to those of the fibrillar substance of the cell protoplasm, and also from the standpoint of the different structure of the processes. He describes various alterations, such as transverse segmentation, irregular and bead-like swellings, &c. (d) An alteration of the nucleus, whereby a *homogeneous* appearance is produced. The author describes this change in degrees and forms more complex than those referred to by Sarrò; the nucleus is described as exhibiting curious forms. (e) *Simple atrophy* consists in partial or total diminution of the cell. (f) *Degenerative hypertrophy*, considered as affecting the prolongations of the cell or the cell protoplasm; it may be partial or total; Nissl’s bodies bear a prominent part in it. (g) *Necrosis*, a form attended by coagulation, is described as the most important. This may show itself from the first, or secondary to regressive processes already developed. Though the forms of necrosis are diverse, all are of an acute nature; all the cell constituents participate. The process would seem often to be dependent upon

vascular disorders. (h) The last chapter refers to *vacuolation*, which is described as due to various causes. Vacuolation is most marked in Nissl's bodies. Various general pathological conditions close this chapter.

Dr. R. Colella has made a study of *The Senile Psychoses*. He treats at the outset of senility and of the phenomena which characterise it, of intellectual longevity, of premature mental enfeeblement, of the frequent transition into dementia. The psychical and somatic symptoms are described in detail; the course, duration, with the mode of termination and treatment of the conditions described are given. A chapter is devoted to pathological anatomy, based in part on the author's own observations. He passes on to discuss senile dementia with *delirium*, which is described as a complication of simple dementia, there being superadded to the latter delirious ideas (delusions) of every description (hypochondriacal beliefs, ideas of persecution, ideas of exaltation, &c.). Such delusions may represent every form of mental disease, but differentiation is possible by the presence of special features to which the author draws attention. Sixteen clinical observations complete the study, illustrating the different morbid types of senile psychoses. The principal conclusions arrived at by the author are—(1) The successive destruction of the centres and of the cerebral association systems causes, between ideas and judgment, a loss of equilibrium favourable to the development of erroneous interpretations, which reflect themselves now upon the patient's physical state; now upon his surroundings, now upon his personality. (2) The delirious (delusional) state of senile dementia may simulate every form of mental disease. The delusions are always numerous, mobile, and fugacious. Hallucinations are frequent, especially those of hearing and vision. Agitation is especially nocturnal. Simple dementia remains, although the delusions may disappear. (3) Psychoses do not supervene in senility, except upon a suitable basis, which is commonly furnished by heredity.

Dr. A. di Luxenberger furnishes a contribution to the *Pathological Anatomy of Nervous Shock*, based upon observation of the changes produced in the central nervous system as a result of violent blows on the head in experimental animals. He establishes that the circumscribed lesions consecutive to injury of the nervous system are due to two factors—contusion from *contre-coup*, and to shock transmitted to the cerebro-spinal fluid. The alterations of the ganglion-cells, which are found beneath the seat of injury, or in the region corresponding to the *contre-coup*, are represented by a peculiar polarisation of the chromatic substance of the cells. The displacement of the cerebro-spinal fluid may induce laceration of the spinal cord, and at the site of greatest laceration even sclerotic areas may be found. The circulatory mechanism of the central nervous system frequently responds to the injury by ex-

hibiting dilation of capillaries and veins. When the injury is succeeded by a condition of cachexia the cell-changes may be very advanced, and resemble perfectly those found in grave cerebral processes, such as progressive paralysis.

G. Dotto and E. Pusatesi have published a work *Upon Changes in the Elements of the Cortex Cerebri Secondary to Intra-cerebral Hæmorrhagic Foci, and upon the Connection between the Island of Reil and the External Capsule in Man*. Their researches were carried out upon various zones of the cortex cerebri of a man aged 40, dead two months after the recurrence of cerebral hæmorrhage on the right side. There was a hæmorrhagic focus of the size of a large nut, involving the external capsule for a short portion of its extent, and a considerable part of the putamen, the globus pallidus, and the internal capsule. The staining methods employed were those of Golgi and Nissl, and safranin and thionin were also used. The changes met with, variable in extent and in degree in the different nervous elements, may be summed up as consisting in secondary atrophy of the cerebral cortex of the hemisphere involved. The presence of the like alterations in the elements of the cortex of the island of Reil led the authors to suppose that the latter had connections in man with the external capsule.

In a work by Dr. G. Angiolella, the results of the histological examination of the *Cerebral Cortex of a Criminal Paranoiac* are given. Various parts of the cortex were examined; the frontal, parietal, temporal, and occipital lobes. The author places in two categories the alterations met with. The first class comprises inflammatory phenomena (increase of connective tissue about the vessels, dilatation of perivascular lymph-spaces) and degenerative states (pigmentary change and vacuolation of the nervous cells, varicose atrophy of the nerve-fibres), due partly to old age, partly to dementia. In the second are placed anomalies which the author considers congenital, similar to those already found by Roncaroni in the cerebral cortex of criminals and epileptics. These anomalies consist in the total defect (*mancanza totale*) and atrophy of the deep granular layer, in the predominance of the large pyramidal cells throughout the cortex, and in the presence of nerve-cells in the white substance in a larger proportion than that met with in normal brains. They are in general more evident in the frontal and temporal lobes, less in the parietal, and still less in the occipital. The author agrees with Roncaroni in according to this structural anomaly (*sic*) of the cortex the significance of a degenerative stigma, in considering it as an indication of that general lack of equilibrium in development of the entire organism, and of the nervous system in particular, which is the basis of psychosomatic degeneration.

R. Tambroni and G. Obici, taking as their text observations made upon *Two Cases of Tumour of the Frontal Lobes*, discuss fully the various points upon which to form a diagnosis. They call

attention especially to a somatic symptom described by Bianchi, who found it constantly in his experiments upon the frontal lobes in dogs and apes, and also observed it in a case of tumour of these lobes which came under his care. This consists in mydriasis on the side opposite the lesion. To it the authors attach great value, together with the psychical and somatic symptoms (as, for instance, olfactory disturbances); it may be of much assistance in diagnosis in difficult cases. A point brought out by the authors is that it would not be unreasonable to refer the pupillary disturbances of general paralysis to lesions of the cortex of the frontal lobes when these disturbances are more particularly combined with psychical changes.

Dr. D. Lo Monaco has made a study of the *Physiology of the Optic Thalami*, experimenting on dogs. He divides into four stages, variable in duration, the course of the abnormal phenomena exhibited by animals subjected to extirpation of an optic thalamus. In the first traumatic and irritative effects mask those ascribable to the suspension of the function of the ablated parts. The second is the stage of restitution of the general state, the nutritional condition of the animal. However, there are to be observed on the side opposite the lesion transitory disturbances of vision (blindness) and deficiency of muscular force. There are besides disturbances of tactile sensibility and of sensibility to pain, which are not always localised solely on the side opposite the lesion. The third stage is characterised by a condition of complete well-being—as far as can be judged—of the animal; the most minute examination fails to reveal any alteration. In the fourth stage grave dystrophic phenomena present themselves, which become aggravated until death results.

The conception brought forward by Lombroso, and now generally accepted, of the analogy between criminals and epileptics has induced Dr. E. di Arcangelis to look for the *Stigmata of Epilepsy in Insane Criminals*. The basis of this study was constituted by 200 criminals affected by various psychopathies. The chief fact resulting from the anthropological and functional examination of these subjects is the presence of asymmetry, more commonly on the left side, which is also without doubt the most characteristic feature of the epileptic organisation. The author has, moreover, been able to establish that all the stigmata of epileptics are met with in insane criminals, not, however, with the frequency with which they occur in epileptics. From this point of view he divides the various stigmata into two great categories; in the one are grouped all the characteristics common to epileptics and to criminals, whilst in the other are placed those by which the latter are distinguished from the former.

M. L. Patrizii has made a study of the *Vascular Reflexes in the Limbs and Brain of Man*, availing himself of the plethysmographic method. His investigations were made upon two boys of about

thirteen years of age, when awake and asleep, and with various stimuli (sensitive, sensorial, or psychical). The results are summarised as follows :

(1) The vascular reflexes in man follow the fundamental laws of localisation and irradiation.

(2) The localised vascular reflex is accomplished in a less time than the radiate vascular reflex.

(3) The brain exercises an undoubted influence upon the reflex activity of the cord, even in respect to the reflex movements of blood-vessels.

(4) The time of the vascular reflex in the waking condition, and in response to sensory stimuli, is, for the arm, about three seconds, for the leg about five seconds.

(5) The vascular reflex of the brain for sensorial stimuli has a latency not less than that of the brachial reflex for the same stimulus.

(6) Sleep produces a great retardation in the period of duration of the vascular reflex, which diminishes as one passes from brain to arm, and is inappreciable in the vessels of the leg.

(7) The movement of blood in the brain in sleep, secondary to excitation is, without doubt, reflex.

(8) The vascular reflex in the limbs, secondary to sensorial and psychical stimuli, are accomplished more slowly than is the reflex from sensitive excitation.

(9) There is a period of vascular reaction for each sense stimulated.

(10) Certain sensorial excitations have a greater power of inducing vaso-motor reactions than others.

GERMANY.

By Dr. Bresler.

As in most other countries, our profession and our science does not advance without many struggles. We are engaged with a certain class of calumniators who are dazed by preconceived opinions, ignorance, and even hatred. While their misrepresentations are usually absurdly wrong, and may therefore be borne with patience, the beginning of last year brought forth a very serious question in parliament. One of the deputies, in sustaining a motion to the effect that the regulations regarding the admission of insane patients into asylums are insufficient, said that a number of cases had occurred showing that they had been relegated to inhuman treatment in asylums, by brutal and frivolous removal to these institutions. He also attacked the members of our specialty.

At the annual meeting of the German Alienists held in September, 1897, the following resolution was proposed by Dr. Jolly,

and unanimously carried by the members present: "That the association regrets to notice that in the session of Parliament held on 16th January, 1897, a criticism, not in accordance with fact, had been made on the conditions existing in German asylums, and that this criticism had remained uncontradicted on the part of the Government. The association formerly recommended, and again thinks it a duty to advise that the most important reform would be the establishment of independent boards directly subordinated to the Ministry, and presided over by an alienist."

In order to improve matters in lunatic asylums, and render such attacks impossible in the future, the association at the same meeting, recognising the necessity for efficient training of attendants, resolved to offer a prize of 500 marks for the best Handbook for Attendants. Unfortunately a motion for proper training of, and granting diplomas to attendants was not carried.

Dr. Hoppe reported on the treatment of the insane without seclusion and drugs. During the last three years, out of 400 male patients, seclusion was only used by him in six incurable cases, and he believes that under more favourable circumstances he could have dispensed with it in those six cases. Drugs he believes to be useless, and he further recommends that alcohol be removed from the diet of the patients, and lemonades, fruits, &c., be substituted, citing the example of English asylums, and especially in London, which in 1890 removed their private brewhouses. His views were upheld by the majority of the members.

Dr. Alt said it was now the general course in Germany to abolish the use of seclusion as far as possible, it being done away with altogether in some asylums.

There have been no acts of any importance referring to lunatics passed during the year now ended. Besides the seven smaller and local associations of alienists and that above mentioned, a new one was founded last year by Flechsig and Hitzig. It is entitled the Association of Alienists of Middle Germany (Saxony and Thuringia). Such societies certainly afford the best means for successfully combating the attacks of ignorance, and for improving the condition of the insane. This must be worked out by ourselves. We must purge the service of existing unsuitable methods. That cannot be done by those who rank themselves as our enemies.

During the past year Professors Schiller and Fisher have published a collection of treatises on pedagogical psychology and physiology in the form of a journal, which will apply the results of physiology of the brain, and of physiological psychology to schools and education.

Another similar journal, edited by Trüper, has been already noticed on page 357 of last volume of *Journal of Mental Science*.

In April, 1897, Dr. Konrad Alt (Uchtspringe) inaugurated *Die Irrenpflege*, a monthly journal for the use of attendants. It is full of general information, and has been largely used. Such a

journal is worthy of support. It is intended to promote the welfare of attendants by instruction, advice, and encouragement, and it specially deals with freedom of treatment in colonies and private care. As each craft has its own special journal, it is apparent that the attendants on the insane should find a periodical devoted to their best interests. I have now before me the first ten numbers, complete to this date, and there can be no doubt that the *Irrenpflege* has so far accomplished its intention as declared in the opening statement of the editor.

In mentioning that there is a proposal on the part of the provincial authorities to increase the salaries of asylum officials, I am at the end of this letter, for most of the important literary works have been already noticed in the *Journal of Mental Science*, with the exception of the "Atlas of the Brain," by C. Wernicke. It consists of a series of photographic plates of sections of the brain, which have been stained by Pal's modification of Weigert's method, and which are intended to demonstrate the normal anatomy and the pathology of the brain. This standard work is the result of much care and perseverance, and should commend itself to all those desirous of furthering their study in this direction.

In the region of research, Nissl, in an article in *Allg. Zeitschrift für Psychiatrie* entitled "The Hypothesis of the Specific Functions of the Nerve-cells, and Studies in the Anatomy and Histo-pathology of the Nerve-cells," gives the result of his experiments on the effect of toxins on the cortical nerve-cells of animals poisoned with lead, arsenic, phosphorus, silver, morphia, nicotine, trional, strychnine, toxins of tetanus, alcohol, and veratria. He used his own method of fixation and staining of sections, and found that the cells are altered in a determined specific manner by the action of the poison. His experiments have the value of a physiological reaction. He does not compare the pathological with the normal cell, but has introduced a new definition, "the equivalent figure," of the nerve-cell. This is the microscopic figure of the nerve-cell of an animal killed in a certain manner, which regularly takes place under certain conditions. These equivalent figures serve to control the figures of the poisoned cells. Explanatory tables and photographs accompany the paper.

The progress of clinical knowledge has not kept pace with the great labour bestowed upon anatomical studies. It would seem that the favourite problem at present is the anatomical substratum of mental diseases, which is so vigorously searched for in the nerve-cells.

HOLLAND.

By Dr. F. M. Cowan.

Asylums are not popular institutions, and every now and then a virulent article appears in the newspapers, inveighing against gross

abuses and shameful practices by which men of perfectly healthy minds are designated insane by doctors, and may even be shut up for life. Such a case occurred a short time ago. A merchant suffering from delusions of persecution was admitted into the Meerenberg asylum. He kept complaining and insisting upon being discharged. An acquaintance of his wrote to the patient's wife, and did what he could to prevail upon her to take her husband home. Finding all his endeavours vain in that quarter, he wrote to a member of the second Chamber. The consequence was that the matter was brought under the notice of the Government. The honourable member, without seeing the patient, made the diagnosis of his perfect mental health after reading a couple of letters which had been sent him, and after seeing that the case-book recorded that Mr. K. was not violent, and took daily walks. Addressing the minister, he said, "Can there be stronger evidence that here we have a man detained in an asylum who should be at large?"

The discussions which followed were absurd, and clearly showed what an amount of nonsense honourable members may utter when they flounder out of their depth, and discuss matters which they know nothing about. The conclusion they arrived at was that the formalities required for admission into asylums were not stringent enough. Now, although it was generally thought by alienists that a great deal of precious time was lost owing to the different formalities already required, it may be expected that one day or other new measures will be introduced which, in the long run, will no more satisfy the malcontents than those which now exist, and which may seriously damage the mentally diseased. *Deliberante senatu perit Saguntum* was true in a certain sense here; the patient died of consumption, and put a temporary stop to the matter. As one of the supporters of the motion has since come into office as a Cabinet minister, it is unfortunately probable that we shall hear more of this. One of the most grossly mismanaged asylums has fortunately been suppressed,—at least, it will be so some months hence, viz. the asylum at Dordrecht. The governors of this institution had made it a veritable Black Hole. By their stupid management not only were two patients sadly burnt in a single room, built according to their own ideas, but it was found that to make the asylum a profitable business the patients were stinted in their food. The senior physician, disgusted by these shameful proceedings, resigned his position, but did not attain his *otium cum dignitate* without any further tribulations. When he complained that orders given by him were countermanded by the governors, the chairman of this honourable board called upon him and dastardly attacked him with a stick, badly cutting the doctor across the face, and giving him a number of bruises. Most fortunately the criminal bungling of a lot of pettifogging creatures will now be stopped. In fact, so thoroughly are the authorities convinced that the asylum has a bad reputation that the burgo-

master, when he proposed to suppress it, gave as a reason that after what had occurred no physician of self-respect would take the place of superintendent. An endeavour to obtain an inquiry into the state of matters was resisted by one of the aldermen, the architect of the single room I mentioned above, formerly one of the governors, who thought an inquiry would be a proof of distrust in these worthy persons. It is a sad thing that the law which was considered too stringent by several people should be impotent to stop such proceedings, and sad it is that the Psychological Society did not raise a single protest against a state of things which it must disapprove of. As it is, the society now appears to agree with the governors, and to approve their line of action.

A new asylum has been built near Leyden; it is built on the cottage system; the grounds were formerly a country seat, and are finely wooded.

DENMARK.

By Dr. A. Friis.

During the last year there has been no change of importance in the care of the insane of Denmark. In this country there are five large asylums, viz. the St. Hans' Hospital for the city of Copenhagen, and the four State asylums at Vordingborg, Middelfart, Aarhus, and Viborg. The last mentioned is only for incurables; the others both for curable and incurable patients. Besides these there are a few small provincial asylums designed only for provisional care and for the incurable. At the beginning of the year there were, according to the Asylum Reports for 1896, 2939 lunatics under care in the large asylums, viz. in St. Hans' Hospital, 1019; in the asylums at Vordingborg, Middelfart, and Aarhus respectively 470, 572, and 539; in the Viborg Asylum, 339. During 1896, 802 cases were admitted, 653 discharged or died. Of those admitted, 25 per cent. were suffering from melancholia, 20 per cent. from mania, 17 per cent. from paranoia, 36 per cent. from dementia, and 2 per cent. from idiocy. In the State asylums there has for some time been need for room, especially for incurables; and the Department of Justice, which has the supervision of the lunatic asylums, has therefore appointed a commission, consisting of the medical superintendents of the above-named asylums and the Dean of the Royal College of Health, to inquire into this and other questions concerning the insane.

The low number of idiots in the lunatic asylums of the State is owing to the fact that these patients are not admitted. In Denmark there are, therefore, two special asylums for idiots and imbeciles of all kinds, adults and children, viz. the Keller Asylums

Gamle Bakkehus—Ebberøedgaard, each with about 600 patients, of whom about 200 are children undergoing school training. The asylums are situate in and near to Copenhagen (the schools in the city), and are private institutions subsidised by the Government. Though the asylum of Ebberøedgaard is only about six years old, and has more than 400 patients, there is already a great need for places, especially for the helpless. It is therefore in contemplation to enlarge one of the asylums; at the same time that the Keller asylums, which now are spread over a great extent, are to be congregated in a new asylum, built in the province of Jylland.

For the care of the epileptics no special provision has hitherto been made in Denmark. Those of them who are insane or feeble-minded, and therefore dangerous or very troublesome, have been admitted into the asylums for lunatics or idiots; while the rest, to the detriment of themselves and others, when they have not been under private care, have been obliged to drag out their existence in poor- or work-houses. In 1896 the committee for the lunatic asylum at Viborg, therefore, made a proposal to the Judiciary Department for enlarging this asylum, and at the same time uniting it with an asylum for epileptics. In spite of the reasons in favour of establishing such an institution, and in spite of the fact that the project was recommended by the highest medical authority in this country (the Royal College of Health), the matter made no progress, the Minister of Justice resolving that the establishment of asylums for epileptics, at all events for a long time, could not be regarded as a duty of the State. Yet it is to be hoped that the commission for the care of lunatics will take also this matter up, and that the minister will change his mind. For the present it has been tried by private means to start two small colonies, and the medical superintendent of the Viborg Asylum, Dr. Hallager, has brought out a popular, well-written book *On the Treatment of Epilepsy and Epileptics*, with the intention of instructing the public in the matter.

It has, however, already caused a collection of statistical data concerning epileptics. Dr. Hallager has made a careful enumeration of epileptics in the district in which his asylum is situated, and by comparing it with the statistics of the number of young men who are found incapable of being soldiers by reason of epilepsy, and with the few existing statistics of epileptics from other countries, he has found out that there must be about 3000 epileptics in Denmark, or about 1.4 per mille of the population, the number of the inhabitants being about 2,200,000. How many of these require care in an asylum it is, of course, difficult to say, but it will surely be a rather large proportion if all claims are to be met. For instance, about seven hundred are under public care, but only between four and five hundred under constant medical supervision in asylums or hospitals.

In his book, *De la Nature de l'Épilepsie*, published in Paris, 1897,

Dr. Hallager, who has specially studied epilepsy, communicates his views on the morbid physiology of epileptics. He concludes that the fits are owing to a sudden anæmia of the brain, and this anæmia is always the result of a reflex constriction of the vessels through the vaso-motor centre, which is irritated either from the cortex cerebri or the peripheral parts of the body; only when the irritation is owing to physiological processes (or latent lesions) we call the epilepsy idiopathic. The form of the fit is determined by the degree of irritability of other centres put in activity, so that the same anæmia which in one individual only causes "petit mal," in another with irritable motor centres will be the cause of a fit of "grand mal." In the same manner the aura and the post-epileptic phenomena depend on the condition of the different centres or organs; the post-epileptic mental condition depends partly on the form and intensity of the fit, partly on the predisposition of the individual (*i. e.* his cortical centres).

Dr. D. E. Jacobson has published his observations on *The Pathogenesis of Delirium Tremens*. He seems inclined to regard this mental state as the result of an autotoxic infection in a chronic alcoholic. The reasons he gives for his theory, which is based on a careful investigation of about 250 cases, seem to be very convincing. He denies, on the contrary, the existence of the so-called delirium tremens traumaticum, and supposes that the traumatic lesion as a rule is consequent to the delirium, and not the reverse.

NORWAY.

By Dr. Holmboe, translated by Dr. Lindell.

Dr. Lindell in 1890 sent an account of the provision for the insane in Norway to Dr. Hack Tuke's *Dictionary of Psychological Medicine*. Since that time our Lunacy law of 1848 has been amended by the law of 1891. According to this law, four-tenths of the expenses for the maintenance of the insane poor, which expenses were formerly charged entirely upon the respective towns and counties, are now to be refunded by the Government, but only in the case of pauper lunatics in need of special treatment. The necessity for this special treatment is to be decided by the county physicians ("Amtslæge") of whom there is one for each county. This Government grant applies to pauper lunatics in asylums, and also to those who are cared for in private houses. The law, therefore, has compelled the ministry of justice to increase the general control of the insane in private houses, and to order the district physicians to carefully supervise these patients.

A comparison between the census of 1891 and of 1865 shows

that the number of insane has increased absolutely as well as proportionally to the population, as may be seen from the following table :

Idiots	1865.	1891.
Acquired mental diseases	2039	2431
	3156	5318
Total	5195	7749

Proportionate to the population—

Idiots	1865.	1891.
Acquired mental diseases	1'835	1'823
	1'539	1'376
Total	1'327	1'258

This increase partly depends upon more careful investigation, but it is too great to be entirely owing to that, especially as regards acquired mental diseases.

Insanity is now as before more prevalent in the southern parts of the country. The want of accommodation is more and more felt, although during these latter years great sacrifices have been made both by the Government and by certain cities to meet the difficulty.

Since 1890 a new municipal asylum has been opened at Bergen, on the estate of Newengaarden. It accommodates at present 224 patients. The State Asylum at Rotvold is enlarged by the addition of a new wing and a farm for fifteen patients. The communal asylum at Trondhjem and the private asylum at Moellendal have also been somewhat enlarged. On the other hand, the old and inconvenient communal asylum at Stavanger has been closed.

The Storting (Parliament) granted in 1894 the necessary means to build an asylum for the most northern parts of the country on the estate Roewvik at Bodoe. The buildings are far advanced towards completion, but they are in such a remote part of the country that many difficulties have been encountered, so that the asylum probably will not be finished for many years. It is being constructed to accommodate 230 patients.

Furthermore, a very favourable reform has been introduced in our lunacy system. In 1894 the Storting authorised the reconstruction of an unused building at the prison in Trondhjem as a lunatic department for insane convicts and criminal lunatics, who on account of their moral degeneration and their dangerous tendencies are considered unfit to be cared for in ordinary asylums. The ordinary institutions are thus relieved of their most dangerous and most offensive patients, and consequently a more free treatment of the other patients has become possible.

The total accommodation in the asylums of Norway was 1328 in 1890, and is at present 1549. Notwithstanding the increased

asylum accommodation, the insufficiency is still very inconvenient. Very many, especially incurable cases, whose condition demands asylum care, continue in private houses, sometimes under very unfavourable circumstances.

The number of establishments for idiots is the same as in 1890, viz. three. One of them has been bought by the Government, and it is under consideration to purchase both the others.

Clinical lectures on psychology have been delivered since 1896 in the University of Kristiania by a specially appointed psychologist. Examination in this science is still not required for medical graduation.

SWEDEN.

By Dr. Lindell.

The first lunacy law of 1858 was repealed, and after careful revision replaced by the Royal Ordinance of 1883, which still is in force. British psychologists will find a very complete description of it in the *Reports on the Working of the Lunacy Laws Abroad* (1885), except that Supplements A and B were modified and improved in 1894.

In consequence of a trifling informality on the admission of a patient into a private asylum, a Royal Committee was appointed in 1894. It consisted of five members, only one being a psychologist, who were to revise the law and to draw up a proposal for necessary amendments. The result was in 1896 laid before the Ecclesiastical Department as a proposal for a new lunacy law, but in spite of various proposed improvements it was found such that the psychologists requested to give their opinion had declared unanimously against the proposal, as being essentially a change for the worse. As it has not yet been finally debated, it will be more convenient to postpone a minute account until the result is known. However, it may be stated as evident testimony of the power of the present law to secure legal protection for the insane, as to their admission into, treatment in, and discharge from public and private lunatic asylums, that the Committee, after investigating the few cases—less than ten in a total of 10,000 admissions—of alleged unlawful detention in asylums, were convinced that in reality no one had been unlawfully admitted into a Swedish lunatic asylum.

The increase in the number of the officially known insane until 1890, when the last census was made, may be shown in a tabular form thus :

Years.	Population.	Number of		Ratio (per 10,000).	
		Lunatics.	Idiots.	Lunatics to population.	'Idiots to population.
1860	3,859,728	5000	2500	13	6.48
1870	4,168,525	5760	3240	14	7.79
1880	4,565,668	7229	4227	15.83	9.26
1890	4,784,981	8703	7619	18.19	15.92

Owing to deficiency in the reported statistics by the clergy the cited figures must be considered rather too small. However, one must regard them as evidence that insanity is considerably increasing in Sweden. Nevertheless the excellent report by the Scottish Commissioners in Lunacy in 1895, contradicting the alleged increasing prevalence of insanity in Scotland, may certainly prove applicable to Sweden.

Great efforts have been made during the last decennium to meet the continually increasing want of lunacy accommodation, and the Riks-dag (Parliament) has with praiseworthy generosity supplied the necessary means. Thus older asylums have been enlarged, and new asylums erected. The accommodation in the State asylums during the years 1862—1896 has been quadrupled, viz. from 1074 to 4259 beds.

As many of the State asylums are open for patients of the wealthier classes (in all 126 beds) for an extra fee, there are only three small private asylums, which accommodate in all forty-two lunatics.

The accommodation at the different State asylums was at the end of 1896 as follows:—In the asylum situated at Stockholm, 270 beds; Upsala, 446; Nykoeping, 140; Vadstena, 784; Vexioe, 222; Visby, 32; Malmoe, 175; Lund, 1190; Gothenburg, 175; Kristinehamn, 300; Hernoesand, 225; Piteaa, 300: total, 4259.

In connection with the asylum at Upsala a number of detached blocks for 800 incurable patients are being erected, besides which small enlargements of the asylums at Gothenburg, Kristinehamn, and Nykoeping are in progress. Finally a plan is submitted for building a new asylum for about 1000 patients, the position of which presumably will be at Restad, about three miles south from the town of Venersborg.

For persons with congenital insanity (including idiocy) there is the following special accommodation:—Nineteen training schools (for imbecile children) with 532 beds; six work homes, with 92; nine idiot establishments (asylums), with 146: total, 770 beds.

Most of these institutions receive subsidies both from the Government and from the respective County Councils (Landsting).

218 adult idiots with dangerous tendencies were (1896) cared for in the lunatic asylums.

Except as above described, insane persons at the end of 1896 were cared for :—In union workhouses, 1127 lunatics, 688 idiots; in ordinary hospitals, provisionally, 56 lunatics, 16 idiots. The rest were at home or treated as single patients.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held by the courtesy of Dr. W. S. Kay at the West Riding Asylum, Wadsley, Sheffield, on 16th February, 1898, under the Presidency of Dr. T. W. McDowall. The following members were present:—H. Rayner, J. Carlyle Johnstone, James Beveridge Spence (Registrar), E. B. Whitcombe, Fletcher Beach, T. Stewart Adair, David Bower, M. B. Ray, Harry A. Benham, Crochley Clapham, D. Yellowlees, Evan Powell, Chas. E. Hetherington, J. A. Campbell, A. R. Urquhart, J. Holmes, T. W. McDowall (President), S. Edgerley, Bedford Pierce, Henry J. Mackenzie, Richard Legge, M. D. Macleod, J. R. Macphail, Robert Jones (Secretary), Rothsay C. Stewart, Keith Campbell, William C. Sullivan, Margaret C. Dewar, Walter S. Kay, Stuart Isacke, Arthur Finegan, H. Hayes Newington (Treasurer), and J. R. Whitwell.

The PRESIDENT:—Gentlemen, before we enter on the reading of the papers to be brought before us, I have to suggest to you the propriety of forwarding a vote of sympathy to the sons of Dr. John A. Wallis, lately deceased. He was personally acquainted with many of us in this room. We all respected him as an old friend, and we all liked him in his official capacity as a Commissioner of Lunacy. I think it would be exceedingly becoming of us to show our regard for him, both personally and officially, and to send through Dr. John Merson, his most intimate friend, a message of sympathy with his sons in their bereavement. I think you will agree to this unanimously, and instruct Dr. Jones to do as I have suggested.

The vote of condolence was seconded and carried unanimously.

The following candidates were elected Ordinary Members:—Anderson, John Sewell, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Hull City Asylum, Willerby, near Hull. Proposed by John Merson, S. Edgerley, and J. G. McDowall. Boyle, Alice Helen Ann, M.D.BruX., L.R.C.P.Edin., L.R.C.S.Edin., L.F.P.S.Glasgow, 3 Palmeira Terrace, Hove, Brighton—late Assistant Medical Officer, London County Asylum, Claybury. Proposed by Robert Jones, Emily Dove, and Margaret Orange. Dyer, Sydney Reginald, M.D.BruX., M.R.C.S., L.R.C.P.Lond., D.P.H.Eng., Barrister-at-Law, Middle Temple; Deputy Medical Officer, H.M. Prison, Wandsworth; and 13, Dorlcote Road, Wandsworth Common, S.W. Proposed by David Nicolson, James Scott, and J. J. Pitcairn. Goldie-Scot, Thomas, M.B., C.M.Edin., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Warneford Asylum, Oxford. Proposed by James Neil, J. Bywater Ward, and Heurtly Sankey. Greenwood, H. Harold, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Derby County Asylum, Mickleover,

Derby. Proposed by Richard Legge, S. Rutherford Macphail, and F. K. Dickson. Jones, W. Ernest, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Leicestershire and Rutland Asylum. Proposed by Dr. Rothsay Stewart, Dr. J. E. M. Finch, and Dr. H. M. Baker. Pasmore, Edwin Stephen, M.D.Lond., M.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Banstead. Proposed by T. Claye Shaw, George H. Savage, and Robert Jones. Piper, Francis Parris, M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Claybury, Woodford Bridge, Essex. Proposed by T. E. K. Stansfield, F. R. P. Taylor, and Robert Jones. Todd, Percy Everard, M.B., C.M.Édin., Acting Medical Superintendent, Port Alfred Asylum, Cape Colony, South Africa. Proposed by W. J. Dodds, T. Duncan Greenlees, and T. W. McDowall.

Crochley Clapham, M.D., Physician to the Royal Hospital, and Lecturer on Clinical Medicine, University College, Sheffield, read a "Note on the Comparative Intellectual Value of the Anterior and Posterior Cerebral Lobes" (see page 290).

W. C. Sullivan, M.D., Stewart Scholar, Royal University, Ireland, Deputy Medical Officer, H.M. Prison, Liverpool, read a paper on "Alcoholism and Suicide" (see page 259).

A. Keith Campbell, M.B., C.M., lately Assistant Medical Officer, Murray's Royal Asylum, Perth, read "Notes of a Case of Hæmatoporphyria" (see page 305).

Bedford Pierce, M.D.Lond., The Retreat, York, read "Notes of an Unusual Case of Poisoning," published at page 313.

Dr. Kay kindly invited the members of the Association to lunch at the Asylum, and subsequently afforded facilities for its inspection. The members dined together after the meeting in Sheffield.

SOUTH-WESTERN DIVISION.

DISCUSSION ON DR. GOODALL'S PAPER (see page 235).

The CHAIRMAN said they were all very much obliged to Dr. Bullen for reading Dr. Goodall's able contribution. It was a very suggestive paper—suggestive of a great amount of added labour by Assistant Medical Officers.

Dr. STEWART said, as an old Assistant Medical Officer of very large County Asylums, he quite sympathised with the remarks of the Chairman as to the added labour which anything of this kind would involve. He also quite fell in with Dr. Goodall's feeling in the hint which he threw out as to the unnecessary amount of what was really only clerical work that was cast upon assistant medical officers. Throwing such duties upon scientific men took away the greater part of the time that might otherwise be devoted to such fascinating work as Dr. Goodall had alluded to in his paper. He used the word fascinating because he—a mere tyro in the subject—had enjoyed nothing more during the little time he had been able to devote to anything of the kind than the subject of anthropology. A very important statement in Dr. Goodall's paper was to the effect that normal standards would be required for various districts, and most people would think that it would be a useful thing for anyone who started these anthropometrical observations that they should have standards. The circumstance was very marked that in various districts of the country there were certain varieties and types more observed than in others; and it would be necessary, therefore, for each person to obtain the type and standard applying to that particular district. Dr. Stewart went on to speak of the interesting field which lay open to those taking up the subject, and said he could commend to anyone wishing a little interesting *divertissement* to take it up in connection with their own children and their own friends. The instruments required were not expensive

and Dr. Goodall would be, he was sure, delighted to assist in every way he possibly could.

Dr. DEAS remarked that Dr. Goodall did not propose that a committee should be appointed to consider the desirability of carrying on anthropometrical observations.

The CHAIRMAN said he thought Dr. Goodall rather proposed that the subject should be taken up individually by anyone having leisure. It struck him that the matter of obtaining the standard would be a very difficult one.

Dr. MACDONALD said they all very much regretted that Dr. Goodall was not present. He especially regretted it because at Moscow he had the pleasure of talking to him a lot about this subject, and he promised to show them on that occasion certain diagrams to illustrate his paper. Dr. Goodall had become an absolute enthusiast in this matter; in fact, he was perfectly mad over it. (Laughter.) One, however, must, he thought, pause for a moment to consider whether a map of Dr. Goodall's great ability would needlessly and wastefully give up his time to a subject of such an intricate and difficult nature unless he firmly believed there was something in it. (Hear, hear.) Therefore, although it might seem rather difficult for any of them to promise adherence to it, or say they would follow in his footsteps and try to move on the same lines, yet at the same time he did feel strongly that anything that might tend to elucidate many of the difficult problems in connection with that large element of asylum population, the mentally defective, would, he was sure, one day bear good fruit. (Hear, hear.) He believed that in the recent number of their journal there was a contribution by Dr. Goodall, and it only proved, as had been proved over and over again, that it was the busy man, the hard-working man, perhaps the over-worked man, who did the good solid work. (Hear, hear.) It was not the man with most leisure who did the most work.

SCOTTISH DIVISION.

A meeting of the Scottish Division was held in the Hall of the Faculty of Physicians and Surgeons, Glasgow, on 10th March. 1898.

Dr. T. W. McDowall, President of the Association, occupied the chair, and there were also present Drs. Carwell, Hotchkis, Ireland, Carlyle Johnstone, Hamilton Marr, Mitchell, Richard, Alexander Robertson, Turnbull (Secretary), Urquhart, Watson, and Yellowlees, with Mr. James R. Motion, Inspector of Barony Parish, as a guest.

NEW MEMBERS.

The following candidates were elected ordinary members:—William Arnott Parker, M.B., C.M.Glasg., Assistant Physician, Gartloch Asylum, Gartcosh, proposed by Drs. Oswald, Yellowlees, and Hotchkis; Stanley L. Dobie, Surgeon-Lieut.-Col. I.M.S., retired, L.R.C.P.Edin., M.R.C.S.Eng., L.S.A.Lond., Dunain Park, near Inverness, proposed by Drs. Keay, Urquhart, and Turnbull; Charles Percivale Bligh Wall, M.B., Ch.B.Edin., Assistant Medical Officer, District Asylum, Inverness, proposed by Drs. Keay, Middlemass, and Bruce.

Dr. Carwell read a paper on the Relation of Imbecile Children to Pauper Lunacy, which, with the relative discussion, will appear in the next number of the JOURNAL.

NOMINATION OF DIVISIONAL SECRETARY.

DR. YELLOWLEES moved that Dr. Turnbull be nominated for the Divisional Secretaryship, and that the name of Dr. Carlyle Johnstone be suggested for election to the Council in room of the Scottish member who falls to retire at next annual meeting. This was unanimously agreed to.

EXPENSES OF GENERAL AND DIVISIONAL SECRETARIES.

Dr. CARLYLE JOHNSTONE said that he rose to move the motion relative to this subject in the absence of Dr. Campbell Clark. He thought the general principle would appeal to them all, and he did not require to say much in favour of it; but apparently they would require to modify the terms of the motion, and if the meeting would agree to that, he thought, in the first place, that instead of saying the Divisional Secretaries, they should say "the General and Divisional Secretaries." In the second place, it would be better to guard against any undue extravagance by limiting the expenses a little more strictly. He hoped that the motion would be carried unanimously, and would only say in favour of the motion that at present the Secretaries gave up a great deal of their time and expended a great deal of energy and trouble, and they got no return for it except their thanks. The hardship was that they were penalised for sacrificing themselves for the members of the Association; and to have to pay all their expenses themselves was not right, especially as the Association was perfectly able to pay these expenses. He understood that it was a flourishing Association, and if this could not be afforded, other expenses might be cut down. This was a debt of honour which the Association should pay in the first instance. He therefore begged to move the motion as altered:—"This meeting resolves that it be a recommendation to the Council of the Association that the General and Divisional Secretaries have their travelling expenses paid in officially attending the annual meeting of the Association and the meetings of their division."

Dr. YELLOWLEES seconded the motion with pleasure. He thought that it was on the lines of other societies, that this was a just debt, and that they ought to pay it.

Dr. URQUHART said he would suggest a slight amendment, the motion to conclude with the words, "meetings within their divisions." At present they had divisional meetings in the various districts into which the country had been mapped out. The general meetings had formerly been convened principally in London, but of late years they had been drawn out of London into the various districts, to the benefit of the Association and the manifest convenience of the whole body of members. He thought that it was necessary that the Secretaries should attend these general meetings so far as possible. At the next general meeting (for instance) most important business relative to the conduct of the association would be dealt with. They expected that Dr. Carlyle Johnstone would attend the general meetings. If not, he would be inevitably knocked off the Council, and it would be a hardship if he had to go all the way to London on every occasion, while London men had only to go next door. It was a still greater hardship for their local Secretaries, who were more permanently connected with the Council. It was as much the business of the Divisional Secretary to attend the general meetings when these were within his own division as any other meeting in that division. He had formerly proposed that the Secretaries should have their travelling expenses paid as soon as the funds of the Association permitted, but was met with a *non-possumus*.

Dr. CARLYLE JOHNSTONE and Dr. YELLOWLEES having agreed to the alteration proposed by Dr. Urquhart, Dr. TURNBULL said that he did not think it was so hard on the Divisional Secretary to pay his expenses in his own division, because he ought to do that as a loyal ordinary member of the Association, but it was of great importance that he should attend the Council meetings which were held at the same time and place as the general meetings of the Association. He believed that it really would be of more use if one put it this way; that the Divisional Secretaries should have their expenses paid in attending those general meetings of the Association at which Council meetings were also held, because it was in that way they could more efficiently help in carrying on the business of the Association. He would give up the claim for expenses at divisional meetings. There were three general meetings in the year, and at

these a great deal of administrative work was done; and sometimes it was very necessary that the Scottish Secretary, for instance, should appear at a Council meeting for the transaction of Scottish business. If he went up to a general meeting to do that he must pay all his expenses himself unless they made a rule to cover such cases.

Dr. CARLYLE JOHNSTONE agreed fully with Dr. Turnbull's view, and only moved the amended motion because Dr. Yellowlees had so advised.

Dr. TURNBULL said that if the Secretary's expenses to the annual and divisional meetings were paid, the Division could more reasonably expect him to attend Council meetings when necessary, even though his expenses there were not refunded.

Dr. YELLOWLEES said that they had a representative member of Council, who was expected to attend the general meetings on their behalf.

Dr. IRELAND said he liked the original motion of Dr. Carlyle Johnstone a great deal better than the amended motion. Gentlemen laid stress upon Scotland being represented. What the exact value of that was he did not know, but he supposed it would be very difficult to say at what particular meeting it would require to be represented. It might be required at any meeting. He did not think that the limitation looked very well, although it might save a few shillings. He would propose the original motion on the billet.

No seconder was found to Dr. Ireland's motion.

Dr. CARLYLE JOHNSTONE then moved his motion as amended:—"That this meeting resolves that it be a recommendation to the Council of the Association that the travelling expenses of the General Secretary in officially attending the meetings of the Association other than divisional meetings be paid by the Association, and that the expenses of the Divisional Secretaries be paid when attending the annual meeting and the meetings of the Association held within their respective divisions."

Dr. YELLOWLEES seconded; and on the motion being put to the meeting it was unanimously agreed to.

FATAL ACCIDENTS INQUIRY (SCOTLAND) ACT.

Dr. MITCHELL stated that he had just had a case at Rosslynlee of an inquiry before a Sheriff and jury, under the Fatal Accidents (Scotland) Act, a bank of earth having fallen on a patient, and he wished to know whether that Act was applicable to asylums. Those present at the time of the accident had to go into the witness-box and give information about the occurrence; and the jury returned a verdict in accordance with the evidence.

Dr. TURNBULL thought it would be desirable to know whether all accidents in asylums came under this Act, or whether the Act applied at all to any accidents in asylums, and if so to what class of accidents. A fatal accident might occur in the ward, and he did not know whether it came under the Fatal Accident (Scotland) Act.

Dr. YELLOWLEES said it was a very important question. He had no idea that asylums should come under that Act, and he thought they should resist it as far as possible. He did not think any accident was a thing to be inquired into unless where a man was arrested and dealt with in the ordinary course of law. When a fatal accident occurred between one patient and another, it did not seem to him that the matter should be one of public investigation.

Dr. URQUHART said it was their duty, in the first place, to intimate every fatal accident to the Procurator Fiscal, and if the Procurator Fiscal decided that he would hold an inquiry before the Sheriff, it would be rather difficult for them to avoid it. They should know where they stood, and have opinion of counsel on the subject. They could not vote money at that meeting, however. The Act was generally held to have been unnecessary and futile.

The PRESIDENT asked if it would not be better to have a small committee to see whether this came within the Act.

Dr. YELLOWLEES said that the Procurator Fiscal was practically omnipotent

as to the course he chose to take, and it was quite right that the responsibility should rest upon him; but he did not think that official would have any further duty than to report the case and its accidental character to the Crown authorities, and he would expect in reply the order "No further inquiry necessary." He did not think that such a case would be regarded as coming under the Fatal Accident (Scotland) Act, which it seemed to him had its scope only as between employer and employed. He did not think that they should have interference, or rather publicity of that kind if it could be possibly avoided.

DR. CARLYLE JOHNSTONE said that he understood that Dr. Keay of Inverness had a case of the very same kind quite recently, and that he had persuaded the Procurator Fiscal with difficulty not to adopt the procedure of this new Act. Dr. Mitchell's case was advertised in the newspapers, and a public inquiry was held before the Sheriff in the ordinary way.

DR. HAMILTON MARR suggested that it might be desirable to write to the Lord Advocate asking about this matter. The conditions were not changed in asylums. The Act applied between employer and employed.

The PRESIDENT thought they should consult some competent legal person as to the terms of the Act, because it was very unlikely that the Crown officers would do anything for which they would be found in fault, and if they had the right to hold an inquiry nothing further could be said.

DR. TURNBULL suggested that this matter might be put on the agenda paper of the next meeting for further consideration, and this was agreed to.

AMENDED REGULATIONS FOR NURSING CERTIFICATE.

The PRESIDENT said that the next business was the adjourned consideration of the Report by the Educational Committee on the amended regulations for the Nursing Certificate.

DR. TURNBULL said there only remained one difficult point. The last discussion stopped short at that part of the report which dealt with the constitution of the examining body, about which there was a great difference of opinion. The recommendation of the Educational Committee was that the written answers should be examined by two examiners in nursing appointed by the Council for that purpose, and he believed that it was intended to have only two examiners for the whole country. He had a letter from Dr. M'Pherson, who intended to move the following motion:—"That a board of examiners be appointed in each division to examine all the written papers, and to examine each candidate *visd voce*." He (Dr. M'Pherson) would be willing to modify that motion to some extent if necessary, but he positively could not agree to the proposal of the Educational Committee.

DR. WATSON thought that there was also a proposal made that there should be two for each division of the country—Scotland, England, and Ireland.

DR. YELLOWLEES said that he was clearly of opinion that they ought to have a larger examining board than two for setting questions and examining papers. He proposed that the Board should contain representatives from each division of the Association, that they should set the questions for the whole country, and that they should examine and adjudicate upon the written answers. He did not see how they could alter the local examinations. He thought that the *visd voce* examination must be conducted, for practical reasons, as it was conducted now. If strangers could be got to do it, it would be better. The visitor was called the assessor in the old regulations, but properly it was he who should examine the candidates in the practical or *visd voce* part while the superintendent was present but did not taking any active part. As for the written examinations, he thought they certainly ought to be examined by the man who set the questions, he not knowing the names of the people who were being examined. He did not propose that every member of the Board should examine all the papers, but that they could divide the papers among them. Each division could nominate two members of the examining board, and they could examine the papers from another division than their own. He thought there should be no possibility of favouritism, and that

the examiners should not even know from what asylum the papers came. There were three divisions in England, one in Scotland, and one in Ireland, and that could give them an examining board or council of ten. He did not think it was fair so to burden two men. If there were a council of ten they would keep the arrangements right.

Dr. TURNBULL said he seconded that with great pleasure, more especially as he had himself suggested it in conversation with another member. The only point he would refer to in Dr. Yellowlees' remarks was that he thought that the examiners should examine the papers from their own division, because if there was any difficulty in any case they could more easily get at the candidate.

Dr. YELLOWLEES was strongly of opinion that they should *not* get at the person, that the examination of the papers should be independent of the person who wrote them. The only doubt he had about it was whether ten was not too large a number.

The PRESIDENT said it was moved that there should be two representatives from each division of the Association for the inspection of the written papers and the setting of the questions—the practical part to be taken as before, the assessor examining in the Superintendent's presence.

Dr. YELLOWLEES did not see how, in the face of the multitude of people, they could improve on that. They could not expect the members of the Board to go round the country to all the different asylums. The fees should also be increased, so that those who examined the papers should get some remuneration for their services.

Dr. TURNBULL said that that came on a little later, and he had no doubt that they would agree with the Educational Committee, who thought that the additional fee was necessary.

The motion, on being put to the meeting, was unanimously agreed to

A vote of thanks to the President for his conduct in the Chair terminated the proceedings.

RECENT MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Reg. v. Prince.

The *cause célèbre* of this quarter was the trial of Richard Arthur Prince, an actor, for the murder of the popular actor known as William Terriss. The case attracted a great deal of attention in consequence of the circumstances of the crime, but is of no great medical or legal interest. The prisoner waited for Mr. Terriss at the door of the Adelphi Theatre, and as the latter was stooping down to insert the key in the lock the prisoner stabbed him twice in the back. The deceased turned round, and the prisoner stabbed him to the heart. It was proved that the prisoner was extremely poor: that he had many times applied for, and received, assistance from the Actors' Benevolent Fund, and that he had received this money on the recommendation of the deceased. The managers of the fund at length refused to assist him further, and the prisoner appears to have attributed this refusal to the influence of the deceased. It was proved that for many years the prisoner had suffered from delusions of persecution, and that he had very often accused different persons of "blackmailing" him; that he had complained that a Mr. Arthur, manager of a theatre, had been "blackmailing" him for ten years, that he had complained that actors generally had "blackmailed" him; that the men where he worked had been sent by Mr. Arthur to blackmail him; that he had complained that his tea was poisoned. After his arrest for the murder the prisoner repeatedly stated that the deceased had blackmailed him for ten years.

Dr. Bastian stated that he had examined the prisoner at the request of the Treasury, and that the prisoner's mind appeared to be saturated with delusions of persecution. Prisoner's act in killing Mr. Terriss was the result of those delusions. He did not think that the prisoner was capable of exercising self-control at the time. The judge: Would it make any difference in witness's opinion if he thought that prisoner had premeditated the act? Witness: No, because insane persons do premeditate. "I am perfectly certain that the prisoner was insane." Prisoner knew that he was making an assault on Mr. Terriss, but he did not know the quality of the act.

Dr. Hyslop of Bethlem and Dr. Scott of Holloway Gaol gave similar evidence. The learned judge told the jury that there was no doubt that the prisoner committed the act, and there was also evidence that it was premeditated, but premeditation did not prevent a man's being so insane as to be irresponsible at law. The judge then referred to the well-known rule of law, and said that it was clear, according to law, that a person might be insane to a certain extent, and yet be responsible. The mere fact of insanity was not enough to make a person irresponsible.—Guilty, but insane.—Central Criminal Court, January 13, 1898 (Mr. Justice Channell).—*Times*, January 14.

The usual latitude was permitted to the medical witnesses, who were allowed to give evidence of their opinion of the state of mind of the prisoner at the time of crime. The judge summed up in the strict terms of the answers in the McNaghten case, but plainly intimated to the jury that they were at liberty to find the prisoner insane.

Reg. v. Cross.

Prisoner, a coal merchant, aged 22, was indicted for the attempted murder of Annie Drury. Prisoner, disguised with a handkerchief over his face, with two holes cut in it for vision, went to the house at which Mrs. Drury was staying. He had a revolver in one hand, and in the other a dagger made out of the tine of a pitchfork fixed in a wooden haft. He fired the revolver at one of the women in the house, and stabbed another several times. Subsequently he came undisguised to the house in which they had taken refuge, and talked about the outrage, saying that the man who committed it ought to be caught. The plea of insanity was set up, but no details are given in the report. The jury found the prisoner guilty, but recommended him to mercy on the ground that he was of weak mind, although not insane.—Norwich Assizes, February 26, 1898 (Mr. Justice Grantham).—*Times*, February 27.

Another instance of the growing practice of taking into consideration a mental state which, while not involving complete irresponsibility, is yet a reason for mitigation of punishment. In this case, by inflicting only twelve months' imprisonment, the judge appears to have given effect to the plea.

Barnett v. Blagg and others.

This was one of the rare cases in which a will is upset on the ground of insanity. The testator was proved to have suffered from delusions of persecution, which gave rise to a groundless and intense feeling of hostility towards his father, brother, and sister, whom he excluded from benefit by his will. Sir F. Jeune, sitting without a jury, pronounced against the will.—*Times*, December 9, 1897.

THE INSANE POOR IN PRIVATE DWELLINGS IN MASSACHUSETTS.

BY SIR ARTHUR MITCHELL, K.C.B., M.D., LL.D.,

Ex-Commissioner in Lunacy of Scotland.

[In view of the fact that the State of Massachusetts has the near prospect of getting a new Lunacy Law, Sir Arthur Mitchell thought it might be useful to make an effort to secure good provisions in that law, especially in

respect of the care of a certain class of lunatics in private dwellings, and with that object wrote as follows on those parts of the Eighteenth Annual Report of the State Board of Lunacy and Charity (January, 1897) which deal with the boarded-out insane. The remarks, from which we take these extracts, appeared originally in the *Boston Medical and Surgical Journal* of November 4th, 1897.—Ed.]

THE boarding-out of the insane poor began in Massachusetts in August, 1885, under the provisions of an Act approved in that year.

The number of patients boarded out on the 30th of September of each of the eleven years is as follows:

1886, 34; 1887, 73; 1888, 80; 1889, 110; 1890, 148; 1891, 155; 1892, 175; 1893, 164; 1894, 158; 1895, 142; 1896, 129.

These figures show a slow but steady growth of the number of the boarded-out during the first seven years, but during the last four years there is a steady decline, though it is said that there has been "the same effort to place patients out." According to the Report, "the lack of material alone has prevented the advance of the system." There is room, however, for doubting the accuracy of this opinion. Other causes of failure have been in operation, and these must be considered in forming an estimate of the result of the experiment, which, as the Report says, we may fairly expect to be able to do from a knowledge of what has happened during the eleven years of its working.

I. MENTAL AND BODILY CONDITION OF PATIENTS PLACED IN PRIVATE DWELLINGS.

(1) "Persons of the quiet and chronic class." Page 84.

(2) "Chronic cases of good physical health and quiet and tidy habits." Page 85.

(3) "Entirely tractable." Page 86.

(4) "Simply requiring to be comfortably clothed, housed, and fed." Page 86.

In Scotland patients provided for in private dwellings are certified to be (1) incurable, (2) harmless, and (3) not in need of such special nursing as cannot easily be found out of institutions. This is regarded as enough. As a permanent provision is contemplated, incurability is assumed to be a feature of the patient's condition. Of course, patients may sometimes be erroneously certified to be incurable, and recoveries among them may therefore occur. Transferences from asylum care to private care, made for the purpose of completing or confirming convalescence, are not regarded as a mode of providing for the insane, but as a means of treatment; they are of a temporary character, and are called *Liberations on Probation*.

II. ADVANTAGES TO PATIENTS OF CARE IN PRIVATE DWELLINGS.

(1) The "patient enjoys home comforts and pleasures, and a measurable return to his former habits of life." Page 85.

(2) "The flickering remnants of mental activity are stimulated by the presence of old familiar habits, and the patient is happier than in the hospital." Page 85.

This accords exactly with forty years' Scottish experience. If it is true of any single patient that his happiness and enjoyment can be thus increased, the State has no right to deprive him of that blessing, even if it cost a little more, instead of a good deal less. *Admittedly*, some lunatics do enjoy life more out of asylums than in them—in their old familiar roughish environments than in the great formal day-rooms and dormitories of a public institution, with the irksome discipline and methods which must and always do exist there. If there are, as is *admitted*, some patients who can be thus benefited, it becomes a duty to ascertain how many there are, and, with that in view, to

ask ourselves whether long connection with asylums does not tend to make us bad judges of what patients among the incurable could with advantage live under private care in natural non-institutional surroundings.

III. CHARACTER OF FAMILIES IN WHICH PATIENTS SHOULD BE PLACED, AND ASYLUM TRAINING OF GUARDIANS.

(1) "In families without young children, and one or both of whose heads have had hospital training." Page 85.

(2) In families in which "enough of the hospital system appears to help ordinary family government." Page 85.

In the experience of Scotland the presence of young children in the homes of the guardians is often a decided advantage to the patients. It is a common experience to find a boarded-out lunatic an excellent and trustworthy nurse.

Asylum-trained guardians do not ordinarily prove so satisfactory as persons who have no special training, but who have shown good common sense and kind-heartedness in their relations to their children, relatives, and neighbours. There is nothing which is so much disliked in Scotland as the appearance in the homes of the boarded-out of any trace of asylum methods of management. Every effort is made to render the life of such patients a true home and family life—the patients being as nearly as possible members of the family in which they live. This is generally found to be quite possible; and the patients share the interests, the pleasures, and the sorrows of their guardians.

IV. DIFFICULTY IN SECURING WITHOUT DELAY IN CASE OF ILLNESS THE CARE WHICH CAN BE AT ONCE OBTAINED IN ASYLUMS.

(1) There is a "difficulty of securing in case of illness the same care that can be obtained without the slightest delay in the hospital." Page 88.

It is difficult to believe that this is seriously advanced as an obstacle in the way of boarding-out suitable patients.

The *care* referred to is evidently medical care. The guardians may fall ill as well as the boarders, and there would be no greater difficulty in obtaining the attention of a medical man in the one event than in the other. It is no hardship that the guardians and patients should be on an equality in this matter. A residence would not, of course, be chosen because it was far from a doctor, nor, when such a residence was selected as in many respects suitable, would a specially delicate patient be placed in it; but, in a general sense, there is nothing in the condition of suitable patients to prevent their living in the circumstances in which people of their class usually live.

V. RISK OF GUARDIANS DOING THEIR WORK FOR THE SAKE OF GAIN.

(1) There is a risk that persons will "take patients for the sake of gain." Page 86.

(2) In agreeing to receive boarders "the motive of personal gain necessarily exists to some extent." Page 87.

No one could have expected that persons would receive insane boarders into their families without the hope of some advantage from doing so. Indeed, they ought not to do so without that hope. They ought to be sufficiently remunerated. Proper payment tends to secure good work in this as in other things. It is not a work of charity, though kindness should appear in it, and be required. The word *gain* has associations which give it an unpleasant ring; but the motive of gain or advantage is quite a proper motive, and in good administration there is no difficulty in preventing abuses and excessive gains.

VI. RISKS TO THE YOUNG PERSONS FROM ASSOCIATION WITH THE INSANE.

(1) "The companionship of a person afflicted with insanity is extremely unsuitable for young and unformed minds, and is sometimes even attended with dangerous results." Page 86.

(2) "The influence on children is far from good." Page 89.

No evidence of such injurious influence has presented itself in Scotland. It must be remembered that the insane who are under private care are believed to be incurable and harmless, and are often feeble in body as well as in mind. They are objects of sympathy, and the young as well as the old are led to treat them with kindness and consideration. In this direction there is an educational advantage to the young from having two or three imbeciles boarded in a village, in whose well-being the State shows an active and kindly interest. The real nature of the sad condition of such persons comes to be understood, and sentiments like the following become more common :

"An' is there ane amang ye but your best wi' them wad share ?
Ye mauna scaith the feckless, they're God's peculiar care."

It is difficult to disprove an assertion like that contained in these quotations. It is mere assertion, however, and on its side is unsupported by proof ; and, so far as the experience of forty years' work in Scotland goes, there is no evidence of any such injury to the young.

VII. THE RISK OF OVERWORKING PATIENTS IN PRIVATE DWELLINGS.

(1) There is a "danger that too much work may be imposed" on them.
Page 87.

(2) There is a risk of the "imposition of tasks too severe for strength."
Page 87.

Of course, such a danger must exist. The risk, however, is not great. And it will not be difficult under a good administration to make arrangements which will render the risk exceedingly small. The existence of this, as of any other risk, ought not to be ignored, but it will not be found to be of such magnitude as to constitute any obstacle to the development of the system of boarding-out the incurable and harmless insane poor with guardians or caretakers selected from the people either of New England or of Old Scotland.

VIII. PATIENTS IN FAMILIES LOSE THE AMUSEMENTS OF PATIENTS IN ASYLUMS.

"Patients in families are necessarily deprived of almost all the advantages of social life, the amusements and entertainments which form so large a feature of the ordinary hospital routine." Page 87.

The dances, theatrical performances, concerts, and games of asylum life become proper, or rather necessary, as a relief to the dull monotony and routine of that life, and are needed for patients, officers, and attendants alike. But going back to family life is a going back to true social pleasures and enjoyments. These are longed for by asylum inmates just in proportion to the power they have of longing for anything. No sane person would exchange them for asylum dances and concerts. The thousand and one familiar things constantly going on around patients in families constitute a far greater source of enjoyment than the scenic and got-up entertainments of asylums, and fill their lives with truer delights. Of course, all this involves the ability to give to boarded-out patients a life closely approaching to real family life,—that is, the ability to place them with guardians or caretakers who will make them as far as possible members of their families. That this is possible has been abundantly proved, and the happiness of many of the insane poor has in that way been much increased.

IX. PRIVATE CARE BEST SUITED FOR CONVALESCENTS.

(1) Care in private dwellings "seems to apply most happily to those who are on the road to recovery"; they are "convalescent homes for them"; "several patients entirely recovered in this way, whose recovery would have been doubtful, or very much delayed, had they remained in the hospital."
Page 88.

(2) "Convalescent cases receive the most benefit" under private care; "for them the system is best suited." Page 89.

There is a complete misunderstanding here of what is properly enough called

the *system* of boarding-out. It is a method of providing for the care of the incurable and harmless, and it concerns itself with arrangements and conditions which are expected to be lasting.

Of course, recoveries are often hastened and confirmed by removing patients, who are improving, from asylums to care in their own homes, or in the homes of persons not related to them, and every good lunacy law should make it easy to liberate patients on probation for some definite period with this good end in view.

But it is an altogether different feature of the lunacy administration of a country which proposes to provide for a considerable number of harmless and incurable lunatics in private dwellings, instead of leaving them in asylums.

The number of pauper lunatics in Scotland satisfactorily provided for in private dwellings is 23 per cent. of all the pauper lunatics in the country. Scotland is nearly twice as populous as Massachusetts, and the proportion of the insane to the population is nearly the same.

In further reference to this point, it seems proper to ask whether convalescent insane patients are more fit than others to be exposed to the risks of being under the care of persons without hospital training, of being without the means of instantly having a doctor, of being kept for gain, of being overworked, &c.; and also, whether they would not injure young persons associating with them, and would not suffer from the loss of hospital entertainments and hospital social life.

X. STRAIN ON GUARDIANS OF ATTENDANCE ON PATIENTS BOARDED WITH THEM.

(1) The guardians or caretakers may tire "of the strain which this constant and unremitting attendance occasions." Page 86.

(2) "They can never leave home together without first securing some reliable neighbour to take charge in their absence." Page 86.

If suitable patients are selected for care in private dwellings, there will not be any such "constant and unremitting attendance" as to cause any strain which will be a subject of complaint. It may be otherwise, of course, if the patients are badly chosen. The presence of an insane member in a family will, no doubt, sometimes—perhaps often—make it as difficult for both guardians if there are two; or for the single guardian if there is only one, to leave home as if there were young children in the family. But it will not be more difficult; and the parents of children, if they are sensible and respectable people, do not complain of having to keep at home, or of their not being as free to move about as if there were no children under their care.

XI. WOMEN SHRINK FROM ASSOCIATION WITH PERSONS OF IMPAIRED INTELLECT.

"Most women shrink from near association with persons of impaired intellect." Page 89.

This is a very surprising statement. It is not true of the women of Scotland. They are as capable and fearless as they are kind in nursing persons of impaired intellect. They often devote themselves most lovingly and intelligently to the care of a helpless imbecile or dement.

It is not easy to believe that what is said here of Scottish women could not be said with as much truth of the women of Massachusetts.

XII. THE DEMAND FOR INSANE BOARDERS EXCEEDS THE SUPPLY.

(1) It is "a significant fact that the demand for insane boarders invariably exceeds the supply." Page 81.

(2) The "demand for patients is always greater than the supply." Page 89.

These are most important statements, and show the possibility of making care in private dwellings a part of any whole scheme for providing for the insane poor, if well-directed efforts are earnestly and continuously made. This,

of course, assumes that the proportion of incurable and harmless patients in the whole body of the insane poor does not differ radically from the proportion in Scotland; and there is nothing to show that any such difference exists.

XIII. BOARDING-OUT IS OBJECTIONABLE AS LEADING TO THE REMOVAL FROM ASYLUMS OF USEFUL AND PROFITABLE WORKERS.

(1) "The boarded-out are those easiest to care for in the hospital." Page 88.

(2) "The number of paid employés in our hospitals is so small that much of the work must be done by patients, with the result not only of considerable saving to the State, but of being a wise adjunct to the treatment of the patients. Thus the greatest number eligible for boarding-out are either quiet patients, doing no work, and requiring the minimum of hospital care, or else chronic cases, helpful to themselves and others, whose departure reduces the working force of the hospital." Page 88.

This view of the question is full of error. On the threshold it ignores the obligation of the State to do for the insane poor what is best for them, and to make their life as happy as it can be made. As regards a certain number of them—not inconsiderable—it may be safely said that every person having special experience in the care of the insane holds that they are happier out of, than in, asylums. All physicians act on that view, and so do all laymen. Every insane person is not sent to an asylum. Only those are sent who, in addition to being insane, require care and treatment in institutions. It is recognised on all hands that it would not be right to subject some insane persons to the loss of liberty and the irksome discipline which asylum life necessarily involves. If, then, it is not right to send to asylums persons in certain states of insanity, it is clearly wrong to continue to detain persons in asylums, who after a longer or shorter residence there, have passed into corresponding states of insanity. Whatever the number of these persons is—whether it is large or small—they ought not to be kept in asylums when they have ceased to need such detention, and when they can be provided for otherwise in a way which adds to their happiness. This should be a guiding view in State lunacy administration, even if the other way of providing for such persons led to some increase of cost. But it so happens that it diminishes cost and leads to saving.

It is not easy to believe that any one would seriously hold that it was right to keep persons in an asylum because they worked well and profitably—were good laundresses, were useful in the kitchen, gardened well, were good musicians, or were serviceable in other ways. This would be almost equivalent to holding that it would be proper to detain patients unnecessarily in asylums for gain to the asylum authorities,—that is, for gain to the State.

But it is desirable to point out that the removal of quiet patients who are good workers, and are able to be helpful to themselves and others, has not the effects which it is here alleged to have. This has been abundantly proved. When such patients are removed, this is what happens: it is found that there are other patients who can be induced to work. The set of good workers being sufficient in number, no serious effort is made to lead non-workers to become workers. They are not wanted, and a refusal to work is too easily accepted as a thing that cannot be got over.

In this way the removal of the incurable and harmless does good to those who are left, and tends to increase the number of recoveries.

XIV. OVERSEERS OF THE POOR HINDER THE GROWTH OF THE SYSTEM OF BOARDING-OUT.

(1) Before removing patients to private care, the "consent of the overseers of the poor must first be obtained," and they "prefer to care for them in their own almshouses." This is "a serious obstacle to the success of the system." Page 89.

(2) During the year ending March 31, 1896, "86 persons were discharged

to the overseers of the poor, most of whom were eligible for boarding in families." Page 89.

(3) "Were small towns forbidden by law to make their almshouses receptacles for the insane, the number of those boarded out would be largely increased." Page 89.

All this points to the necessity of fresh legislation.

(1) All the insane poor, *however provided for*, should be as much under the care of the State as those of them who are in asylums.

(2) No almshouse should be allowed to receive insane inmates which is not licensed to do so by some State authority—the licence being granted on well-considered conditions.

ASYLUM NEWS.

Derbyshire.—The Committee asked for power to extend the present county asylum at Mickleover so as to provide for 750 patients, as against 600 at present. This would involve an outlay of £21,000. During the discussion several speakers suggested the desirability of erecting a new asylum in the northern part of the county, which was very favourably regarded by those present.

Lancashire.—At the annual meeting of the Lancashire Asylums Board the Chairman moved the adoption of the Report of the Committee of Winwick Asylum, which stated that the tender of Messrs. Robert Neill and Sons for the erection of the new asylum for Winwick for the sum of £253,000 had been approved. The patients' blocks will be completed in about two and a half years, and the whole building in three and a half years. The report was confirmed.

The Clerk read the following resolution from the Preston guardians:—"That the asylum authorities be asked to put pressure upon all unions to make room for chronic harmless cases." Sir J. T. Hibbert said that if chronic harmless cases were put into the workhouses the guardians would not receive the 4s. grant for their maintenance. The County Councils Association were about to promote a Bill in Parliament to enable the union authorities to receive the grant for chronic harmless cases that were kept in the workhouses, just as they did for pauper lunatics in asylums. (Hear, hear.) Alderman Hulton said he had heard the statement of Sir John Hibbert with great pleasure. He hoped it would be a condition that only those patients who had been subject to probationary treatment in the asylum would be allowed to remain in workhouses. Sir John Hibbert said that would be so.

Mr. S. S. Brown (Pemberton) moved—"That this Board doth hereby undertake to remove the temporary buildings, to be erected in connection with the annexe at Rainhill Asylum, on the completion of the new asylum at Winwick, unless the sanction of the Secretary of State to their being used after the completion of such asylum be obtained." The resolution was passed. Mr. Brown also moved, "That a sum not exceeding £10,500 be granted out of the Asylums Fund for the erection of the temporary buildings at Rainhill." The motion having been seconded, Mr. Hoyle said he was very glad to hear that additional accommodation was to be provided. They were receiving censure from all parts. Only the other day the Coroner of Liverpool made some very strong remarks on the matter. Alderman Hulton said it seemed a great waste of money to spend £10,500 in buildings that would have to be done away with. Mr. Turner said they might be able to use them as permanent buildings, subject to obtaining the approval of the Secretary of State. Mr. Kenyon said he hoped they would not have to be swept away. They would need them and the new asylum as well. The resolution was adopted.

West Riding.—In order to meet the need created by an increase of insanity in the West Riding of late years, the Asylums Committee of the County Council are making preparations for the erection of an additional asylum capable of accommodating about 2000 patients. It was shown that whereas in 1887 there were

only 2951 patients in the two asylums then open for the receipt of patients (Wakefield and Wadsley), in 1896, ten years later, the three asylums at Wakefield, Wadsley, and Menston contained no fewer than 4152 insane persons. These figures are exclusive of out-county and private patients. Then, in addition, there were 1060 lunatics in the workhouses of the Riding in 1887, and 928 in 1896. To put it in another way, the returns for 1887 showed an increase of 105 in the asylums as compared with the previous year, whereas in 1896 an increase of 226 was recorded. If sixteen additional patients in the workhouses be included in the latter figure, the gross increase for 1896 will be seen to have been 242. The average of increases for the past ten years does not, it is true, give quite so startling a result, but an aggregate annual increase in asylums of 130 is calculated, nevertheless, to afford food for serious reflection. In the same report the Committee estimated that at the end of last year the total available accommodation at their three asylums (after deducting out-county patients) was as follows:—Wakefield, 18; Wadsley, 21; Menston, 191: total, 230. The hospital for acute cases now in course of erection at Wakefield would, it was stated, afford provision for 200 more, whilst by the removal of 147 persons to the proposed new private asylum room would be made for a further 100. At the most liberal computation, however, there could only be said to be places for 530 new patients in the asylums at the end of last year, and at the present rapid rate of increase all three institutions may be expected to be crowded within the next three or four years.

The scheme for the erection of the asylum for private patients is now under the consideration of the county council. It is intended to build it at Scalebor Park in the Wharfe valley, for the accommodation of about 170 persons. Besides the main building, separate villas, containing about twenty patients each, will be eventually added, so that the total number of beds will amount to 350. It is to be hoped that the rate of award will be kept within moderate limits, so that the poorer class will not be rejected from a hospital built at the expense of the ratepayers.

Radnor.—At the quarterly meeting of the Radnorshire County Council held on January 24th, the Visiting Committee of the Radnor and Brecon Joint Counties Asylum reported that the plans of the new asylum would be ready by September, when building would be commenced. The committee suggested that they should be authorised to continue the boarding-out arrangement at Abergavenny pending the erection of the new asylum. The report was adopted. £120,000 will be required for the new asylum.

Somerset.—At the meeting of the Somerset County Council held last week it was reported that £154,000 had been spent on the Cotford Asylum up to the present, and it was estimated that the total cost would be about £170,000. The number of patients at Wells Asylum was stated to be 293 males and 505 females; total, 798. Cotford Asylum has 188 males and 122 females; total, 310.

Warwick.—An epidemic has recently occurred at the Warwick Asylum which has taxed the resources of the institution to the utmost, and caused a great deal of local excitement, no doubt largely due to the fact that the disease was described as due to ptomaine poisoning. One attendant died. The coroner held an inquest, and sent the abdominal viscera to Dr. Stephenson for analysis, the inquiry being adjourned for four weeks. At the adjourned inquiry Dr. Stephenson appeared, and stated that he had examined all the viscera, but found no trace of poison whatever. Out of 29 ounces of matter he extracted $\frac{1}{4}$ part of a grain of basic material; with this he injected a mouse, but failed to cause the little animal any inconvenience. The jury thereupon brought in a verdict of death from natural causes.

I described the outbreak as one of an influenzal type, with marked abdominal symptoms. It was highly infectious, and spread with alarming rapidity. Between the 18th and 21st January there were fourteen cases; from the 22nd to the 27th inclusive 120; and between January 27th and February 12th forty. In addition

to this number my colleagues attended upwards of thirty cases occurring among the families of artisans living outside the asylum.

Fifty-seven attendants, thirty-eight artisans, and nearly one hundred of the patients were under treatment. I had a slight attack myself, both assistant medical officers, engineer, storekeeper, housekeeper, farm bailiff, and head laundress being also sufferers to a greater or less degree. I called in extra medical assistance and engaged four trained nurses, who looked after a large number of cases in the infectious hospital.

The disease was generally very sudden in its onset, sometimes being preceded by rigors. The most prominent symptoms were vomiting, diarrhœa, pains in back and limbs, high temperature, reaching 103° and 104° in a few hours, a crisis often accompanied by profuse perspiration; while among other symptoms may be noted coryza, pains at the back of the eyeballs, headache, sleeplessness, slight delirium, and transitory hallucinations. The vomited matter generally contained bile, and a marked icteric tinge was often present. A slight desquamation was noticed in many cases where the temperature was high. The average duration of fever was about seven days, the patients being very prostrate and weak, and in some convalescence was very protracted, pains in the limbs, general weakness, and tendency to neuralgia retarding recovery. In some cases diarrhœa was entirely absent, the disease being of the ordinary type. [Communicated by Dr. Miller.]

RESIGNATIONS.

We regret to notice that, on account of ill-health, Dr. Greene has resigned his position as Medical Superintendent of the Berry Wood Asylum, Northampton; but it is some consolation to know that his services have been highly appreciated by the Committee, and that they have set forth the facts and their conclusions in a succinct and well-reasoned document.

The Committee states that "Dr. Greene was appointed in 1878 to the office which he has since held with such distinction to himself and advantage to the county of Northampton. At that time the total number of patients in the asylum was 523, and the cost of maintenance per head per week was 10s. 6d. Since his appointment there has been an increase in the number of patients to 900. In addition to this it must be borne in mind that by gradually decreasing stages the cost of maintenance of patients per head per week has been materially reduced from the above-mentioned sum of 10s. 6d. to the sum at which it now stands of 7s. 6d. Taking the present number of patients as a fair average, this is equal to an annual saving of £5460. The Committee have thus been enabled by the excellence of the management to return to the county a sum of money in aid of the rates, which at the close of 1896 (and which has since been added to) amounted to no less a sum than £9803, while at the same time the Committee had in hand a balance at the bank to the credit of the Building and Repairs Fund Account of £4741 10s. 4d. There can be no question that the Committee have mainly to thank Dr. Greene for the administration which has led to such a conspicuous financial success. The above *résumé* of the results of Dr. Greene's service cannot be concluded without reference to another matter. For nearly twenty years, although many additions to the asylum and asylum buildings have been made, and notably a Fever and Infectious Diseases Hospital, a children's block (costing about £3500) and about fifteen residences for the staff have been built, and also a well (costing about £3000) has been provided, and sundry purchases of land have been made, without the county being called upon to pay any sum towards the same; moreover not one penny has ever been expended by the Committee on architect's fees, Dr. Greene having prepared the designs and superintended the buildings entirely by himself. He has also so managed that no demand has ever been made upon the county rate for maintenance and repairs. Dr. Greene has now, on account of ill-health, tendered his resignation to the

Committee, who are by the Act bound to give him a superannuation allowance based on his present salary and emoluments. Dr. Greene, previous to his appointment at Berry Wood, was for upwards of ten years a medical officer in an asylum; since that time he has for nineteen years and a half been Superintendent of Berry Wood Asylum. To the great regret of the Committee, it has now become their duty to consider what should be the amount of the superannuation allowance to be granted to Dr. Greene, on the basis of the scheme settled by the County Council in the year 1890. The Committee have unanimously decided to grant a superannuation allowance of £850 per annum."

Although the County Council were not unanimous in regard to the amount of the pension granted, there were apparently but three dissentients. The very handsome remarks made by those who had long experience of Dr. Greene's services amply compensate for this very small fly in the ointment. We join with the Committee in their expression of cordial thanks and approval on his retiring from public life.

We regret to note from the same report that Dr. S. A. K. Strahan has resigned his position as Assistant Medical Officer, and that his length of service did not entitle him to any retiring allowance. It is to be hoped that Dr. Strahan will continue his work in reference to mental diseases, and that he will not be lost to our specialty.

It should also be recorded that Mr. Mitchell, the head attendant of the same asylum, tendered his resignation after nearly twenty years' service, and was granted a superannuation allowance of £80 per annum.

THE AFTER-CARE ASSOCIATION.

Sir William Broadbent kindly permitted the annual meeting of the After-Care Association to be held at his house on 31st January, and took the chair himself. He made a few introductory remarks. The report was read by the secretary, and Dr. Savage, the Archdeacon of Westminster, Dr. White, and the Rev. E. S. Hilliard respectively moved, seconded, and supported the adoption of the report. The election of the officers and council was proposed by Mr. Deputy White and seconded by Dr. Norman Kerr, and carried unanimously, and the meeting closed with a vote of thanks to the Chairman and Lady Broadbent, which was proposed by Dr. Rayner and seconded by the Rev. Henry Hawkins, the originator of the Association. Two facts were universally acknowledged by the speakers: one that the year ending December 31st, 1897, has been the most prosperous and useful in the history of the Association; the other that the difficulties in providing employment for convalescents from mental disease are far in excess of those connected with any other form of redemption work. People more willingly employ the criminal discharged from prison than a cured lunatic. The need of the help granted by the Association is intense, and the form of help most beneficial is that which enables the patient to recover his strength in a convalescent home, and then gives him work. As one speaker remarked, "it is enough to drive anyone mad again to be discharged from the asylum, where he has had every comfort, to face the world penniless, dependent on his own exertions, and yet to have the door of so many occupations shut in his face on account of the nature of his recent illness." During the last twelve months 147 cases passed before the council, and the maintenance fund reached £561, a higher sum than it has ever done. The boarding out of convalescents in cottage homes in the country has been carried out with increasing success, and there is need of additional homes for this purpose. Higher rates are now paid per week for each boarder, and this has proved a wise expenditure. The Council has decided to appoint local secretaries, and a number of ladies and gentlemen have signified their willingness to act as such. This will save considerably in postage and working expenses. More convenient offices have been secured in the Church House, and efforts are being

made to make the work of the Association more widely known, and thus secure a larger number of subscribers. During the proceedings Dr. Mocatta promised a donation of £25 if a sum of £1000 was raised by other benefactions. The Rev. H. Hawkins closed the meeting with a sketch of the origin and growth of the Association, mentioning in the course of his remarks that the French society for the same object is far ahead of ours.

INFLUENZA AND ISOLATION.

The epidemic of influenza raises a question of vital importance. Is it possible by isolation to save the risk of infection? It seems to us that the Collective Investigation Committee might obtain an authoritative answer. The recrudescence of this plague year after year has opened a wide field of experience, and still opinion seems to be contradictory and chaotic. Isolated papers and letters, records in asylum case-books, and annual reports should be analysed and brought into focus.

FATIGUE IN SCHOOLS.

Mosso has pointed out that the fatigue curve was characteristic for each person, and that the amount of work done by a muscle could be expressed in terms of work as kilogrammetres; he showed, too, that mental fatigue, in so far as it affected the general nutrition of the body, could also be estimated in kilogrammetres. Acting on this suggestion, Dr. Kemsies has lately employed the ergograph systematically for a year in two large schools in Berlin. Curves were taken before and after lessons, and the particular lesson was noted. The general result of these experiments was that the pupils showed greatest fatigue after gymnastics. With regard to mental exercises, mathematics headed the list; then came foreign languages, religion, and history; natural history showed least fatigue. A specimen of a day's experiments is as follows:—After nine hours' sleep, 5657 kilogrammetres; after one hour lecture, afternoon, 4086 kilogrammetres; after walk and bath, 5282 kilogrammetres; after evening lesson, 4094 kilogrammetres. The fatigue passes off again after two hours from its commencement if the lesson has been changed.

MESCAL.

Mr. Havelock Ellis has, in the *Contemporary Review*, lately recorded the effects of mescal (*Anhalonium Lewinii*) upon two poets, an artist and himself, as Dr. Weir Mitchell did so fully in the *British Medical Journal* of December, 1896. The colour sense in the insane is not infrequently affected painfully or agreeably. It is common to hear complaints that everything looks black or grey in melancholia, and sometimes red is predominant in the ideas and conversation. We are not aware that mescal has been given in these conditions.

WANDERING LUNATICS.

The city coroner of Liverpool, Mr. Sampson, has lately drawn attention to the fact that there is no suitable provision for dealing with persons suffering from the milder forms of mental aberration, and who, while they show no definite marks of insanity, are unable to give any satisfactory account of themselves, and are clearly in a condition in which insane impulses might at any time arise with grave danger either to themselves or to others. Such persons are frequently found by the police wandering at large, and are then conveyed to the bridewell and examined by a medical man. If they are found to be unable to take care of themselves, and yet the medical man does not feel justified in certifying them and there that they are insane, it is manifest that, in the interests both of the sufferers themselves and of the public, they should be retained in some suitable

place until the cause and nature of the mental aberration can be ascertained. Until recently no serious difficulty in dealing with such cases has arisen, since they have been received into the workhouse on a doctor's note, and there dealt with as the occasion demanded. Latterly, however, the authorities of Mill Road Infirmary have declined to receive them, owing, it is stated, to there being no accommodation in the workhouse for the alleged lunatics; and there has been no alternative but to take them back to the bridewell, where there is no proper provision for attending to them, and to bring them before the presiding magistrate the following day. As these persons are not charged with any offence for which they can be committed to goal, there is no alternative but to discharge them.

It is high time that reception houses for all cases of supposed insanity were established in the great centres of population. The Barony Parish of Glasgow has set apart observation wards in the ordinary poorhouse to meet this difficulty, and we understand that good results have been obtained there, not only for the individuals, but also for the ratepayers.

LABORATORY OF THE SCOTTISH ASYLUMS.

The first annual report deals with a period of seven weeks. Four assistant medical officers had received a course of instruction, and reports had been made on material from six cases. The superintendent has entered on his duties with great zeal and ability, and has visited four asylums for the purpose of advising, besides aiding in research. The work in hand has been very varied, and Dr. Robertson is at present engaged in the study of the changes affecting the nerve cells in insanity. He states that the premises are well suited for the purpose. No doubt his report for next year will bear evidence of much good work accomplished in the same spirit as he has begun.

THE CASE OF REV. H. J. DODSWELL.

It is reported that the Home Secretary has decided not to interfere in this case. A petition was lately presented for Mr. Dodswell's release, on the grounds that the maximum punishment for the offence of which he was convicted had long since expired, and that if he was still considered insane he should now be detained in a private, not a criminal asylum. We heartily approve of the Home Secretary's decision.

FRAGILITY OF BONES IN THE INSANE.

A patient in the Cork Asylum lately died, after it was found that several of his ribs had been fractured. Dr. Oscar Woods caused an expert examination of the bones to be made, with the result that they were proved to be excessively degenerated and fragile. It would seem that such observations should put an end to the loose statements occasionally made in a contrary sense.

THE RISKS OF ASYLUM LIFE.

Dr. J. A. Campbell lately addressed a letter to the *Lancet*, in which he showed how many hardships are endured by those engaged in the treatment of bodily and mental disease. He traced the life-history of a medical man through his training to practice, and alluded to the risk of infection at post-mortem examinations or in fever wards. He specially drew attention to the services rendered by army surgeons and their inadequate recognition, and stated that he had asked for particulars as to injuries, &c., from forty-five English asylums in 1897. Dr. Campbell found that several medical officers had been seriously attacked. Lately two have had to retire owing to the results of injuries inflicted by patients. He referred to the murder of Commissioner Lutwidge, the narrow escape of Dr. Wigglesworth, and the injury to Dr. Merson. We congratulate Dr. Campbell

on having survived after having been attacked by a patient, scythe in hand, by a patient with a knife, and by a patient with a stone, in the course of his thirty-two years' service; and join with him in believing that if the public were aware of such facts they would be more liberal in dealing with asylum officials.

A QUESTION OF CONVENIENCE.

Dr. J. A. Campbell also suggests that some arrangement should be made to economise time and effort by fixing the meetings of Council of the Medico-Psychological Association for the same week as the Council of the British Medical Association, especially as the first-named are now often held in London. This suggestion deserves the most careful consideration, and it will no doubt be laid before the Association at no distant date.

SANITARY APPLIANCES.

Mr. John Lanyon, of Belfast, who has attained eminence in his profession as an architect, and whose plans for asylums have been so favourably commented upon, has sent us drawings and model of an "Anti-fouling and Contagion Water-closet," which is a new pattern of the ordinary "wash-down." Mr. Lanyon has designed this sanitary appliance with full knowledge of the requirements of public buildings, and it is largely in use in mills, warehouses, &c. Messrs. Shanks and Company, Barrhead; and Messrs. Johnson Brothers, Trent Pottery, Hanley, are the makers.

Mr. Lanyon has also designed a slow combustion stove, which shows three bright fires, burns the impure air of the room, and distributes fresh heated air. It has been tested by the Army Medical Staff in Belfast, and favourably commented on.

A new waterproof fabric has been placed upon the market by the Pegamoid Company, 144, Queen Victoria Street, London, E.C. It has many advantages, and should have a careful trial in asylums.

COMPLIMENTARY.

We observe that Professor Ludwig Meyer of Göttingen attained his seventieth birthday on the 27th December last. We heartily join in the congratulations with which the event was greeted by his many friends. The name of Conolly was brought into prominence on the occasion, for Professor Meyer has devoted his long official life to a consistent effort to work on the principles Conolly laid down, and to induce his colleagues to adopt his practice.

We have also to congratulate Dr. G. Marriott Cooke on his promotion to Whitehall. Dr. Cooke had the advantage of serving under the late Dr. Sherlock, and has maintained the Worcester Asylum at a high level of excellence. He has taken an active interest in the affairs of the Medico-Psychological Association, and his many friends, especially those of our specialty, have every confidence in Dr. Cooke's ability and desire to forward the best interests of the insane and those responsible for their welfare.

Another honour has been done to a distinguished member of our department of medicine. Sir John Batty Tuke has been raised to the knighthood in recognition of his long and brilliant services. We wish him many and happy days, and look forward with much interest to the Address on Psychological Medicine which he is to deliver at the Edinburgh meeting of the British Medical Association.

Obituary.

JOHN AUGUSTUS WALLIS.

We regret to have to record the death of Dr. John Augustus Wallis, one of the English Commissioners in Lunacy, which took place on the 30th December last. He had not been in robust health for some time. During the last year or two he had experienced several rather alarming attacks of heart failure, and had often expressed to his friends the opinion that he should not live long. Some months before his death he had consulted an eminent London physician, whose opinion had somewhat reassured him as to the state of his heart, and for a time he was much better. A few weeks before his death, however, he had a return of the symptoms, and on one or two occasions had attacks of an anginous character. At the time of his death he was staying at the house of his mother-in-law in Hull, and on the morning of December 30th, not feeling so well, he remained in bed, and was visited by a medical friend, who prescribed for him, but did not regard his condition as immediately dangerous, and there was nothing to suggest the somewhat sudden and unexpected termination. He was getting out of bed about noon, when he dropped down and expired from heart failure.

The deceased gentleman was a native of Cornwall, and received his early education at Falmouth. Subsequently his family removed to the south of Ireland, and he was sent to school in Belgium, where he remained for some years, acquiring a familiar knowledge of the French language, which he spoke throughout life with the ease and fluency of a native. He studied medicine in Dublin, and obtained the diplomas of L.R.C.S.I. and L.R.C.P.E. in 1866. Subsequently he became a graduate of the University of Aberdeen, where he took the degrees of M.B. and C.M. in 1875, and that of M.D. in 1883.

After qualifying in medicine he engaged for a short time in general practice, but in 1867 he was appointed assistant medical officer at the Durham County Asylum, and from that time he devoted himself to the study and treatment of insanity. He remained at the Durham Asylum for nearly seven years, and after leaving he travelled on the Continent and in the United States for the purpose of studying the condition of the insane, and the various provisions made for their care and treatment. On his return to England he became attached to the West Riding Asylum at Wakefield, then under the superintendence of Dr. (now Sir James) Crichton Browne. After a short residence there he was appointed in 1875 superintendent of the Hull Borough Asylum, which was at that time an old building situated inside the boundaries of the city, and very ill-adapted to its purpose. From the time of his appointment Dr. Wallis never ceased to urge upon the authorities the necessity of making some better provisions for the care of their insane patients, and at length he had the satisfaction of seeing a site for a new asylum purchased, and plans put in hand. The present building was subsequently erected from designs prepared by a local architect under his directions.

In 1878 he was appointed Superintendent of the Lancashire County Asylum at Whittingham, where he had greater scope for the display of his practical knowledge of asylum construction, and of the needs of the insane. For fifteen years he continued at the head of this large establishment, and under his management many important additions and improvements were effected. At his instigation the Lancashire Asylums Board determined to erect a special hospital for the treatment of recent cases at Whittingham, and plans for such a building had been prepared under his direction, when he was appointed a Commissioner in Lunacy on the resignation of Mr. Cleaton in 1894.

Dr. Wallis was a man of undoubted ability, and, though not a voluminous writer, he made some practical and thoughtful contributions to medical literature.

He was the first to call attention to the value of chloral in the treatment of epilepsy, and wrote an able paper on the subject in the *West Riding Asylum Reports*. He made a special study of the housing of the insane, and was anxious to see more thorough provision made for the early treatment of recent cases. He was the author of a valuable article on "The Treatment of Recent Cases of Insanity in Special Hospitals," contributed to this JOURNAL in 1894.

He was a man of broad sympathies and of benevolent disposition, generous, and kind-hearted almost to a fault, ever ready to encourage and assist those who needed sympathy or help. His old colleagues, and many others who knew him well, can recall many acts of practical sympathy and kindness towards those with whom he was brought into contact. As a superintendent he was eminently successful. His genuine kindness of heart and sympathetic manner endeared him to his patients, and his relations with those under his authority were always of the happiest kind. He took great interest in the welfare of attendants and nurses, many of whom have cause to remember him with gratitude. In private life he was a great favourite, being the life and soul of the circles in which he moved. Of late years, however, he went very little into society, leading, apart from his official duties, a somewhat retired life, and devoting himself to the supervision of his sons' education.

He married, in 1879, Louise, youngest daughter of the late T. W. Pearson, of Hull. His wife predeceased him about five years ago, but he leaves a family of four sons, to whom his comparatively early death will be an irreparable loss.

RINGROSE ATKINS.

By the demise, on the 4th of February, of Dr. Ringrose Atkins, Medical Superintendent of the Waterford District Asylum, at the early age of forty-seven, a striking personality has passed from amongst us. The call was startling in its suddenness, and many friends were hardly aware of his illness when the tidings of its fatal termination reached them. On Tuesday, the 1st, he began to feel the premonitory distress of the illness which was to carry him off so swiftly, notwithstanding which he went out in the afternoon to visit a lady. While in her house he was seized with more acute symptoms of the malady, and only reached home with difficulty. On Friday morning, after two days of intense suffering, he breathed his last, death being due to perforation from acute appendicitis, associated with the passage of a renal calculus.

A wave of genuine sorrow spread over all classes in the city of Waterford when the sad news became known. For Atkins was no ordinary man. His was a character rich, unique, and rare. In him intellectual talents of a high order were united to a sympathetic nature, generous feelings, and nobility of soul. And all were freely placed at the disposal of his fellow-men without distinction, high-born and humble, rich and poor. Wherever his help was needed that help was given; first of all to those who were his special charge, for towards the insane he always had a feeling of kindest interest, which even in maimed and shattered minds struck an answering chord, as was shown by the greeting of welcome he used to receive as he passed on his daily round through the wards. He never wearied in his efforts to cure or alleviate, and devoted a large portion of his time to entertaining his patients with his interesting lantern lectures, seaside excursions, and amusements of various kinds. And while, as he always did, making his patients the subjects of scientific observation, he never forgot that he was dealing with human souls. Outside his asylum work he was a leader in every good cause, and his labours in connection with the Young Men's Christian Association, of which he was President, and in furtherance of the cause of temperance, will not soon be forgotten.

Dr. Atkins sprang from a well-known Cork family, which contributed many members to the medical profession, including his paternal grandfather, his brother,

Dr. T. G. Atkins, a leading physician and surgeon in his native city, and other relatives. His father, William Atkins, was a leading architect in Cork, and also an artist, having studied in the various Continental schools. It was he who instructed young Atkins in early life, and from him, no doubt, he both inherited and acquired his artistic tastes, and his love of and knowledge of architecture. One of the earliest reminiscences of his childish talent was his painting a diorama of Switzerland, and lecturing on it, when he was only ten years old. His acquaintance with architecture he turned to good account in his asylum, as all structural operations he kept under his direct supervision, and was fond of saying he liked to know how every brick was laid. From his father also he probably inherited his love of travel, amounting in his case almost to a passion, which, happily, he was able to indulge to no ordinary degree. Of science he was not one whit less enamoured than of art; science and art, like twin sisters, seeming to have almost equal claims on his homage and affection. To these endowments he added a quite exceptional manual dexterity, coupled with mechanical skill, which found abundant room for exercise in the surgical part of his professional work, and in the operations connected with histology and photography, in both of which he was an adept. Inspiring all these natural gifts was a spirit of indomitable industry, which never flagged up to the closing hours of his busy life.

Educated in Queen's College, Cork, after a distinguished course he graduated in the Queen's University with honours, winning the gold medal for experimental physics at the early age of seventeen. He took the M.A. degree in 1871, and those of M.D. and M.Ch. in 1873. He obtained his first experience in lunacy practice as assistant medical officer in Cork Asylum, and in 1878 he was appointed Medical Superintendent of the Waterford District Asylum, which post he held till his death. During this prolonged period his relations with his patients, his Board of Governors, and the public were of the happiest kind. From an early stage in his career he was busy with pen and pencil, writing articles which he illustrated with his own drawings, which were of such exceptional merit as to draw from no less an authority than the illustrious Charcot words of generous commendation. Among his contributions to medical literature may be mentioned his Pathological Illustrations of Localisation of the Motor Functions of the Brain, and his papers on Arterio-capillary Fibrosis, On Morbid Changes in the Blood Vessels and the Nerve Elements of the Brain of the Insane, and the Morbid Histology of the Spinal Cord in Insanity. His articles reviewing the progress of nervous and mental disease, which regularly appeared in the *Dublin Journal of Medical Science*, showed a wide acquaintance with the literature of his speciality both at home and abroad. He was a Fellow of the Academy of Medicine and a member of the Medico-Psychological Association since 1875. He also assisted Dr. Macnaughton Jones in founding the premier branch of the British Medical Association in Ireland, and in conjunction with him worked hard to make the Cork meeting of the Association a success.

To spend even one hour with Atkins was a liberal education. His thoughts sped swiftly on winged words. Whether forming one of an audience, or, more delightful still, chatting on into the small hours of the morning, one could only feel amazed at the wealth of his information, as he poured forth out of the treasure-house of his marvellous memory things new and old. New—for he kept himself well abreast of the most recent discoveries of science, which he could discuss with an ease and grasp unusual in one who lived so far apart from the great centres of thought; old—for he never was happier than when he was studying, photographing, or describing to friend or audience the ancient relics of hoary antiquity. In every tour he made there was an earnest purpose to fulfil. To enlarge his knowledge, and gain fresh insight into the habits and customs, the architecture, the geological features, the historical associations of the countries he visited, was to him a definite aim. His lectures on such subjects were remarkable for the phenomenal memory which they displayed, and the absence of the slightest falter or hesitation. They were

invariably illustrated by his own exquisite lantern slides, which, as regards technical excellence, were perfect, but had, in addition, an artistic quality which is only rarely noticeable in the work of the professional photographer, and which gave them a peculiar charm. He was an ardent Egyptologist; in fact, it was one of his special studies, and his photographs of the interiors of some of the pyramids, and of hieroglyph and cuneiform inscriptions, are probably some of the best that exist anywhere. His enthusiasm for this branch of archæology nearly cost him his life on one occasion, when he was all but smothered while exploring the recesses of a pyramid in order to photograph it by magnesium light, a suffocative attack, to which he was at times subject, having come on just at the wrong moment.

There was one other feature in Atkins' many-sided character which must not be omitted from this imperfect sketch, as it coloured his whole life. He was a profoundly religious man. The combination of an ardent love for science with strong religious convictions is not a very common phenomenon in these days. And, perhaps, of all the sciences, psychology least of any tends to encourage stability of belief. Faraday, we know, kept his science and his religion apart. Conscious of the difficulty of reconciling things which often seem hopelessly incompatible, he, as it were, assumed a different mental posture, according as he was engaged with one or the other, and thus, no doubt, escaped mental conflict. With Atkins it was wholly different. In him religion and science were intimately interwoven, and though the former was never aggressively thrust into prominence, it could be seen that it underlay his whole life and conduct. He never seemed to be troubled with doubts or difficulties; possibly he may have had some—who is there that has none—but they did not come to the surface. An explanation of this, perhaps, may be found in the fact that, if we may judge from his writings, his attention was directed rather to the neurological than the psychological aspects of insanity. His mind was so constantly engaged with such concrete subjects as neuro-pathology, clinical observations, asylum administration, &c., his hobbies also being of a practical sort, that he probably gave but little time to the consideration of purely abstract problems, those "obstinate questionings" which have vexed the souls of many, and in not a few have made shipwreck of their faith. His was the large and liberal and eminently practical Christianity which embraces all mankind, and sympathy with suffering of any and every kind was the key-note of his being—a sympathy which always had some outlet in action, whether in administering relief with skilful hands to bodily suffering, or on his knees at the bedside assuaging mental anguish with words of consolation, and binding up the broken heart.

The following tribute from one of those best qualified to speak on this subject may fittingly conclude this outline:—"I did not like the man, I loved him; for his genuine nature, his childlike mind, his great culture. He was a truly disingenuous soul, affectionate, true, sympathetic; a delightful companion, a charming conversationalist. His was the versatile sort of brain. Yet there was both quantity and quality. I knew him as the enthusiastic pupil, the ardent and indefatigable worker, the impulsively warm friend, the keen scientist. I knew him through a period of cloud and sorrow, and his Christian and forgiving spirit. To none a resentful thought, to none a harmful act. One is tempted with Arnold to exclaim, 'Oh, strong soul, by what shore tarriest thou now?' Surely to thee it is given to help, to comfort, to strengthen; and not for ever blotted out is the bright intellect that we knew, and the loving soul that we have lost."

A character deep but translucent; a life simple yet full, not without an element of grandeur. Like the sun of a tropical day our friend has suddenly, alas! passed beyond our visual horizon, and has, we fain would hope, reached the clear daylight of a higher existence, a larger life. The memory of him will not die. On those who mourn his loss—and they are many—there lingers a warm sunset radiance, the afterglow of a noble life, cheering, brightening, elevating, casting the backward reflection of a tender glory over the path he trod, that path of the

just which, we are told, is as "a shining light, that shineth more and more unto the perfect day."

Sic itur ad astra.

ERNEST HART.

We deeply regret to chronicle the death of Mr. Ernest Hart. Although his own personal interest lay chiefly in matters connected with Public Health, and his editorial duties led him into every department of Medicine, he was ever alive to the claims of our specialty. In his official capacity as editor of the *British Medical Journal*, and as Chairman of the Parliamentary Bills Committee of the British Medical Association, he was always accessible and willing to lend us a helping hand. Mr. Hart's energy and enterprise were unbounded; his determination to leave the world better than he found it was worthy of all praise. We might object to certain incidents in his career and certain methods in his working; but when the measure of his achievements is reckoned, his mistakes are obliterated by a sense of his personal worth, and the loss which the medical profession has sustained by his death.

THE LIBRARY.

The Library Committee asks for the following to complete sets, viz.—
Reports of the Commissioners in Lunacy for England and Wales for the years 1847, '48, '49, '64, and '74.

Reports of the Scottish Commissioners, Nos. 3, 4, 6, 8, 10, 11, 13, 18.

American Journal of Insanity for the year 1886.

Archives de Neurologie for the years 1874-5-6-7, and 1887.

L'Encephale, from 1888.

Allgemeine Zeitschrift für Psychiatrie. Complete set wanted.

Annales Médico-Psychologique, 1864-5-6.

NOTICES BY THE REGISTRAR.

At the examination for the certificate in Psychological Medicine held on December 16th, 1897, the following candidates were successful:

Examined at *Bethlehem Royal Hospital, London*.—Oscar Bernard Goldschmidt, William John Handfield Haslett, Robert Hughes, George McGregor.

Examined at the *Royal Asylum, Morningside, Edinburgh*.—Charles Cromhall Easterbrook, G. Landsborough Findlay, Donald A. Macvean.

Examined at the *District Asylum, Cork*.—Lucia Strangman.

The following is a list of the questions which appeared on the paper:

1. How would you treat persistent insomnia (a) in passive melancholia; (b) in melancholia with excessive bodily movement; (c) in acute mania? 2. What forms of mental disease are associated with a previous history of syphilis? How far do you consider general paralysis of the insane to be due to syphilis? 3. Enumerate the principal varieties of mental disease arising from alcoholic excess, and give the distinguishing physical symptoms of each variety. 4. Give examples of mental and physical causes of refusal of food, the prognosis in each, and the indications for treatment. 5. Distinguish between idiocy, imbecility, dementia, and stupor, and give the best recognised classification of idiocy. 6. Compare the changes in the brain cells which have been described as characteristic respectively of parietic, senile, and alcoholic dementia. To which conjecture as to the mode of origin of these respective changes do you incline, and why?

The next examination will be held in July, 1898.

The examination for the Gaskell Prize will take place at Bethlem Hospital in the same month.

The exact dates for these examinations have not yet been fixed, but will be advertised in the medical papers in due course.

Competitors for the Bronze Medal and Prize of Ten Guineas must send in their essays to the President before 30th May, 1898.

The following candidates were successful at the November examination for the Nursing Certificate in addition to those published in the JOURNAL for January, 1898:

Valkenberg Asylum, South Africa.—Female: Ellen Kenny.

Port Alfred Asylum, South Africa.—Females: Fanny Maud Barnes, Louisa Annie Jane Evans, Edith Adeline Woods. *Male:* Valentine Muller.

NOTE.

As the names of some of the persons to whom the Nursing Certificate has been granted by the Association have been removed from the Register, Employers are requested to refer to the Registrar in order to ascertain if a particular name is still on the Roll of the Association. In all inquiries the number of the Certificate should be given.

For further particulars respecting the various examinations of the Association apply to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

The Annual Meeting of the Association will take place in Edinburgh, under the presidency of Dr. Urquhart, towards the end of July, and as the Annual Meeting of the British Medical Association is also to be held in Edinburgh, it is considered that probably Thursday or Friday (or both), July 21st and 22nd, may be the most convenient dates, so as to enable members to attend both congresses.

As the success of the meeting depends upon the contributions of individual members, it is desirable that notices of discussions, exhibits, or papers to be read, be received at an early date, in order that the necessary arrangements may be made, and that facilities may be afforded to members seeking accommodation in Edinburgh during the meeting.

Notices of papers to be read or of intention to be present should therefore be sent as soon as possible to Dr. Turnbull, Hon. Secretary for Scotland, District Asylum, Cupar—Fife.

General Meeting.—The next General Meeting will be held at the rooms of the Association, 11, Chandos Street, Cavendish Square, London, W., on Thursday, May 12th, at 4 p.m., under the presidency of Dr. T. W. McDowall.

South-Western Division.—The Spring Meeting will be held in the County Asylum, Littlemore, Oxford, on Tuesday, the 19th April, 1898. The proposed alterations in the nursing regulations and the question of assured pensions will be discussed. Dr. Sankey will show cases, Drs. Noott and Blachford will contribute papers.

South-Eastern Division.—The next meeting will be held at the Wandsworth Asylum on the second or third Wednesday in April, 1898.

Northern and Midland Division.—The next meeting will be held in May, 1898.

BRITISH MEDICAL ASSOCIATION.

The sixty-sixth Annual Meeting will be held at Edinburgh from the 26th till the 29th July, 1898, under the presidency of Sir Thomas Grainger Stewart. Section of Psychology:—President, Thomas Smith Clouston, M.D. Vice-Presi-

dents, William Wotherspoon Ireland, M.D., H. F. Hayes Newington, M.R.C.S., Joseph Wiglesworth, M.D. Honorary Secretaries, John Macpherson, M.D., Stirling District Asylum, Larbert, Stirlingshire; George M. Robertson, M.B., District Asylum, Murthly, Perth.

THE NINTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY

will assemble at Madrid from the 10th till the 17th April, 1898, under the presidency of Professor Julian Calleja, of Madrid. The General Secretary is Dr. Amalio Gimeno, of Madrid.

APPOINTMENTS.

BRAINE-HARTNELL, G. M. P., M.R.C.S., L.R.C.P., has been appointed Medical Superintendent of the Worcester County and City Lunatic Asylum.

BUBB, WILLIAM, M.R.C.S., L.R.C.P., has been appointed Deputy Superintendent and Senior Assistant Medical Officer of the Worcester County and City Lunatic Asylum.

CAMPBELL, ROBERT B., M.B., C.M., has been appointed Senior Assistant Physician of the Montrose Royal Asylum.

COOKE, E. MARRIOTT, M.B.Lond., M.R.C.S., has been appointed Commissioner in Lunacy, vice J. A. Wallis, M.D., deceased.

ELKINS, F. A., M.D., has been appointed Medical Superintendent of the Leavesden Asylum, King's Langley, Herts.

LORD, J. R., M.B., C.M., has been appointed Assistant Medical Officer of the London County Asylum, Hanwell.

MIDDLEMASS, J., M.B., C.M., F.R.C.P.E., has been appointed Medical Superintendent of the Sunderland Borough Asylum.

PULFORD, HERBERT, M.A., M.B., B.C.Cantab., has been appointed Second Assistant Medical Officer of the Worcester County and City Lunatic Asylum.

ERRATUM.

January number, page 140—for Clonnel read Downpatrick.

THE JOURNAL OF MENTAL SCIENCE.

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NEW SERIES,
No. 150.

JULY, 1898.

VOL. XLIV.

PART I.—ORIGINAL ARTICLES.

*Insanity in Children.**—By FLETCHER BEACH, M.B., F.R.C.P.
Lond., Physician to the West End Hospital for Nervous
Diseases; formerly Medical Superintendent of the
Darenth Schools for Imbecile Children.

ALTHOUGH ancient writers have given short descriptions of mental diseases affecting children, it was not until the commencement of this century that the subject began to attract attention. Since then Esquirol, Guislain, Delasiauve, and others have written on the matter, and in 1856 Le Paulmier, in a thesis, gave the most complete description of the affection which had previously been published. Numerous authors in England, Germany, and France have since 1856 written on the subject, but still there seems to be a good deal of want of knowledge regarding the mental affections of children.

The young child is a creature of emotion and of lively imagination, and he usually has a good memory, but it is often difficult to fix his attention for a long time on a subject, and he lacks reason and reflection. As a matter of fact, the child is guided in his conduct by instinct or by sentiment, but his sentiments are usually fickle and changeable. Up to seven years of age mania is comparatively rare, and when it exists shows itself chiefly under the form of a maniacal excitement or delirium, frequently coming on with febrile attacks. The moral sense becomes early depraved, and if the affections are not well developed, it later becomes true insanity. As the child grows up the bad inclinations become stronger, and when puberty comes on there is a furious out-

* Read at the South-Eastern Division at Northampton, October 13th, 1897.

burst, and a slight cause will be sufficient to excite the patient to commit homicide.

What are the causes which produce these troubles in infancy and childhood? Want of time will only allow me to touch upon a few of them.

The first and most important is that of *heredity*. Esquirol is of opinion that of all diseases insanity is the most hereditary, and other psychologists have confirmed his observations, and some have even exceeded him in their estimates of the number of cases in which insanity is due to hereditary taint.

We must also take into account the metamorphoses or transformations of heredity. Dr. Moreau, of Tours, has made an extensive study of the subject, and in his "Psychologie morbide" he gives several cases of the transformation of heredity taken from pathology and history. "We must not," he says, "look for a return of identical phenomena in each generation. . . . A family whose head has died insane or epileptic does not of necessity consist of lunatics or epileptics; but the children may be idiots, paralytics, or scrofulous. What the father transmits to the children is not insanity, but a vicious constitution which will manifest itself under various forms, in epilepsy, hysteria, scrofula, and rickets." He goes on to say, "Just as real insanity may be hereditarily reproduced, only under the form of eccentricity; . . . so a state of simple eccentricity in the parents may in the children be the origin of insanity." As an instance of this he gives the family history of a boy aged ten years.

Paternal line.—Grandfather intemperate and immoral, notwithstanding his advanced age. Grandmother very nervous, lively, peevish, jealous.

Maternal line.—Grandfather intelligent, without energy, easily influenced by the first comer, and by his eccentricities excites the laughter and jests of his neighbours. Grandmother very obstinate, imperious, extremely violent. Towards the end of her life she delighted in ill-using persons and things. Father.—Feeble in character, proud, subject to fits of violence, ideas vague and slow of development, intemperate. Mother.—Very intelligent, meek, hard-working.

Brothers and sisters of the patient.—The eldest whimsical, uncommunicative, of slight intelligence, simple-minded.

2nd.—The patient.

3rd.—Very simple in character, her simplicity contrasting strongly with the wickedness of most members of the family.

4th.—Of the same character as the patient, but he has not yet had fits of violence.

5th.—An intelligent girl, but eccentric in her tastes.

The patient's intelligence was well developed. One day he went into a vineyard to steal some grapes. Surprised by the field keeper, he was taken before the proprietor, whose remonstrances made such an effect on his mind that from this time he showed symptoms of insanity. He ran quite naked through the streets, armed with a stick with which he struck children without any reason. He was sent to school, but was so lazy that he was sent home again. Next he was sent to a home, whence he escaped, his arrival at his parents' house being announced by the burning of a straw rick to which he had set fire.

The faculty of *imitation* plays an important part, especially when the imitator is a neurotic person. In this case there is, one might say, a ground prepared to receive the impression. There is an instance on record, many years ago, at the time when a number of children were taking their first communion, of one of them being attacked with convulsions, and in less than half an hour all, or almost all, were attacked with similar convulsions. This faculty of imitation is so imperious in certain individuals that they cannot see any action, or hear of one, without being disposed to imitate it. The most formidable imitations are those of suicide and homicide.

A boy aged fourteen years was of a lively and happy disposition. On the day on which he died he was happy and contented. Some days before he had attended the funeral of a playfellow who had committed suicide, and he was heard to say playfully, "I must kill myself too." He came some time afterwards to the place where his friend had committed suicide. The sight of a cord, the suitability of the place, struck him, and he realised the idea which he had previously expressed.

Prosper Lucas relates the case of a child of from six to eight years of age, who had choked his youngest brother. The father and mother surprised the boy in the act. The child threw himself into their arms crying, and said that he had only done it in imitation of the devil whom he had seen strangle Punch.

There is no doubt that the great publicity now given in the newspapers to murder is the cause of many similar crimes. A person with a weak or ill-balanced mind sees in the newspapers reports as to the health of the murderer, his

conduct and behaviour, and endeavours to acquire notoriety by committing a similar crime. A *severe shock or fright* is well known to be the cause of convulsions, and it may also originate a mental affection. Chorea is often produced by a severe fright. Esquirol mentions the case of a young girl, aged eight years, who saw her father murdered. Since then she had often suffered from violent terror; at the age of fourteen the menses appeared, but only irregularly; she became maniacal, and wished to fight everybody. The sight of a weapon, a knife, or of many men assembled together was sufficient to excite in her the most violent fury.

Excess in study is a very active cause. The late Dr. Hack Tuke read a paper entitled "Intemperance in Study" at the annual meeting of the British Medical Association, held at Cork in 1879, in which he pointed out that brain-fag, mental excitement, depression of spirits (sometimes suicide), epilepsy, and chorea were produced by over-study. In these days, when so much attention is paid to exercise and athletics in schools, at first sight one would think that this statement could not be true, but he mentioned a case of mania from this cause which came under his notice, and which had to be confined to an asylum, and he had seen several cases of suicidal melancholia brought on by overwork. As he truly said, "no doubt worry has a great deal to do with the production of the disease, but the real cause is that the school-boy has to master too many subjects in too short a time." Many of these cases are kept at home and seen in consultation practice, and therefore do not appear in lunacy statistics.

The establishment of *puberty* plays a very important part; as Esquirol says, "the troubles of menstruation are one of the most frequent causes of insanity." In ancient times Hippocrates noticed that puberty was often the cause of mental disorder. He mentions the case of a young girl whose "visions order her to jump, to throw herself into wells, to strangle herself; . . . when there are no visions there is a certain pleasure which makes her long for death as something good." No doubt there is an hereditary tendency to insanity in these cases, for, as we all know, menstruation is established without much trouble in the great majority of the human race. Rousseau has pointed out the normal and morbid phenomena which take place at the moment of transition from infancy to adolescence. The establishment of puberty can, he says, "provoke accidents capable of being translated

into all forms and all degrees of neuroses, from spasm and convulsion up to delirium, and even stupor." According to him mania is more frequent than melancholia at this epoch. "The young boys," he says, "are generally loquacious, endowed with remarkable activity; they are fond of boasting and bravado; they wish to undertake everything, they commence many things, but accomplish nothing. The delirium of young girls is less brilliant; they are gay, frolicsome, and eager to fix attention on themselves; their mobility is excessive, and they pass with surprising facility from extravagant laughter to most abundant tears." He is of opinion that when melancholia does supervene the religious and erotic forms are the most common at puberty.

Masturbation is an important factor. Very often this pernicious habit is due to instruction by a nurse of vicious principles. An instance is on record of a young girl, twelve years of age, who was initiated by a servant into this odious practice, and she then taught her brother. They were separated, and the girl sent to a convent, the boy to school, but they later led a most dissolute life. While still young the boy blew out his brains.

In some cases the habit is due to a vicious boy introducing it among his schoolfellows. Very often masturbation is denoted by a blue circle round the eyelids, a weakening of the senses, especially of sight, and of the digestive organs, a feeling of lassitude, emaciation, and feeble circulation. These symptoms are followed by nervous affections, epilepsy, and finally, mental disease. Many of my out-patients at the West End Hospital come to me suffering from utter prostration and nervous weakness as the result of this practice, and more than one has threatened to commit suicide. In all these children there is a change of character; there is a disappearance of the joyfulness which is one of the principal attributes of youth, and the propensity is often the cause of atrocious perversion of the affective faculties. Sensibility is profoundly injured, and hence melancholia is the form which most commonly occurs as a result of this practice.

Intoxication by alcohol is occasionally a cause, and Magnan describes children, aged nine and thirteen, who were afflicted with the vice of drunkenness. Gemme quotes a series of cases of delirium tremens in children. The parents were drunkards, and supplied liquor to their offspring. Four children suffered from epilepsy in consequence of excess of drink, but true delirium tremens occurred in many cases. In

one instance, hallucinations, excitement, confusion, and insomnia existed in a child aged five years, who had been given brandy daily for two years by her father, a glass of Hungarian wine daily by the mother, and in the evening the child drank beer with the father, who kept a public-house.

Intoxication by drugs, such as belladonna and stramonium, from children eating the berries, and producing in some cases hallucinations of sight, in others furious delirium, are on record, but it is not necessary further to allude to the subject.

Acute affections, such as meningitis, acute hydrocephalus, scarlet fever, pneumonia, typhoid fever, are frequent causes of mental disease. As far as *meningitis* is concerned there is nothing surprising in this, for there is often direct irritation of the cerebral substance. "If," as Broussais says, "the meningitis is slight, the delirium will be acute and noisy; but if the lesion is profound, and injures the substance of the brain, not only perversion but suppression of the cerebral functions follows, viz. stupor, coma, and paralysis. Delasiauve attended a girl aged six years for this affection; before the attack she was intellectual and vivacious, but afterwards she became gloomy, and was subject to whimsical desires and hysterical caprices.

As regards *scarlet fever*, independently of the delirium which sometimes comes on in the course of the fever—a delirium characterised by hallucinations and a kind of anxious melancholy,—many authors have observed that psychical troubles sometimes occur after the fever is over. One instance will suffice. Dr. Wick attended a very young man who had a severe attack of scarlet fever. Scarcely had the fever ceased, and at a time when everything pointed to a rapid convalescence, the patient presented mental troubles—delirium with hallucinations, agitation, insomnia, and delirium of speech. He remained in this condition for a week, but after strong doses of chloral he recovered, after being two months ill.

During the course of *typhoid fever* the cerebral faculties are often weakened, so that the children when convalescent have forgotten much of what they had learnt, and learn new subjects with difficulty. In some children this intellectual weakness is very marked, and presents all the characteristics of dementia. Marce relates the case of a girl aged thirteen years, who was very intelligent, but at the end of a severe

attack of typhoid fever she became quite idiotic. Her speech was drawling and silly; she addressed everybody with childish questions, weeping at the time, forgot the names of those around her, and became unclean in her habits. Instead of dementia, maniacal delirium, with or without hallucinations, is sometimes produced, or the delirium may be partial, and present all the symptoms of monomania. In other cases the monomania is more complete, and often characterised by ambitious ideas; hallucinations and attacks of epilepsy also occur.

As regards the *age* at which insanity is noticed, Dr. Berkham has collected particulars of forty-seven cases. They are as follow :—

1 child at .	9 months old.	4 children at	8 years old.
1 " "	2½ years old.	4 " "	9 " "
2 children at	3½ " "	10 " "	10 to 10½ years old.
3 " "	5 " "	10 " "	11 years old.
3 " "	6 " "	4 " "	12 " "
5 " "	7 to 7½ " "		

Paroxysms of fury and passion strongly resembling mania are often seen in mere infants, but according to the table above given, proclivity to insanity seems to increase with the age of the children. Of thirteen cases that have been under my care, one case occurred at nine years, and two at ten years; the others showed mental disease at the age of twelve years and upwards.

As regards *sex*, twenty of the forty-seven cases were boys and fourteen girls; the sex of the others was not stated. Of the thirteen cases which I have seen, eight were boys and five girls. So far as my information at present goes, it seems, then, that more boys than girls are affected with insanity.

As far as *age* is concerned, there is no doubt that up to seven years of age convulsions and arrest of intelligence are most commonly observed, although, as I mentioned in a former part of this paper, delirium is often seen as the result of febrile affections. From seven to fourteen years of age true mania and melancholia are most frequent, while hysteria shows itself very often as soon as the menses appear.

Among the psychical diseases met with *dementia* is frequently observed. Acute dementia, which is the most common form, frequently occurs between the ages of ten and sixteen, and differs from senile dementia "in that it seems to depend on the imperfect nutrition of the nervous system, and is generally curable by generous diet and other means that supply materials for construction."

Burrows relates the case of a boy who, up to twelve years of age, "had evinced all the capacity and activity usual to his years. At this period some change was observed in his disposition and habits. He became negligent and irascible, fond of amusements below his age, and if opposed fell into silly passions. What he desired he cared not how he obtained. At length slight symptoms like chorea came on. When aged fourteen years," he says, "he (the patient) was brought to London for my advice. He appeared then to be a stout lad with a healthy complexion. The conformation of his head was good. The expression of his countenance denoted a degree of vacuity. He hesitated in his speech a little, and then uttered his words suddenly. He desired almost everything he saw, and attempted to gain it with force and violence, and if restrained broke into furious passions. He had lost all knowledge of the classics, and only amused himself with childish books and pictures. A year afterwards his tutor wrote to me that he was gradually becoming worse; his senses were more impaired, his movements were more restricted; in short, he was quite in a state of vacuity."

Juvenile dementia, as a result of inherited syphilis, is occasionally met with. Mental deficiency is noticed at the age of the second dentition, and from this time gradual degeneration ensues, with sometimes paralytic and epileptic seizures, and death occurs in three or four years. I had a well-marked case under my care, in which after death the brain was found to be small in size, and there was thickening of the membranes and diminished calibre of the cerebral arteries.

Monomania, or *delusional insanity*, which "consists in an exaltation or undue predominance of some one faculty, and characterised by some particular illusion or erroneous conviction impressed upon the understanding," is commonly met with. The patient suffers from delusions and hallucinations. I had a case under my care at Darenth, a girl aged twelve years, who was full of religious delusions. As far as hallucinations are concerned, Moreau is of opinion that while those of the adult may be gay or sad in character, in children they are in ninety-nine times out of a hundred sad. The hallucinations of sight consist of armed men who menace the child, of red or black devils, of corpses dressed up, and so on. Those of hearing are usually terrifying in their character. The child not only sees but hears people say, "I am going to cut your neck," "Be quick or I shall knock you down," "If you

move you will die," and similar sentences, which frighten him. Many cases are on record, but the following is a good example. A child aged seven years, after hearing some stories told by her nurse, had hallucinations of sight. She saw one evening on the wall opposite to her bed a great red man. At her cries they ran to her, and pointing to the figure with her finger, she said, "Do you see him on the wall? he is looking at me." This condition persisted for a long time.

Theomania, demonomania, kleptomania, pyromania, and dipsomania occur in children, but it is not necessary to discuss these affections now.

Erotomania has been observed in early life. The expression of the face and the gestures have an amorous languor, but as a rule the children so affected are chaste. For the most part the disease lasts for a short time, but individuals predisposed to insanity often fall into so much physical and moral languor as to constitute what the French call "amorous cachexia." Esquirol describes such a case:—"The eyes are lively and animated, the look passionate, the talk tender, but erotomaniacs do not become indecent. They forget themselves; they devote to the object of their love a pure and secret worship; they become slaves, and execute his orders with a childish fidelity. . . . The facial aspect is dejected, the complexion pale, the character altered, sleep and appetite disappear, and they become restless, dreamers, desperate, irritable, angry, and so on. The return of the beloved object makes them drunk with joy, and the happiness which they enjoy breaks forth in themselves, and is communicated to every one around them. . . . Night and day they are pursued by the same ideas, the same affections. . . . They desert their parents and friends, scorn fortune, despise social propriety, and are capable of the most extraordinary, difficult, painful, and eccentric actions."

Far more important is *nymphomania* and *satyriasis*, due no doubt to the influence of heredity and exaltation of the general sensibility. Instances are on record in which the affections have been seen at a very early age; satyriasis has occurred in boys only three years old, and in girls cases of pregnancy have been observed at nine years of age. Buchan states that the first symptoms of nymphomania have been observed in a girl three years old, who was in the habit of throwing herself into the most indecent attitudes, and indulging in the most licentious movements.

I have already spoken of *homicidal mania* as the result of imitation; but there is no doubt that the influence of heredity and an overpowering impulse must also be taken into account. Homicidal mania has been observed at a very early age. Esquirol relates the case of a child aged four years, in whom the instinct to murder revealed itself suddenly; he armed himself with a knife, and stooping over the cradle of a baby ten months old, cut its nose and made horrible gashes on the body. Quite lately the newspapers have contained an account of a boy seven years old who was returned for trial at the assizes for the murder of his brother, aged six months. I do not know whether the trial has yet come on, but in this case there is no doubt the influence of heredity is very marked. The mother had been confined in an asylum two years ago, and all her children were weak-minded.

Melancholia appears incompatible with early life, but the buoyancy and gladness of childhood may give place to despondency and despair. It may be sudden or insidious in its attack; a primary disorder, or the sequel of some other form of insanity. There are two forms: the first, a pure abstract indefinable depression; the second, a despondent condition, having relation to religious matters or a future state. In the case of a boy aged sixteen years, who was under my care at Darenth, the parents were nervous, excitable, irritable, and subject to nightmare. The boy was born under the stress of hard work (the mother was a teacher of music). When fifteen years old he came home for his holidays, not knowing that his grandfather was dead. The news, the mother said, "worked upon him." Here we have the influence of heredity and a shock. Five days afterwards he awoke, after going to bed, and shrieked out that he was dying. He saw visions, became melancholy, and swam long distances in the ornamental water, Regent's Park, at night. He was restless and careless of consequences. When admitted he was bright and good-tempered, and very fond of reading. At the end of two years he commenced to have fits of depression, which after a time came on more frequently, and he remained in the same condition when I left four years ago.

As to *suicide in early life*, there are numerous instances. In these cases heredity exerts a great influence, but very often there is an overpowering impulse, or terror produced by certain hallucinations will cause the child to commit suicide. The fear of reprimand or bad treatment is a frequent cause

of suicide, as are also self-love and disappointment at not obtaining a high position in school. Falret mentions a case in which a child aged twelve years committed suicide because she was twelfth in her place in class. Soultz relates the case of a child aged twelve years who committed the act in order to escape the tediousness of having to go to school. Seizing a knife from the table, he buried it deep in his chest three times. Unfortunately, suicide in children seems to be increasing; in France there have been 482 during sixteen years, and in Russia 57 during ten years. I have no statistics at present with regard to England.

Mania is characterised by a general delirium, with loquacity, incoherence, intellectual excitement, and delirious conceptions. The movements are violent and incessant. The children cry, run about, laugh, sing, break and destroy things, undress themselves, and do everything without any aim or design. The muscular strength seems to be increased, and one sees young children overcome obstacles and lift heavy things with extraordinary facility. In this form of mental affection delusions are more frequent than hallucinations. Of the thirteen cases which have been under my care no less than nine suffered from mania, and in five of these it came on after attacks of epilepsy. The following is a representative case:—W. A. R—, aged twelve years on admission, was a fairly nourished boy, of dark complexion and engaging disposition, but of excitable temperament. There was a history of phthisis on the father's side of the family. The case was a congenital one, and was supposed to be due to the mother being insulted by a man when three months pregnant. The child had always been on the move since birth, but had become more restless lately. He had fits of screaming a fortnight before admission. He was the only child. On admission he was noticed to speak in a short, sharp manner, and give incoherent answers to questions. His attention could only be arrested for a very short time. He was constantly moving about, and became violent after states of excitement. He was very mischievous. He had no epileptic fits, but violent screaming attacks. In one of these maniacal states he threw his trousers into the fire, broke some basins, and threw two chamber-pots at the head of some helpless imbecile children near him. When asked about it, he said he did it, but gave no reason.

Kelp gives the case of a boy, aged thirteen years, who suffered from *folie circulaire*. He was a dull child, and had

been so often punished at school, on account of his slow progress, that he became deeply melancholy and tried to kill himself. The melancholia alternated with mania, in which he whistled and sang day and night, tore his clothes, and was filthy in his habits. A case of this kind is rare, he says, at such an age.

Choreomania consists chiefly of capriciousness, irritability, and a great tendency to sudden emotional disturbances. Hallucinations, illusions, and a maniacal delirium may also occur. I have seen one such case myself. Leidesdorf has directed attention to the resemblance of choreic to toxic insanity, as supporting the view that chorea may be of infectious origin. There is no doubt that it is due to a blood state, but what this is we are at present unable to say. In the ninth volume of the *Psychological Journal* a case of choreomania is related, in which a boy ten years of age lifted an adder, supposing it to be a stick, and was so much alarmed, though perfectly uninjured, that mania, accompanied by involuntary and grotesque attitudes and gesticulations, was induced.

Moral insanity is of frequent occurrence in childhood, and I have seen several cases, though in America it seems to be of more frequent occurrence than in England. The intellectual faculties are unimpaired, and the child is usually sharp and clever, but morally he is a thief, a liar, full of cunning, horribly cruel, and often of immoral tendencies. When remonstrated with he will express contrition and promise amendment, but these promises are soon forgotten, and a fresh outbreak occurs. Mayo relates the case of a boy of fair talents and considerable intelligence, but of the most singularly vicious, unruly, wayward, and depraved character. Under all means had recourse to for his reformation he had been alike intractable. He was selfish, violent, delighted in mischief, had drawn a knife on one of his tutors, exposed his person, and gave way to every degrading vice.

Hysteria has been frequently noticed. Tables have been published of the various ages at which it most frequently occurs, and from a study of these it seems that hysteria rarely appears before the age of six or seven years. As in the adult, so in the child, it presents the convulsive and non-convulsive forms. Rarely there is a convulsive attack; more commonly it commences with intellectual disorders, and various troubles of sensation and movement. Usually those affected have a lively appearance, keen imagination and intel-

ligence, and seek to draw attention to themselves by exaggerating their sufferings. These cases are extremely impressionable, and laugh and cry on the slightest provocation. The will is weak. Hysteria is more common in girls than boys, but when the latter suffer from the affection they become timid, and blush and lower their eyes when spoken to. They will not play with boys of their own age, but prefer the games of little girls, such as playing with a doll, &c.

Recently Dr. Wigglesworth has described two cases of degenerative cerebral disease in children, presenting symptoms resembling those of *general paralysis*. Lack of time, however, prevents me from describing them. The *diagnosis* of most of these forms of mental disease is easy. The chief difficulty arises in distinguishing mania from the delirium which appears in the course of acute diseases. *Acute meningitis* may be mistaken for mania, and *vice versâ*. But in *meningitis* the pulse is full and strong, and the temperature raised. There is headache, vomiting, and convulsions. The pupils are contracted, and strabismus will often be observed. In *mania* the pulse is only slightly quickened, notwithstanding the violence of the delirium, and there is no vomiting nor convulsions.

Asthenic pneumonia and *typhoid fever* are sometimes accompanied by violent delirium which masks the essential symptoms of the disease, but the delirium of these diseases is always preceded by a long or short febrile period; while in *mania* the febrile period only becomes developed at the time when delirium is at its highest point of intensity.

As regards *prognosis*, the presence or absence of hereditary predisposition will help us to decide whether the patient will recover, or if he recovers whether there is likely to be a relapse. Generally one may say that if a child has an attack of mania, melancholia, or other mental affection, and there is no history of hereditary predisposition or masturbation, the prognosis will be favourable; on the other hand, if heredity is well marked and masturbation is much practised, the prognosis will be bad, especially as regards the future. An exception must be made in the cases of juvenile dementia the result of hereditary syphilis, moral insanity, general paralysis, and usually by nymphomania and satyriasis. In these cases the prognosis is always bad.

As to *treatment*, opium is rarely necessary; when sedatives are required, a warm bath daily will be found useful, and

when there is intense delirium we can add to this the application of cold to the head ; in other cases a wet pack will be preferable. The administration of bromide of sodium in doses, according to the age of the child, will act as a calming agent, especially in cases of epileptic mania. In cases where there is much sleeplessness trional in doses of from 3 to 8 grains may be given for a few nights. A tonic treatment is to be aimed at in order to restore the strength of the patient, and in those who masturbate the administration of quinine and camphor will be found convenient. Cod-liver oil and extract of malt will help to reduce any emaciation which may be present. Care must of course be taken to keep the bowels well open. Open-air exercise is to be employed in all cases, but gymnastics should be made use of as a recreation in cases of melancholia, and as a regulator of movements in choreic insanity. In some cases it will be necessary to stop all intellectual occupation ; in others to encourage it, and also make the child interested in the general affairs of life ; in the higher classes the study of painting, literature, and the modern languages, and employment in carpentering and gardening for the boys, and fancy work for the girls, will materially aid the cure. One of the most important parts, if not the most important, of the treatment is the separation of the child from his friends ; among strangers he will be obliged to conform to the rules of the house, and carry out the treatment which has been ordered. Visits from friends should be permitted rarely at first, and regarded as a favour or reward for good behaviour. Under these circumstances amelioration will proceed much more rapidly.

With regard to moral insanity, Dr. Jules Morel, who has seen a good many children suffering from it in Belgium, advocates special institutions for them. I am of his opinion, and think they should be put into institutions in which they should undergo industrial training, and be kept under control during the period of their lives. If allowed to be without control they are sure to commit some act which will bring them in contact with the law. The result of this will be that they will most probably be sent to prison, which is not the proper place for them.

The *prevention* of insanity in childhood is most important. Life in the open air, work in a garden or on a farm, recreation of all sorts, absence of forced prolonged intellectual labour, and the suppression of excessive emotion are the chief hygienic indications in those predisposed to insanity.

To strengthen the body first is the main point, and having laid a good foundation, we can then proceed to educate the mind. In many cases the opposite view has been held, and children's minds have been pushed on with no regard to their physical condition, and insanity or severe nervous disease is the result. I see children of this kind every year. Fortunately of late various societies have sprung up, whose objects are to study the development of the mind of the child and endeavour to guard against over-pressure, and I hope that in time greater attention will be paid to education in relation to the child's mental condition.

I must apologise for only being able to give you a short sketch of what I consider is a very important subject, but want of time has prevented me from going more fully into the matter.

Discussion.

The CHAIRMAN thanked Dr. Fletcher Beach for his interesting paper. It dealt with many important points, and one especially he had brought under their notice, that of over-education of children. Dr. McDowall said in his asylum experience he had very little personal knowledge of insane children, as they seldom found their way into a county asylum. The youngest cases he had known were of adolescent general paralysis, and he had had several of those well-marked cases, boys and girls of thirteen and fourteen who had died from general paralysis due to congenital syphilis. He had known of cases where hereditary influence was much marked on both sides.

Dr. SHUTTLEWORTH said that the distinction between insane children and those properly designated idiots and imbeciles was of much importance in practice. In his opinion, the former were out of place in institutions organised for the training of imbeciles; for they were not amenable to disciplinary influences efficacious for the latter, to whom, moreover, they set a bad example apt to be imitated. He well remembered the trouble caused at the Royal Albert Asylum by the admission of three insane children, two sisters and a brother, who proved by their moral perversity and occasional maniacal outbursts that they were patients more fitted for a lunatic asylum than for a training institution for mentally deficient children. In a case in which he had recently been consulted in a higher rank of life, there was (in a girl of twelve) moral perversion with sexual precocity manifested by masturbation and other abominable practices, and but slight intellectual defect, though there was reason to believe that the mental abnormality was congenital. There was a neurotic heredity on one side and a phthisical on the other, a family history which he thought not uncommon with the juvenile insane. He had been interested in what had fallen from Dr. Beach as to the characteristics of insanity in children. Children are more or less creatures of emotion. The formation of ideas was a matter of gradual organisation in the growing child. Fixed delusions were uncommon in children, for their normal ideas were not fixed but transient. Of course, amidst monotonous surroundings there might be predominance of one idea, as in the case of a child constantly harping on the word "window," the only bright spot in its cellar dwelling. Homicidal tendencies were most common at the adolescent period; they were not always the outcome of insanity so much as of moral imbecility,—that is to say, a simpleness of mind leading to deeds of violence through mere imitativness. Hence the need of caution as to the reading of sensational literature by youths of weak mind. Much might be said as to injurious modes of

education. Precocious children were sometimes rendered insane by their talents being too early brought into prominence. Such children often broke down and became insane before they arrived at adult age. The more cases of general paralysis in children were inquired into and the antecedents found out the more likely they would be to find a history of inherited syphilis.

Dr. JONES said he was expecting to hear more about insanity in children before the age of puberty. It would be interesting to find out whether what happened in the adult happened in the early youth of the child. He would like to know when moral perversity began. Over-education in children was certainly a subject worthy of great consideration.

Dr. OUTTERSON WOOD, speaking as a hospital practitioner, spoke of the question of masturbation, and said he saw the results of it over and over again in their out-patient department. There was a great alteration in the habits and manners of children who were allowed to practise the habit unchecked. Numerous cases of epilepsy were undoubtedly due to the practice of self-abuse.

Dr. BOYCOTT said Dr. Beach had not told them the age at which insanity showed itself in children. As far as he could see, insanity in children showed itself as they grew up. When the child began to talk they would expect to see signs of hereditary insanity develop, but it seems to take years to develop.

Dr. THOMSON said Dr. Savage had written that insanity in children was a tendency, and not an entity of itself. He thought it was when that tendency was diverted actually into insanity. That tendency he said might remain throughout life if there was nothing to set it all right, so to speak.

Dr. BEACH said moral sense was greatly due to the education of the child. No doubt, as Dr. Jones had said, there was something in the environments or surroundings of the child. Insanity did not show itself much in very young children, and the older the child grew was hereditary insanity likely to show itself. Tendency no doubt was a strong factor in the introduction of disease of all kinds. He alluded to the question of degeneration, and said an American doctor was in England making a study of the degeneration of the English race, and according to him that was very marked.

*The Care and Education of Weak-minded and Imbecile Children in Relation to Pauper Lunacy.** By JOHN CARSWELL, L.R.C.P.E., &c., Certifying Physician in Lunacy, Barony Parish, Glasgow; and Lecturer on Mental Diseases, Anderson's College, Medical School, Glasgow.

THE care, training, and education of physically and mentally defective children is now an accepted public duty undertaken by the State at the public cost, to the extent at least of providing the necessary schools and institutions, and other needful arrangements. Blind and deaf and dumb children are provided for by legislation, which was passed as the result of the facts of the case relating to the special needs of those children having become apparent by the general enforcement of compulsory education. Imbecile and idiot children have also been provided for by laws passed

* Read at the Spring Meeting of the Scottish Division.

during recent years ; but inasmuch as all the laws relating to those classes of children are either Lunacy Statutes, or have as their object to make provision for weak-mindedness viewed as a special or modified form of insanity, they have been found to be inadequate for providing the necessary facilities for the proper care and education of children of defective intellect, but devoid of those insane characteristics which distinguish true imbecility and idiocy. The probable reason for this hiatus in the legal provision for the education of weak-minded children, is that it has hitherto been assumed that a child who is not a certifiable imbecile is capable of being taught in an ordinary school. That such is a mistaken view many who have had experience among children of defective intelligence have recognised, and the Committee on Defective and Epileptic Children, whose report has just been published, recognise the distinction between the two classes of feeble-minded children and base their recommendations upon it. Indeed, the Committee was appointed to consider the case of such children, because it was found in practice that many children of school age were unable to profit by the instruction of ordinary schools, and yet were not imbeciles or idiots, and the reference to the Committee was limited to that class of children. The Committee say in their report, "the word 'feeble-minded' as used in the report denotes only those children who are not imbecile, and who cannot properly be taught in ordinary elementary schools by ordinary methods." It is clear that if legislative sanction is given to the recommendations of the Committee, a great benefit will be conferred upon non-imbecile feeble-minded children, and upon their parents ; and an important step in advance will also be taken in the direction of making more reasonable use of existing facilities for the care and training of imbeciles and idiots.

In England provision for the training and education of imbeciles and idiots exists separately from that provided for lunatics ; while in Scotland imbeciles and idiots are dealt with under the Lunacy Statutes alone. In Scotland the training and education of imbeciles is provided for partly by voluntary charity and partly by Poor-law authorities. When the Scotch Lunacy Acts were passed the duty of providing education for imbeciles was not directly placed upon the Poor-law authorities ; but without direct legal enactment parishes have assumed that obligation, and that course has been found in practice to be but the natural

development of the purposes of the Lunacy Statutes in relation to pauper lunacy in general, and imbecile and idiot children in particular. Not only children of weak minds, who on other grounds have become chargeable to the parish, are placed upon the lunacy roll, but the children of able-bodied people, whose only claim to relief under the Poor law is the imbecility of their children, are admitted to relief.

In other words, pauper lunacy is accepted by all the authorities concerned in the administration of the Poor law and the Lunacy laws to include imbecile and idiot children. Now it is important to remember that this is so, because imbecile and idiot children are placed in the same category as lunatics, the provisions applicable to lunatics being made applicable to them. Pauper imbecile and idiot children in training schools are pauper lunatics, although they do not appear upon the General Board's register of lunatics.*

Under the "Instructions to Inspectors of Poor" issued by the General Board of Commissioners in Lunacy for Scotland (1895), the procedure for dealing with applications made to the Inspector of Poor on behalf of imbecile children is the same as that for ordinary lunatics, except that imbeciles are not committed to training schools under a Sheriff's order. That is to say, the same obligation rests upon Inspectors of Poor to provide for the proper care and training of imbecile children as in the case of ordinary lunatics. A man who is relieved by the parish of the financial burden of maintaining his wife in an asylum, and also of an imbecile child in a training school, receives such relief in both cases under the same statutes; and in all respects, except that the child is not committed under a sheriff's order, and that its name does not appear upon the register of lunatics kept by the Lunacy Commissioners, but upon a separate register, both wife and child are provided for by the parish as pauper lunatics.

Adequate provision has existed for many years in Scotland for the proper housing and treatment of ordinary pauper lunatics, and as there has been but little private and voluntary charitable relief of lunacy, the full burden of pauper lunacy has been borne by parishes. But it has been different with imbecility occurring among the children of the same class of

* The inmates of training schools for imbeciles are recorded in a separate book, and not being on the Board's General Register of Lunatics are not included in the General Board's annual return of the number of *registered lunatics*.

the community who have been relieved by the parish rates of the burden of ordinary lunacy. Private voluntary charity, aided by profits accruing from private patients, has to a considerable extent made the necessary provision for the imbecile children of poor people. But there has occurred during recent years, owing to circumstances which need not at present be referred to, a considerable increase in the number of imbecile children for whom their parents desire institution care and training, an increase which private charity could not be expected to wholly provide for. The parishes have maintained those children, finding accommodation in the existing institutions, and paying rates of board rather higher than those paid for ordinary lunatics in district asylums. This method of providing for pauper imbecile children tends towards an increase of the number so maintained, because voluntary charity ceases when legal provision is found ready at hand to take its place.

When the Glasgow School Board recently directed attention to the cases of imbecile children found among the non-attenders at school, the financial considerations involved in providing institution care for those children did not arise, because the School Board very properly considered that the Poor-law authorities were bound to grant the necessary assistance towards maintenance in training schools.

In the foregoing observations I have endeavoured to indicate the following positions as justified by a review of all the circumstances relating to the care, training, and education of feeble-minded and imbecile children.

1. That simple feeble-mindedness can be distinguished from true imbecility, and that children suffering from such deficiency should not be classed with imbeciles and idiots, and should not be provided for in the same institutions.

2. That children suffering from simple feeble-mindedness belong to the category of sane persons, and should be provided for in special classes, or otherwise, under the control and at the cost of the educational authorities, as suggested by the Committee on the Education of Epileptic and Defective Children.

3. That imbecile and idiot children belong to the category of insane persons, and are suitably provided for by the Lunacy authorities at the cost of the Poor-law authorities in the cases of children of poor people.

4. That in Scotland separate statutory provision for imbeciles and idiots does not exist and has been unnecessary,

they being considered to be lunatics within the meaning of the Lunacy Statutes, and that benefit to the children has resulted from their being so regarded.

The views now indicated present the requirements of the problem of providing suitably for all forms of mental deficiency among children in a simpler form than it has hitherto assumed. Because if the educational authorities undertake the duty of providing adequately for the education of weak-minded children down to the level of the distinctly imbecile and idiot class, there will no longer exist any adequate reason for separating imbecile and idiot institutions from asylums, except in so far as different sections of an asylum having various objects to serve require to be separated for purposes of efficiency.

In further discussion of the subject, I propose to relate the circumstances of the Barony Parish of Glasgow in relation to this question, and to show how the principles just stated may be applicable to a large city parish.

For many years the parish council has maintained a considerable number of imbecile and idiot children, some in training schools, others boarded with parents and guardians; and when school age was passed, those children who continued to require institution care have been removed to the asylum at Woodilee under the usual certificates and sheriff's order, so that Woodilee has had to serve for those adult imbeciles the purpose of a custodial asylum. Many children who would otherwise have been chargeable to the parish have been provided for in training schools at the cost of voluntary charity, and many more have remained at home under the care of their parents without assistance from the parish.

A year or two ago the School Board specially investigated the cases of children not attending school on account of mental defect, and they decided to instruct the parents of those children who could not afford to pay for their maintenance in a training school to apply to the Inspector of Poor for the necessary assistance.

The Barony Parish Council were fortunate in having upon the Council Dr. Wilson Bruce, whose experience as Medical Officer to the Glasgow School Board, and also to the Juvenile Delinquency Board, gave him authority to speak with a knowledge of the necessities of the case which was invaluable in the discussion of proposals intended to meet all the requirements.

It became the duty of the responsible medical officers* of the Parish Council to carefully consider the existing system for providing for imbecile children, with the object of advising the Council upon all the facts relating thereto, so that an intelligent policy might be adopted in view of the considerable increase of public burdens contemplated.

The question to be considered was: What have been the educational and other results of the training in imbecile institutions to the children who have been chargeable to this parish? And in view of the conclusions formed from such consideration of past experience, we had to consider what would be the best course to follow in making further provision for the additional number of cases waiting for disposal.

The feeling we had was that as regards care in management and nursing, and well-directed successful efforts to secure the comfort, happiness, and general well-being of the children in Larbert and Baldovan Training Schools, nothing was left to be desired. But we were bound to go further, and ask, What has the parish gained by its expenditure in training those children? Has it been relieved to any extent of the ultimate burden of maintaining those children when they reached adult life? We were conscious that the prevailing public spirit of benevolence justified the expenditure hitherto incurred for imbecile children, but we also felt that only good could come from a discriminating application of that sentiment to the subject in hand.

In order to estimate the training or educational benefit received by the children chargeable to Barony who had been resident in Larbert Schools, we reviewed the progressive history of the children chargeable to the parish under training there in 1887, tracing them till 1897.

The following table shows the result of that inquiry.

* In this inquiry Dr. Hamilton Marr, of Woodilee Asylum, was associated with me.

Table showing progressive history of fourteen children under training in Larbert Institution in 1887.

No. of Imbeciles chargeable in Larbert at 15th May, 1887, 14. How disposed of since.							
YEAR.	By death.	Removed to Asylum.		Boarded with Guardians.			Off roll ; sent to mother.
		Still chargeable.	Since died.	Still chargeable.	Since died.	Subsequently removed to Asylum.	
1888 . .	1	...	...	...	...	...	...
1889 . .	...	2	...	4	...	...	1
1890 . .	2	1	1	...	...	...	...
1891 . .	2	...	...	...	...	...	...
1892 . .	...	...	...	...	...	...	...
1893 . .	...	...	...	...	...	...	...
1894 . .	...	1	...	...	1	...	...
1895 . .	...	...	...	...	...	...	...
1896 . .	...	...	...	...	...	1	...
1897 . .	...	...	...	...	...	...	...
	5	4	...	4	...	...	1
Total							14

Similar inquiries over other periods would, we believe, show similar results. It is clear that Larbert Institution, from the point of view of the Barony cases, cannot bear to be judged by a high standard of advantages gained as regards ultimate permanent benefit. And yet it is barely conceivable that Larbert Institution could be administered, or the children more carefully taught, or with more discernment of their individual characteristics and capacities, than has been the case during the years under review.

The general result of our inquiries showed—

1. That fully 50 per cent. of the children chargeable to the parish under training in imbecile schools were deriving no benefit from those specially equipped schools that could not be equally well secured in a custodial asylum, under the management of the parish council, as a department of their lunatic asylum, but separate as regards building. It has to be remembered that the asylum grounds extend to over 400 acres.

2. That even of those children whose habits had been improved and intelligence brightened by training, none had

reached such standard of manual efficiency or mental capacity as fitted it to be discharged recovered. This fact pointed to the need for custodial asylum care for such cases when they reached adult life, and were no longer suited for the training school. It is generally agreed, I think, that such parrot-like trained patients are not suited for the ordinary wards of a curative asylum.

3. Relating to that branch of our inquiry appertaining to the new applicants, who had been intimated to the Inspector of Poor by the School Board, we found that with the exception of two or three, who were to be tried in ordinary schools, special attention being given to them, they were all suffering from similar forms of mental defect as those whose progressive history in imbecile institutions we had traced, and therefore similar results might be anticipated in their cases.

In view of the results of our inquiries, the idea of setting up a custodial asylum for imbeciles and idiots in the asylum grounds at Woodilee had much to commend it. Like all other ideas, it has a history, which has been well stated in a report which Mr. James R. Motion, clerk to the Barony Parish Council, prepared and presented to his Council, from which the following is taken :

“ Before approaching the subject matter of the report, I desire to furnish the Asylum Committee and the Council with a short history of the evolution of this important question, and its relation to Poor Law administration.

“ In the first place, it is the duty of the Parish Council to provide for the care and treatment of imbecile children, for whom application is made by their parents or guardians, by removal either to the asylum, an imbecile institution, boarding in the country, or by placing them on the out-door roll. In the first three modes, parents who are able are liable to contribute to their maintenance as the relief committee may determine; while in the latter class, the out-door relief granted is in the form of an aliment allowed to the guardian where the income is too low to afford proper maintenance and nourishment.

“ In 1881 the Asylum Committee had then under consideration the question of accommodating such children at Fauldhead in their own grounds; but, after mature consideration, it was decided to board them in Larbert Institution. The number then chargeable was six.

“ Again in 1889 the matter was under discussion, with the view of purchasing Craigenbay Cottages, and utilising them

for the reception of such patients, but the Committee declined then to entertain the proposal.

“Now, in consequence of the action of the Glasgow School Board, in tracing large numbers of children who are not educable, and bringing the cases under the notice of the parish councils, the question of the care and treatment of this class of poor children has assumed much larger proportions. The School Board has no motive in pressing this matter upon the notice of the different parishes but the necessity of having the children properly cared for; and as the parents themselves are the proper parties to make the necessary applications, it must be assumed that sooner or later this parish must provide for the care of the children resident therein. It is necessary, therefore, that the Council should consider the means to be taken to meet these applications, either by providing for them in the grounds of Woodilee or in the existing training institutions.

“It appears there are thirty-six children in Barony discovered by the School Board, of whom eighteen require care and treatment in an institution, and ten left with their parents, alimented by the parish. Of the former number eight have already been removed to Baldovan, leaving ten still to come up for consideration before the relief committee.

“Baldovan Institution, near Dundee, has accommodation for 100 cases, the number on the register at 31st December, 1895, being seventy-eight, but it is now understood to be full. The cost to the parish per head per annum is £25, including clothing, &c.

“Larbert Institution is licensed for 230 children, while, as a matter of fact, they had at close of last report, on 31st December, 1896, 271, and the report shows the institution to be overcrowded. The inclusive cost per head per annum is £30, as against £25 in Baldovan.

“There is, besides, the larger question of the policy of the Council having the care and treatment of all their insane poor under their own control in their own institution, with their present highly-equipped staff and appliances.

“The necessity for the Council taking up these children, and dealing with their applications in a favorable light, is absolutely necessary when the conditions under which they live at present are considered; and there is no other authority but the parish charged with that duty. It is simply appalling to contemplate the conditions under which a large number of these poor children at present exist, and something must be

done by either of the above courses. The Committee will be able to consider from this report which is best in the interests of the children and the parish, both from a financial and administrative standpoint."

Following upon those inquiries, and the consideration given to the whole subject, a definite proposal was submitted for the consideration of the Lunacy Commissioners to the effect that sanction should be given for the erection of a cottage within the asylum grounds for the care of the uneducable class of imbeciles or idiots. It is not contemplated to provide for all cases of imbecility, but only for children who require care and nursing, and who are unable to appreciate the simplest pedagogic instruction. It became, therefore, necessary to classify imbeciles into educable and non-educable; but our attempts to get a working definition of those terms were not fortunate, and naturally some difference of opinion occurred as between the views of the Lunacy Commissioners and our own views as to the cases that ought to be included under the one head or the other.

The Commissioners rightly viewed with disfavour any interpretation of the term "uneducable imbecile," which would, in their opinion, result in a loose practice as regards the disposal of imbecile children, whereby some who might be capable of deriving benefit from training would be deprived of that advantage. To meet that risk, it is proposed to send all imbeciles, except the most hopeless idiots, to a training school for a probationary period of not less than six months. While safeguarding the interests of the educable imbecile, the Commissioners favorably entertained the proposal for separate housing of the uneducable class of imbeciles. In the opinion of the Commissioners, "idiots merely requiring nursing are not suitable inmates for training schools, and for such of them as cannot be provided for under private care, the Board would gladly see special provision made in ordinary asylums." As the result of their consideration of the proposed scheme, the Commissioners have now sanctioned the erection of a cottage for the accommodation of thirty children of the class just described. By sanctioning the erection of this establishment the Commissioners have encouraged what will be generally admitted to be a movement in the right direction, and it may safely be expected that experience in the working out of the scheme will indicate the limits of the terms educable and uneducable as applied to imbeciles.

If the suggestions of the Departmental Committee on the education of mentally defective and epileptic children are embodied in legislation, and the educational authorities become responsible for the care of all mentally deficient children above the level of the imbecile class; and if the Lunacy and Poor-law authorities undertake the duty of providing for all imbeciles and idiots, adults as well as children, in a manner suited alike to the special needs of those children and to considerations of economy of public expenditure, a step in advance will be taken in the public provision for the mentally defective.

Discussion on Dr. Ireland's paper, printed in January number, 1898, p. 45.

Dr. CARSWELL said that he had been interested in the idea of a custodial asylum. That seemed a different idea from what we followed here, because, as every superintendent knew, they got patients who had been trained or had been resident in imbecile institutions, for whom, at the end of their period of residence, no adequate provision could be made at home, and they had to be sent on as certificated lunatics to the asylum. It raised the question whether these imbeciles should be kept separately in custodial institutions from ordinary lunatics. He might say that in the Barony Parish they had had this question raised in a very definite and urgent form, for this reason, that the School Board of Glasgow had found in the course of their investigations that a considerable number of imbecile children were at home uncared for, and they considered it to be a public duty to call upon the parish to provide for the care of these children. That raised the whole question of the method that they adopted for these children, and so far as steps had been taken, the direction that was likely to be followed was that an institution would be built on the grounds of the parochial asylum for the care and nursing of non-educable children, while the educable children would be left in such institutions as Larbert, Baldovan, and others. He thought it was obvious that if that policy was carried out not only by one parish, but by all parishes, such institutions as Larbert and Baldovan would become real training schools, because they would be relieved of the non-educable children; and that being so, what would happen further would be this, that the constituency—if he might use that word in this connection—from which children requiring admission to imbecile institutions were drawn would become extended. The presence of the non-educable children in these institutions to a certain extent limited the class of children, but once these were all away it would become a more desirable place not only for those who were recognised as imbecile children, but for backward children, and the school boards would induce guardians and philanthropists generally to withdraw from ordinary schools backward children and get them sent to such an institution.

Dr. IRELAND had a considerable suspicion about these backward children. He had gone to several schools, but he found that there was a very broad distinction made between them and imbecile children. All those who were imbecile were very soon pushed out of ordinary schools, and he thought it would be an outrage to those backward children if they were sent in among imbecile children. Many children were bright enough in the playground, although they were stupid at their lessons. He understood that the school board of Birmingham was making inquiries similar to the Glasgow Barony Parish, and he hoped that they would erect an institution of their own and keep it separate from such institutions as Larbert and Baldovan.

The CHAIRMAN (Dr. Urquhart) said that as Dr. Carswell had this matter at

heart, and as Glasgow was going to move, it became a question whether they should not consider the whole subject more carefully and more deliberately than could be done that afternoon.

Dr. YELLOWEES thought that they must be agreed as to the undesirability of having these children who were no longer fit to be retained in school as imbeciles intruded upon them in asylum wards. He thought every one was quite clear that that was not the place for them, and that they were apt to learn habits which were not to their advantage; but if they began to differentiate between idiots and imbeciles, and those who required education and those who required merely custody, did they not open up a very wide question? He had been preaching the need of custodial as contrasted with curative institutions, and this was in the direction of what he believed to be right. He thought it was a misfortune that asylums should be added to because chronic patients accumulated, when they might with far greater economy be transferred to a custodial institution which might be common to several districts, and leave the curative asylum to do its work with a smaller number of patients.

Dr. MACPHERSON said he understood that the Barony scheme was pretty well advanced, and that they had gone the length of writing a report; and he thought that Dr. Carswell might write a paper on the subject, to be brought up at the next meeting in Glasgow.

Dr. CARSWELL said that he might do so if it was the desire to hear the subject discussed at the meeting in March.

The CHAIRMAN said that by that time they would also have an opportunity of reading Dr. Ireland's paper with every care quietly at home.

Discussion on Dr. Carswell's Paper.

Dr. CARSWELL said that before reading this paper he had taken the liberty of inviting Mr. Motion, Inspector of Poor for the Barony Parochial Board, who had taken an intelligent interest in this question for many years. There was now some prospect of some steps being taken, and he had thought it proper Mr. Motion should be present.

Dr. TURNBULL intimated that Dr. R. Wilson Bruce, Chairman of the Asylum Committee of the Barony Parish, who had been invited to the meeting, was unable to attend on account of professional duties.

The PRESIDENT said that in thanking Dr. Carswell for this interesting paper, he would suggest that along with the discussion of his paper they might take the general discussion of Dr. Ireland's, which was read at their last divisional meeting. They would be glad to hear Mr. Motion.

Mr. MOTION said that he really could not add anything to what Dr. Carswell had so well said, especially as his sentiments had been quoted in that report; but he would merely wish to say that the original proposal was made by a distinguished predecessor of his, Mr. Beattie, in 1881.

The PRESIDENT asked Mr. Motion at what age children would be removed when they were sent to this home or school.

Dr. CARSWELL said that they had not got the length of considering that point, but he supposed that the natural development of it would be that they would have a custodial institution for adult imbeciles associated with the children's custodial institution, and that they would keep all such cases outside the ordinary asylum wards.

The PRESIDENT said that as the boys and girls grew up they became adult imbeciles.

Dr. CARSWELL said that when that came about they would probably have a sufficient number of them to get the sanction of the Board of Lunacy to erect another place for them.

Mr. MOTION.—Or simply transfer them into the ordinary wards.

Dr. CARSWELL thought that the natural development would be the other way, and he thought it was desirable to relieve the asylum of all such cases.

Dr. ALEXANDER ROBERTSON said he would like to make a few remarks prior to Dr. Ireland, from whom they expected the most information on a question of that kind. It was quite evident that this subject had increased in importance lately compared to what it used to have. Previous to the action of the school board in Glasgow it really was a comparatively small question, as Dr. Carswell in the latter part of his paper had said, and scarcely suggested the idea of a separation of the classes; but now both in the Barony and also in the city parish of Glasgow it had become really of considerable importance even from an economic point of view. In that aspect he was not particularly prepared to look at it just now; but with regard to the advantage to the children he quite approved, and thought that it was a right distinction to draw with regard to them, that in respect to idiots and the lower class of imbeciles they must distinguish between those that might derive benefit from residence in a special training school and those that were practically non-educable. He thought, therefore, that there was room for both institutions. In institutions such as Larbert, where great attention was given to training, he could speak of cases which had been sent there where very marked benefit was obtained from the training. He did not know that he could speak to a solitary case where a child was trained to a condition so as to be able to support himself or herself, but still the benefit by special education was very decided, and it became a question if that class were sent into an institution of a more custodial character whether that great gain to the individual would not be lost. He gathered from the remarks in the paper by Dr. Carswell that it was fully intended to differentiate between the two. That being so, he could not help thinking that it was a very right and proper step to take; and now the question from the economic point of view had increased so largely, and therefore there was really room for a special place for keeping them comfortable and right. Where else could they have a better place than simply in the grounds of an asylum, where there would be the supervision of the medical superintendent, and the care with which the treatment of that class was carried out. He thought that was the distinction which they must keep clearly in view, to be very careful to distinguish between the two classes, and to continue to send those cases that could be benefited, or in any way likely to be benefited, to institutions where they had special facilities of training. There was another point of view, however, even in regard to the cases that were sent there. There came a time when further benefit did not seem to be derived from continuous attention. Then why should they pay the very considerable charges if the improvement had ceased? Why not take them away? He did not say let them be taken to this custodial institution, but possibly let them be boarded out in private homes.

Dr. CARSWELL said that they did that.

Dr. ROBERTSON said that they would, therefore, relieve the parish from some of the expense. The question was a very large one in connection with that class, and it must be very pleasing to them to see that so much public attention was being given in England to this subject of what was the proper thing to do with those who were mentally defective, and the recognition of the physiological fact that there was a class neither idiot nor distinctly imbecile, but still, as this Departmental Committee to which Dr. Carswell had referred called them, feeble-minded. Formerly all such cases were in common schools, and were subjected up to the present time to much unnecessary hardship, where perhaps a teacher who was not aware what was the exact condition gave a slow boy or girl a box on the ear, whereas the child ought not to be expected to learn his or her lessons in the same way as the majority of those present. The recognition of this fact, that there was a class of that kind who were not up to the standard, but who were yet not idiots or imbeciles, appeared to him as a very important step for the probable production of a method which was really very much wanted.

Dr. IRELAND said he had listened with great attention and pleasure to Dr.

Carswell's paper, on which he had expended a great deal of thought founded upon previous observations. He was not quite sure whether he could gather together all the points to which Dr. Carswell had referred, so as to give his own opinion on them all. As they had a paper that entered on a number of points which had been controverted, it would be impossible for him to do so, and if he attempted to do so he would only tire them; but he would make some remarks on some points that were new. Dr. Carswell had laid great stress upon the report of a committee which had been appointed about a year ago, and which consisted of several gentlemen of great experience in the treatment of idiots and imbeciles, and of two or three ladies engaged in charitable undertakings who had acquired considerable experience. He had got a copy of the report of the committee. That committee had consulted a great number of people, and had got their opinions reported and printed in a pretty big volume at the national expense. They all knew that the appointment of a committee was a common way in the House of Commons in order to get rid of a troublesome inquiry, and it was generally understood that very few people read the report, but somehow or other the matter came to an end. He would like to read through that blue-book, and read the evidence before he accepted the evidence for notions which had converted Dr. Carswell. They had there quite a new definition of the word "imbecile," and he thought they had quite enough to do to provide for the imbeciles without attempting a new definition of them. They now had the feeble-minded, who in Scotland might comprise about 5000 children who were to be thrown upon the funds of charity, or of the Poor Law, but at any rate this was a proposal which he thought should be gravely considered. He thought it was Dr. Warner who commenced the discovery of the feeble-minded in schools. He himself had gone with Dr. Yellowlees and inspected some schools in Glasgow; and then he went to the Board school in Prestonpans, where he was a member of the School Board, and could examine the children at his leisure. He was much puzzled to find this feeble-minded class, but he found that there was a broad distinction between an idiot or imbecile and a dunce. A child might be very bad at his lessons, but on the playground, or looking for birds' nests, or going out in the boats he was a boy who could learn easily, and surpass the other children who were better at reading and writing. It might be that there was an intermediate stage, so that they could go through feeble-mindedness, stupidity, and dulness up to genius. In large towns like London there might be a larger number of such deficient children, but he must say he had considerable hesitation about it. He was not prepared to speak to the report, and he might yet be convinced by it, but there were some other objections that were taken at the time, namely, that people in Scotland were proud, sensitive, and cautious, and there would be very considerable opposition if they classed children as feeble-minded, and sent them to particular schools. He was not sure whether it would work as well as in England. He had seen these feeble-minded children in Bergen and in Bremen. In Bremen they were all idiots or imbeciles. They were very well educated. He noticed that Dr. Carswell did not define what was the distinction between a feeble-minded and an imbecile child. The Americans were heirs of the English language as well as ourselves, and they had taken the word feeble-minded and applied it to idiots and imbeciles too; it there included all classes. A feeble-minded person was an idiot in the American speech, if not in the English language. The Board of Lunacy from the beginning had allowed all the children sent to the Larbert Institution to be certified by the medical superintendents as imbeciles. That was enough, but when the 4s. grant was made he pointed out that it would be a disadvantage to the Institution if this was not given to the children sent by the parishes as boarders, and they required for this purpose that they should be certified as unsound of mind. Why should they not be certified as idiots instead of unsound of mind, which meant something different from an idiot and an imbecile, but it was mentioned in the Act as something different. They evidently used it in the sense of *non compos mentis*, using a word

which was sufficient to include all classes. He thought that Dr. Carswell used the word *lunatic* in reference to persons who were not *lunatics*. He (Dr. Ireland) imagined that a *lunatic* was a person who was sometimes insane and sometimes not, as distinguished from a person who from natural incapacity was always unfit to manage his own affairs. He did not think there was the slightest use of confounding these definitions.

Dr. CARSWELL said that the English Lunacy Commissioners separated them ; he did not separate them. He did not distinguish between the idiot and the *lunatic*.

Dr. IRELAND said that he was sorry if he had misconceived Dr. Carswell's meaning. Dr. Carswell had entered into the question at considerable length as to what should be done with these idiots and the large number who were thrown upon the different parishes. He must say that his views differed to a certain extent from the Barony Parish Council. He knew that that Council had always taken an intelligent interest in the care of idiots and imbeciles. He remembered that Mr. Mitchell, an old member of the School Board, got a list of seventy children who might be benefited by special training, and proposed that the Barony Parish should set up an asylum of their own. That met with the decided disapproval of the Directors of the Larbert Institution, and they did all they could to pour cold water on it. That was not on his advice, because he knew that they did not provide for one third of those presented for application, and he did not think it was proper for men called philanthropists to vote against providing accommodation for the whole of them. However, his views on the subject might be gathered from the paper he had read to them about the Danish asylums. In Denmark they had no Lunacy Acts at all, and they had been allowed to work out their views with perfect freedom. What they arrived at was that there should be an asylum for the uneducable, who could receive so little benefit from education that they might be called idiots. No doubt the late Dr. Seguin began the education of the insane, and he would not despair of any idiot ; but, still, the amount of time and trouble necessary was so great that practically he might be said to have abandoned it. They required medical care and relief, and should on this account receive asylum treatment of some kind. The idiot was distinct from other children, and he was always subject to bad health and nervous diseases which required treatment, and the mortality was usually about nine or ten times as great even in the best of asylums as compared with that of ordinary children. An asylum of that kind should be both a home and a hospital. Then the second department he would have would be an educational one, in which medical treatment and educational pedagogic treatment should go hand in hand. These children should be taught to use their hands and acquire good habits, and as much school teaching as they actually could take in. He thought that this had scarcely been done in this country for a good many years back. The third asylum, which was the most necessary of all, was the custodial one. When he was at Larbert there was an election system, and after five years the beneficiaries were pushed out to make room for others. If the parents were alive the children were sent back, and if dead they generally found their way into *lunatic* asylums. He had pointed out the miseries that these children suffered, and the bad habits they were taught, and he believed that there was no necessity of insisting upon these before an audience of that kind. In Larbert they only provided for children up to eighteen years of age, and after that there was no provision. They were sent into *lunatic* asylums, anywhere so that parochial authorities could manage to get rid of them. They had great hopes that the Barony Parish would take this into consideration, and might provide three asylums or an asylum in three different departments, one for uneducable, one for those who could be educated and trained from their youth, and thirdly, a custodial asylum for those whose education was over, including those for whom education had been of little benefit. In that asylum he thought that a considerable portion of their board might be defrayed by their doing some work. As to

the trade they should be taught in the educational institution, he did not think that idiots and imbeciles, however well trained, could go into the market and look for work, or into a joiner's shop and hold their own. Even supposing they could work they could not spend their wages. At the same time, if they were in an institution such as they found in Norway and Denmark, he thought that a considerable portion of the expense of supporting them could be saved.

Dr. YELLOWEES said that he had felt very greatly interested in this question, and he greatly appreciated the importance of the subject and the spirit with which the Barony Parish Council had entered upon it. He did not admire quite so much the definition which that Committee had given them, and while it might be sufficiently useful for practical purposes, it was by no means a scientific one. They were told of feeble-minded people and imbeciles, and the difference between them was that the feeble-minded people had no insane characteristics, whereas the imbecile children had insane characteristics. It seemed to him that that was a kind of definition which put the difficulty a little further back. What constituted insane characteristics? There was no absolute line to be drawn. For example, there was temper. When was the temper of a weak-minded child an insane manifestation, and when was it mere irritability? The whole thing resolved itself practically; and he suggested that one division might serve as well as any other, but it was by no means a division by such a line as the Committee seemed to have drawn. He thought they must recognise that. Neither was the further division of educable or uneducable an exact or safe division, because what was education? It might be a triumph of education in some of the children that they were able to button their clothes or go to the water-closet, whereas others were susceptible of school learning, so that educable and uneducable was not a very exact division, and it just came back to the practical question as to those who were able to attend an ordinary school for ordinary training. They were so far able to guide themselves that they required no other special care. There was no exact line. For the parish a very important practical division was this, the possibility of that patient—because they were patients—becoming ultimately self-sustaining. That was the practical point of view from which the parish looked, and ought to look, at such a case, as well as the benevolent one. He was sorry to agree very much with what Dr. Carswell had told them as to the results of training in that particular direction. He had never yet seen any result that he could rejoice in to the great benefit of the individual, and he had never seen any person turned out from a training institution who was a self-sustaining man, able to go about the world and guide himself in it; and yet that was the practical test by which parochial benefit towards these people and parochial action towards them must be largely guided. Therefore he thought it was entirely a wise and proper and right thing that these children, who were so little susceptible of education and so little susceptible of permanent benefit, should be cared for in special institutions from the public funds; and moreover, when they reached the stage at which they were not looked upon as children, but adults, they should still be cared for in separate institutions, and not in asylums. He thought that the Barony Parish was doing an admirable thing, but should it not be a much wider thing, and be a better thing that such an institution should be a Scottish institution, and that the parish councils should provide a separate institution for weak-minded people or defective people, whether they were children or adults? No doubt the Barony Parish had such a tremendous population to provide for that they might do it separately, but even a vast parish like the Barony could only find thirty just now. They knew that these were bad lives in the sense of longevity, and it was a question whether such an institution should not be a separate institution altogether, and one which could be developed to any extent, and which would contain both an educational portion and a custodial portion, and an adult custodial portion—the three requirements which Dr. Ireland had just alluded to. He thought the matter a very important one, because every parish had more or less the very

same difficulties as the Barony Parish had now so bravely met. He supposed that it was quite understood that the patients who were placed in that building would be certified.

Dr. CARSWELL said they were—at least, they were under the sheriff's order.

Dr. YELLOWLEES said he did not think he had anything more to say except that he was glad that this question had received such prominence, and he thought that the thanks of the Association were due to Dr. CARSWELL for bring the matter before them.

Dr. HAMILTON MARR said he regretted that Dr. Blair, the Medical Superintendent at Woodilee, was unable to be present through illness in his family, because he would have been able to throw some light on the scheme. There was certainly at first some misgiving in the minds of the officials of the asylum as to the erection of an imbecile institution in the grounds of the asylum. It was thought that an institution of that kind should not be associated with an institution whose aims were that it should be wholly curative, but that misgiving had completely disappeared under the strongly expressed idea of the Barony Parish to have the care of all the children from their birth to their death, so to speak, completely under their charge. There was one point that he would like to refer to, and that was the educable and non-educable question. No definition had been given by Dr. CARSWELL, and the suggestion was put before them to go and visit the children in Baldovan and Larbert Institutions and decide whether these children were educable or non-educable,—that was to say, whether they could be received into an institution attached to Woodilee or not—that institution being charged with the reception of children who required nursing only, not children who were capable of being educated or trained in an institution such as existed at Larbert. In setting themselves to this task they overcame the difficulty; they found an intermediate class. They found that there were some children who, to all intents and purposes, were idiots, but who had not received the advantages of training in any way, and who were at home and yet might benefit by special training. The Barony Parish had decided that in all such cases they would give them a trial for six months in a special training institution. They were sent there, and on the reports of the superintendent of the institution or on the report of the medical man who visited the institution, they were to remain in that institution to get the training if benefit followed. If they were not benefited they had to go back. So that no definition had been attempted, but merely an inquiry as to the proper kind of children to put into that new institution at Woodilee Asylum. It might be interesting to point out that while this institution was within the grounds of the asylum, to all intents and purposes it would be quite detached from the asylum. The building was to be erected within the asylum grounds, and to be managed by the medical superintendent of the asylum, but all the internal management would take place within the building itself. The officials, nurses, and so on would live on the premises.

Dr. IRELAND said that he might point out that in England idiots had been entirely separated from lunatics. By the Idiot Act institutions for this class were treated, as that was considered a great advantage, quite different from the lunatic asylums, although they were inspected by the Commissioners of Lunacy.

Dr. YELLOWLEES said he thought that was within the metropolitan area alone.

Dr. IRELAND said it applied to the whole of England. The Commissioners of Lunacy gave a licence, but they could not revoke it; they could only make a recommendation. These institutions were managed by directors.

The PRESIDENT asked if Dr. Ireland was now talking of places like Earlswood and Lancaster.

Dr. IRELAND stated that that was so; they had to be certified as idiots, and they were placed in the same class as lunatics. Naturally they did not require such a classification. They had a separate class. Parents objected to have their children certified. They were put under the Lunacy Acts, and there was a

difficulty with them that they could not certify that they would recover. When they were certified there they were all their lives, whereas an ordinary lunatic could get out on the statement of the medical superintendent. As a person never recovered from idiocy, he was under the Lunacy Act all his life.

Dr. CARSWELL, in reply, said that he had to thank them for the very patient hearing that they had given him in reading a longer paper than he intended to write, and he had to thank them for the very friendly manner in which his remarks had been received. Some points had been suggested in the course of the discussion that would suitably form a subject for a detailed discussion, but of course that was impossible, but he would just like to point out to Dr. Yellowlees that the phrase "insane characteristics" was not his. He did not claim the credit or discredit of it. The phrase was given to them by the Board. They had this from the Commissioners, that with regard to children of a certain class certain difficulties would not occur—that is, with regard to children who though of defective mind were more or less intelligent and devoid of insane characteristics. Their business was to go about discovering children that had insane characteristics and were also uneducable, in order to satisfy the conditions of the Commissioners before they would set up the new institution. The whole thing was surrounded by difficulties so long as the question remained in the stage of mere discussion; but when they got down to practical methods he often thought that a layman had an advantage over a medical man, as the layman came in and adopted them when they were discussing them. As to the doubt that had been expressed about the existence of a feeble-minded class of persons who as children could not be taught in ordinary schools, and who came to be wastrels and defectives, paupers and so forth, and never became lunatics, he did not think that he would be justified in saying that his experience did not bring ample testimony of the existence of such a class. He welcomed this new definition or this specific acknowledgment of the existence of a class of people who wanted twopence in the shilling in relation to imbecility, because he thought he saw in it a hope of the treatment of mental deficiency as related to moral deficiency, and the larger question as to how best to deal with the vagrant and wastrel, and the defective. No doubt it was the fact of the existence of that class that led to the appointment of the committee, because it stated that a reference to the committee expressly excluded the case of lunatics, and only considered the child deficient, who were not idiots or imbeciles. He thought the responsibility of that large class was acknowledged by the very terms of the reference made to the committee. Of course, difficulties of all sorts would be suggested, and if they were to go to England and consider these difficulties he did not know how they were to get over them, but in Scotland they had the knack of being able to say half a dozen when it did not suit them to say six, and he thought they could get round about difficulties in this way: that here was a method in which imbecile and idiot children had been dealt with as lunatics on the initiation or application of the Inspector of Poor, and in the proceedings of the parish council *quod* that class they had been considered as lunatics, but had never been treated like an ordinary lunatic in the asylum. They had been separately provided for, just as if there was a special Act providing for them. That was an illustration of what he meant when he said that they did not find themselves at a barred gate when they came across a difficulty such as was mentioned by Dr. Ireland.

Points of Similarity between Epileptic and Alcoholic Insanity.

By R. H. NOOTT, M.B., C.M., Senior Assistant Medical Officer, Broadmoor Criminal Lunatic Asylum.*

POINTS of similarity between alcoholic and epileptic insanity are referred to by many writers on psychology. These short notes, which I bring before you to-day, refer to cases of criminal acts of violence committed by epileptic and alcoholic maniacs, and, I think, exemplify in a very striking manner the similarity above referred to—a similarity in the mental phenomena which preceded and which led up to the specific acts of violence in a series of cases.

Although such similarity is noticeable between cases of epileptic and alcoholic insanity in both their acute and chronic forms, I confine myself to-day to the acute forms, by which I mean the state of acute alcoholism or acute alcoholic mania on the one hand, and the paroxysmal period of epileptic insanity—the period in immediate relation to the “fits”—on the other; and I hope to be able to bring forward evidence which suggests that there often occurs, in cases of acute alcoholic mania, a condition identical with the so-called condition of mental automatism which is so characteristic of the post-epileptic state, a period during which, though “consciousness” may be entirely lost, the most complicated and purposive acts may be performed, of the circumstances of which the patient has no trace of recollection after the attack has passed over. In other cases the acts committed by such patients are acts of ungovernable violence, uncalculating and aimless.

The following short notes refer to a few fairly typical cases of acts of violence committed by persons while in a state of epileptic or acute alcoholic mania.

One preliminary remark I must make as regards the subsequent loss of memory of acts committed during the attack. It is obvious that there is in such cases a strong motive for such absence of memory being assumed, and it is equally obvious that it is impossible to tell with *absolute certainty* whether such loss of memory is assumed or real. In the cases that I am about to refer to, it is certain, so far as it is possible to say so, that the loss of memory was not assumed. I draw particular attention to this, because not

* Read at the Spring Meeting of the South-West Division.

only is it an interesting point in considering these cases, but also it is one of considerable medico-legal importance.

W. G—, a lad of 18 years of age, who was a cook on board a fishing smack, killed his uncle, who was skipper of the vessel, by stabbing him in the neck with a clasp-knife. He had suffered from fits for many years. He had never been known to have any quarrel with the man he killed, and the latter had never been known to be unkind to him in any way.

One afternoon, when at sea, about an hour after having a fit, W. G— rushed at the skipper, and stabbed him in the neck. He was immediately secured by one of the other hands on board, and in answer to a question as to why he had done it, he said "He wants to make away with the ship and all hands; he's Jack the Ripper." The following day he had two fits, and was very maniacal. On recovering from the attack he had no recollection of what had occurred on the afternoon in question.

L. M— was employed on a farm to scare birds with a shot-gun. Across some of the fields in which he was employed there were footpaths. In the early part of a certain afternoon he had a fit, and shortly afterwards two ladies, who were quite unknown to him, walked across the field in which he was. He shot at one of them—over sixty shots entering her face—and fractured the skull of the other with the butt end of the gun. In the evening he was taken to the police station, where he had several fits. On recovery he had no recollection of what had occurred on that afternoon. He still maintains that he is innocent of the crime, and that he knows nothing about it.

W. B— murdered a fellow inmate of a workhouse. On the day in question he had several fits, and was put to bed early on that account, in the infirmary, the only other occupant of which was an old imbecile, bed-ridden patient. The male nurse, who visited the room from time to time, was attracted by a knocking at the door, and went to see what was the matter. Immediately he entered the room W. B— rushed at him and struck him violently with a heavy piece of wood, which he had taken from the foot of a spare bed in the room. The patient was secured, and it was then found that the other occupant of the room was lying insensible in bed, bleeding from a severe wound on the head. W. B— was extremely maniacal for several days, and had to be kept under restraint during that time. On recovery he remembered nothing of what had occurred.

E. C—, a married woman, cut her child's hand off under the following circumstances. She had her four months old infant in her arms, and being asked for some bread and butter by another child, she proceeded to cut some. While doing so she was seized with a fit, after which she cut the infant's hand off at the wrist. On recovering she recollected nothing about the infliction of the injury, and was found by some neighbours hugging the infant's hand, which she had wrapped up in a handkerchief.

The next case is one of probable "masked epilepsy." J. A—, a patient in Winson Green Asylum, on the night of his admission there, killed two of his fellow-patients and injured a third. One of his victims, W. B—, who subsequently succumbed to his injuries, gave the following account of what happened. J. A— suddenly jumped out of bed, picked up a crockery chamber utensil, and savagely attacked another patient, smashing it over his head, and beating him about with the broken pieces. He then rushed at W. B—, and with the pieces of crockery beat him about the head until he became unconscious. He subsequently attacked a third patient, but was secured before he inflicted much injury. A few days afterwards he was removed to Broadmoor Asylum. On admission he could recollect nothing of what had occurred on the evening in question. To quote his own words, he said, "I remember going to bed in a dormitory where there were other patients, and when I woke the next morning I found myself in a different place." This case was reported in the *Journal of Mental Science* for January, 1894. As a rule he was a quiet and well-conducted patient, with exalted ideas and delusions of extreme wealth. At times he destroyed his bedding, but on every occasion, when questioned about it, he said that he "had slept all night, and someone must have come into the room and done it." After these attacks he had delusions of suspicion and persecution, which always disappeared in a few days. After one of these attacks he developed meningitis, his temperature going up to 108·4° F. He was practically in a state corresponding to the *status epilepticus—minus* the convulsions,—which terminated fatally.

The following notes refer to cases of acute alcoholic mania.

A. D— killed a woman aged 73 by striking her on the head with a chair. He was living with his mother at the time, and deceased lodged with them. Some years previously some bricks had fallen on his head, and from that time a very little alcohol would upset him. At the time of

the committal of the crime he had been drinking heavily for some days. On the previous day he had gone to a neighbour's house, had thrown a poker at one of the occupants, and smashed a table with the kitchen fender. He then went into the garden and beat the wall with a piece of the table. On the day on which the crime was committed he again went to this house, and smashed more of the furniture. He then returned to his own house, went upstairs to a room occupied by the deceased, and hit her on the head several times with a chair. That evening, when at the police station, he was very maniacal, and had to be restrained. He continued in this state for several days. On recovery he could remember nothing of what had occurred during the whole of this time.

C. S— killed his child, aged six months, by smashing her head against the fender. He had usually been a quiet, steady, and temperate man; but for about ten days previous to the committal of the crime he had been drinking heavily with his brother-in-law, who had come to stay with him. C. S— became so ill and strange in his manner that his wife sought medical advice. In spite of strict injunctions to take no stimulants, he continued to drink heavily, and on the evening before the crime was committed he was very excited and restless. He accused his wife of poisoning him, and threatened to kill his brother-in-law. After a time he went to sleep on a sofa. Early in the morning he again became very excited, and his wife and brother-in-law went out for assistance. While they were away he went upstairs and broke all the windows; he then took the child from her bed (a boy aged ten was sleeping in the same room), and smashed her head against the fender. He then went out without hat, boots, or coat, and wandered about until he met a policeman, to whom he said, "I am — —, I live in Porter Street; I have murdered my child by dashing its head against the wall; you will find it all right if you go and look." For some days afterwards he was very maniacal, and had to be kept in a padded room. On recovery he could remember nothing whatever of the crime. He subsequently passed into a state of chronic mania.

T. L— killed a man in a police cell by cutting his throat with a knife. He had been taken to the police station for being drunk and disorderly, and was confined in a cell by himself. Shortly afterwards another man, who was helplessly drunk, was brought in and placed in the same cell. They were visited regularly during the night by the constable on

duty. On each occasion the deceased was found to be sleeping heavily, and T. L— was standing by the fireplace. At one of the visits in the early morning the constable on duty found the deceased lying on the floor with his throat cut, and about twenty cuts on the face. On being asked what he had been doing to the deceased, T. L— said, "I thought he was going to kill me, so I knifed him." He was very maniacal for several days afterwards, but on recovery remembered nothing of what occurred in the police cell, nor could he remember being taken there.

H. H—, a publican, shot a girl in his employment under the following circumstances. He had been drinking heavily for some time, and had appeared strange in his manner. On the day in question his son saw him wandering about the house with a gun in his hand. He seemed to think there was a man hiding in the house, and his son heard him say, "Sam, come out; Sam, don't shoot me in front of my son." His son tried to get the gun from him, but he would not give it up, and said, "Don't take it away or somebody will shoot me." He then left the room, and shortly afterwards his son heard two shots, and going upstairs found the deceased lying on the floor, having been shot through the chest. On recovery he had no recollection of the crime, or of what had occurred for some hours previously to it.

G. M— killed his mother in a most brutal manner, and before a third person, a domestic servant. He had on a previous occasion had an attack of "delirium tremens." He had been drinking heavily for several days. His mother owned a public-house in which they lived, and on the evening in question the house was shut up at ten o'clock as usual. G. M— then went upstairs to a room in which his mother and the servant were. He locked the door, and said, "You will have to stop up all night." He then loaded a revolver, rushed at his mother, and said that "she was not his mother, and that they were both at the same game." The servant took up the poker to defend herself and the deceased, but G. M— took it from her, and pointing the pistol at her, he said, "It will be your turn next, if you move you will not live long." He then kicked his mother in a most brutal manner, and continued to do so for several hours. About three o'clock in the morning he tore off all her clothes and roasted her body in front of the fire. From time to time he threatened the girl in the room that he would shoot her if she moved or screamed. He was subsequently secured and

taken to the police station. On recovery he could remember nothing that had happened on the day the crime was committed. There was an interesting medico-legal point about the case, as there was a possible motive for the crime. The deceased had saved a considerable amount of money, and G. M— was wishing to get married, and had asked his mother to help him by advancing him some money. She had refused, saying that she was going to be mistress in her own house while she lived.

Gentlemen, I must ask you to kindly pardon the elementary nature of the following few remarks. Reference will often be made to the writings of Hughlings Jackson on epileptic insanities.

The first suggestion I wish to make is this: May we not look upon acute alcoholic mania as the outcome or result of a "discharging lesion," very similar to that which is the cause of epilepsy and its allied insanities. That the epileptic fit itself is the result of a "discharging lesion" in the highest centres of the brain seems to be generally acknowledged. As regards the post-epileptic mania, some look upon it as a continued result of the initial "discharge," which has spread to other nervous tracts; while others, and Hughlings Jackson among them, look upon it as a result not of a direct "discharge" in the nervous tracts concerned, but of an abnormal physiological "letting go" in these tracts, due to their being cut off from the inhibitory control of the highest centres, this "letting go" being due to the paralysis of the highest centres, caused by the initial "discharge"—a similar phenomenon, as Hughlings Jackson suggests, as the increased rate of cardiac action after section of the vagus. I would rather look upon it as a result of both these conditions, viz. an abnormal instability or irritability of the nervous tracts concerned, and their isolation from the protective control of higher centres.

The condition into which the highest nerve-centres are brought by the consumption of an extreme and poisonous amount of alcohol, and which results in the sudden, violent, and often transitory mania as seen in the cases I have quoted, occasions mental phenomena very analogous to those observed in epileptic mania. May we not look upon these phenomena as due to a "discharging lesion," a sudden liberation of nerve energy which, commencing in the *highest centres* (the "anatomical substrata of consciousness") may be either expended in these centres, or may spread to lower

levels, resulting in movements the less organised, specialised, and automatic, or the more organised, specialised, and automatic, according to the level to which the discharge spreads.

Before going further I must refer to the loss of "consciousness" accompanying the acts performed by acute alcoholic and epileptic maniacs, whether those acts are of a complex purposive character, or of an aimless wildly destructive character. In some cases, as in those above quoted, the "loss of consciousness" is complete; in other cases it is only partial; that is to say, the acts performed are subsequently faintly remembered as if they had happened in a dream. As regards the relation of "consciousness" to activities of the highest nerve-centres, the above and similar cases illustrate very definitely, I think, the opinion of Hughlings Jackson and others on the subject, viz. the doctrine of "concomitance," which is stated by Hughlings Jackson in these words: "that (1) states of consciousness (or synonymously states of mind) are utterly different from nervous states of the highest centres; (2) that the two things occur together, for every mental state there being a correlative nervous state; (3) that although the two things occur in parallelism, there is no interference of one with the other."

I now pass on to refer briefly to some points of resemblance between these two classes of cases. Clinical observation shows, I think, that, speaking generally, the slighter fits of epilepsy are more liable to be followed by mania than the more severe fits.

Both in epileptic and acute alcoholic mania we find different intensities and different depths of dissolution, resulting in correspondingly different nervous manifestations. In some cases the initial discharge is entirely expended in the area in which it takes place; in other cases it "overflows" into other nervous tracts. For example, in some cases of epilepsy the initial "discharge" in the highest centres (the "anatomical substrata of consciousness, and the re-representation of lowest levels) results in profound coma of short duration, a temporary complete dementia. Correspondingly, in some cases of acute alcoholism a profound coma, a temporary complete dementia, results. It may be said that the coma in these cases cannot be allied to the coma resulting from a severe epileptic fit because it is of so much longer duration, and because in the case of epilepsy it is accompanied by more or less severe convulsions. My sug-

gestion is that in acute alcoholism the "discharge" is entirely expended in the nervous tracts which subserve "consciousness," and does not overflow, as in epilepsy, to the nervous tracts in the highest centres, which are the representation of the lowest levels. In this relation, however, it is important to remember that in some cases of acute alcoholism general convulsions of an epileptiform nature occur.

In some cases, both of acute alcoholic and epileptic mania, the middle level and the lower tracts of the highest level being cut off from the protective control of the highest centres, and being in a high state of nervous instability, there result those blind uncalculating destructive acts of which some of the cases I have quoted are examples. In other cases both of epileptic and acute alcoholic mania, the acts are of a complex and purposive character, indicating activities of the highest sensori-motor centres. Sometimes "consciousness" is entirely lost; in other cases "partial consciousness," if I may use the term, is present, but not in such degree of activity as would enable reflection and judgment to give their "protection" to the activities of the correlated sensori-motor tracts. In relation to this "loss of consciousness" accompanying elaborate acts, Hughlings Jackson says "it may be that in dissolution the activities on the lower level of evolution have attendant states of consciousness which in normal conditions they had not, or that their normal slight states of consciousness become more vivid. (The condition which I have referred to here as "partial consciousness" is by many designated "double consciousness.")

In some cases the individual will *at the time* give expression to delusions, hallucinations, or illusions, of which the act is the ultimate outcome. In the study of these cases, however, in which the highest nervous activities are concerned independently of consciousness, one is confronted with this difficulty—that while motor activities are open to objective study, sensory activities being entirely subjective, one is dependent upon information given by the patient regarding them.

Whether expression is given to delusions, &c., or not, there are often strong indications that the sensory nervous activities present are correlated to the emotion of "fear."

Both in alcoholic and epileptic mania relief is often experienced on the accomplishment of the act, due, as one must

suppose, to the relief of tension in the nerve tracts concerned, and a consequent resolution to normal stability.

The following clinical facts are also suggestive. Epilepsy is sometimes the result of severe injury to the head, and also of sunstroke. Injuries to the head and sunstroke may also cause a great predisposition to extreme effects of alcohol, and also a predisposition to the maniacal type of acute alcoholism.

In conclusion I would draw particular attention to the great medico-legal interest and importance of the insanities which I have brought to your notice to-day.

Discussion.

THE HON. SECRETARY said he wished to thank Dr. Noott for his able and instructive paper, which, he was quite sure, would be read with interest by every member of the Association. It was difficult to discuss an intricate subject of this kind against time, for every point required to be carefully considered before venturing on an expression of opinion, whether for or against the views formulated by the reader of the paper. He might mention that he had recently seen a case where the clinical symptoms were attributed to epilepsy, but it was clearly proved that alcoholism was the cause, and not epilepsy. The man had manifested suicidal propensities, and generally the case supports the views of Dr. Noott. If it can be proved that in these states of alcoholism there is a discharge similar to the Jacksonian discharge in epilepsy, then a very valuable link will have been added to the chain of nerve pathology.

Analysis of the Causes of Insanity in One thousand Patients.

By J. V. BLACHFORD, M.B., B.S., Senior Assistant Medical Officer, Bristol Asylum.*

I HAVE investigated as far as possible the causes of *insanity* in the last 1014 patients admitted to the Bristol Lunatic Asylum, 507 being males and a like number females. My purpose has been to ascertain in what proportion of insanity *heredity* was the prominent factor in causation, and what influence was exercised by alcohol, traumatism, and certain other agencies, where no taint of bad heredity could be found.

The present investigation has been undertaken to seek confirmation, if any, of my opinion, that the causes of insanity may be grouped under very few heads, as well as to try and afford some explanation for the apparently rapid increase of psychoses during recent years.

Special care has been exercised to avoid accepting insufficient evidence as to hereditary predisposition, drink,

* Read at the meeting of the South-western Branch of the Medico-Psychological Association held at Oxford, April 19th, 1898.

traumatism, &c., and it has seemed best to class separately cases showing direct evidence of slight neurotic history, and those in whom this is to be inferred from the occurrence of insanity in their offspring.

Of the total 1014 cases, 230 epileptics, general paralytics, congenital and puerperal patients have been removed to a separate group, the remainder consisting of 376 males and 408 females. The disproportion between the sexes indicates that puerperal insanity does not counterbalance the greater proportion of male as compared with female general paralytics.

To avoid undue confusion in dealing with numerals I shall, in reading this paper, quote percentages only.

Of the 784 ordinary cases, sufficient evidence of hereditary predisposition is found in nearly 30 per cent.; in about 5 per cent. a neurotic history was ascertained, or was inferred from the insanity of offspring, and over 13 per cent. had suffered previous attacks.

If it be allowable to consider these recurrent cases as indicating an undiscovered hereditary predisposition (for they constitute no less than a quarter of those patients with an ascertained neurotic heredity), the percentage of hereditary predisposition may be materially raised.

Dr. Bevan Lewis gives an ascertained strong neurotic heredity in 36 per cent. of recurrences.

Eliminating these, however, as an uncertain factor, a history of insane or neurotic heritage has been definitely ascertained in 34.6 per cent., thus constituting the greatest discoverable predisposing cause. Nearly 11 per cent. of the 784 cases were broken down through drink alone, without known history of hereditary predisposition. Eighteen cases were classed as organic insanity, and four as traumatic, forming with the previous numbers a total of 486, or more than half the cases under consideration. And when the large number of patients is taken into account in which no history could be obtained, or in which the friends have ignorantly or wilfully withheld the same, the percentage is full of significance.

If, as is stated, mental break-down occurs at an earlier period in the offspring than in their parents, it is surmisable that the largest numerical difference between those suffering first attacks who have hereditary predisposition and those free from it would be at later periods of life, and that this difference would diminish at earlier ages. And, so far as my observations go, this supposition is borne out. Thus, of both

sexes in which the first attack of insanity occurred at over sixty years of age, 7·2 per cent. had hereditary predisposition, and 18·8 per cent. were without *this* tendency.

In the previous half-decade 4·5 per cent. had hereditary predisposition, and 9·5 per cent. were without, and below this age period the difference is very slight. This equality seems to indicate hereditary predisposition in the cases where otherwise it was not obvious. For inasmuch as some causes manifest themselves at particular epochs of life, more strongly in the hereditarily degenerate, a difference between the two classes of cases below fifty-five years of age should be observable. In the degenerate, puberty, adolescence, and the climacteric undoubtedly act as disturbing elements, the two former being answerable for an early break-down where the predisposition is marked, whilst where the instability is slight retrograde processes of senility are required to disturb mental equilibrium. In both sexes of those with or without hereditary predisposition, the most common age (exclusive of the senile epoch) for attack is from the twenty-fifth to the thirtieth year, and the next in frequency is from the twentieth to the twenty-fifth, followed by those from thirty to thirty-five years of age, so that the majority of cases occur between the ages of twenty and thirty-five, this embracing the period of life most subjected to stress, physiological and environmental.

A rise in female numbers between forty-five and fifty years marks the influence of the climacteric.

To summarise, these tables bear out what has been already advanced as to the causal agents in insanity, and allow us to infer that hereditary predisposition is the strongest of them, whilst the evolutionary and decadent periods of life constitute more focalising influences. Also that the period of greatest liability to insanity is between the twentieth and thirty-fifth year, embracing as this does the influences of the principal physiological epoch and objective encroachment.

I have also made observations in 131 female and 102 male cases, with a view of determining any tendency on the part of either sex to exhibit a transmitted neurosis. When this is direct from the parents its influence appears equally potent in the two sexes, whether the transmitter be the father or mother.

I have reliable statistics in only thirty-five cases concerning collateral hereditary influence, but so far as these go they indicate that the descendant of the same sex as that of the parent through whom it is transmitted is chiefly liable.

We can now consider the value of the commonly alleged cause of insanity—alcohol. I have felt it necessary to deal very critically with the ordinary testimony of the friends of the patient as regards alcoholic habits, being well satisfied of its unreliability in the majority of cases. So that I have taken into account only those instances in which no hereditary predisposition could be found, and in which the symptoms, personal history, &c., pointed without doubt to alcoholic excess. I have also eliminated those cases in which it was not possible to decide whether alcohol was a cause or a symptom of the insanity. There were 64 males and 22 females whose mental disorder seemed the direct result of alcoholic indulgence (the proportion being, as one might expect, larger among men). These cases comprise acute mania, melancholia, and typical amnesic and demented forms, and constitute 8·4 per cent. of all cases.

Insanity dependent on or accompanied by hemiplegia, growth, ataxia, bulbar paralysis, &c., constitute 18 out of the total number, mostly males, for easily surmisable reasons. Choreic insanity, being a strongly hereditary form, has been excluded from this group. Traumatism accounts for but a trifling number of cases.

Epilepsy has now to be considered; 7·7 per cent. of the total 1014 cases were epileptics, and in 21·5 per cent. of these hereditary predisposition was present. "Traumatism" and "drink" were causes alleged in a very small proportion. The influence of the latter appears to me only trifling, especially if we exclude those cases of convulsions occurring in alcoholics, and which both by their clinical form and transient duration (where the poison is discontinued) deserve to be classed apart. Hence hereditary predisposition poses once again as a potent cause, and the percentage just quoted is probably under-estimated, as in the case of other varieties of neuroses. I have arrived at the conclusion that as a general rule epilepsy commences at an early period of life, most commonly between the ages of ten and fifteen. In those cases which occur later in life they are traceable to traumatism, or to some toxic influence.

About 9 per cent. of the total cases were general paralytics. Hereditary predisposition is found in 23 per cent. of these, a sufficiently large number to indicate its influence in the production of this form of mental disorder. Dr. Mott has pointed out that general paralysis is a primary neural degeneration, an untimely decay of the most highly elaborated structures of

the cortex, and this is in harmony with the preceding supposition. But at the same time there is evidence that extraneous causes, such as stated by Dr. Clouston (hard work, alcohol, and meat eating), can of themselves act as excitants. The disproportion between male and female patients is suggestive in this aspect. Syphilis has been another cause advanced, both from direct evidence of it and indirect; the indirect consisting of the assumption that as syphilis is frequently a cause of ataxia, and the latter a not uncommon accompaniment of general paralysis, therefore syphilis is a factor in the production of both. My present statistics show scanty proof of syphilis in general paralysis, but more reliable and frequent evidence of it in ataxia.

Alcoholic excess as an extraneous cause comes into prominence in these tables—11 per cent. to 12 per cent. of the 91 cases had a distinct history of this without any discoverable hereditary predisposition. This percentage is, admittedly, a considerable one.

Traumatism is a not infrequently alleged cause, but I can neither, on the one hand, find a history of such in any important number; nor, on the other hand, does it appear feasible to suppose that a coarse injury should be capable of setting up so gradual and characteristic a neural degeneration as general paralysis.

Only one case of the so-called "developmental" type has been met with by me; this was, however, a marked one, and ran its course between the ages of twenty and twenty-five years. If such cases have any bearing, it is in favour of the production of the early decay in general paralysis by faulty heredity.

From these tables the age limits in general paralysis appear as twenty-five to sixty (excepting the first-mentioned case), and the age on attack seems to be a little higher in women than men.

Dr. Clouston states that in the Durham Asylum, situated as it is in a thickly populated mining district, where wages are low, work hard, and drink plentiful and bad, the proportion of general paralytics is one in six of all admissions; whereas in the Edinburgh Asylum, which is differently situated, it falls to one in seventeen; in the Bristol Asylum it is one in eleven.

In order to ascertain the life of a general paralytic after symptoms have been established, I have investigated the male cases included in these tables: of the fifty-seven cases which have died here, in only four cases did it last for more than

five years, these being five and three quarters, six, eight, and nine; and in the last three it is very doubtful if the information obtained is correct, inasmuch as it is merely stated in each case that the wife or other informant said that the patient had been queer four or five years before, but there is no satisfactory proof that the symptoms at that time had anything to do with general paralysis.

I have separated the puerperal from the ordinary cases on the female side, because the exciting cause is one to which every woman is not liable, and does not obtain on the male side. Of these there were forty-two, or 8·2 per cent., and in this class hereditary predisposition again plays an important part, fourteen having a definite hereditary history, while in three a distinct neurotic history was obtained—in all 40·4 per cent., the largest proportion ascertained in any class except the congenital. The influence of the condition as to marriage of the patient could hardly be estimated from so small a number, but as only two of the forty-two are recorded as being single, it would appear that the mental anxiety and distress accompanying pregnancy in the unmarried are not sufficient to cause a break-down, unless acting upon a mind already predisposed to insanity. And, as a matter of fact, in both these cases hereditary predisposition is attributed as a predisposing cause, in the one case the mother, and in the other the maternal uncle having been insane; and when we consider the amount of mental worry single women in that condition must suffer, it throws grave doubts on such ascribed causes as domestic trouble, loss of relatives, &c., being anything more than purely exciting causes acting on an already unstable cortex, and once more points the chief predisposing cause as heredity.

We now come to the last class, namely, congenital imbeciles without epilepsy, and of these there were only eight male and ten female. In the case of one male and six females there was a definite history of hereditary predisposition, and in that of one female the mother is described as neurotic, so that the percentage of hereditary predisposition in this class is, as we should naturally expect, higher than in any other, viz. 44·4 per cent. In four of the female cases it was inherited directly from both parents, and in one of either sex directly from one parent.

From the foregoing statistics it would appear that all forms of insanity are strongly hereditary, the percentage being for all cases with a definite history of hereditary predisposition

28·7 per cent., and with a strongly neurotic history 4·1 per cent : total, 32·8 per cent.

That of all forms the congenitals hold the first place, with 44·4 per cent., is only what is to be expected. Dr. Clouston describes them as "nature's ending to a bad stock." Puerperal insanity seems to be the next most hereditary form, with 33·3 per cent. hereditary predisposition, and 7 per cent. with neurotic history, these percentages having regard to female cases only. Then follow the ordinary cases, with 29·7 hereditarily predisposed and 4·9 with a history of neurosis; 23 per cent. in general paralysis, 21·5 per cent. in epilepsy. In the last I should think hereditary predisposition is more underestimated than in any other class.

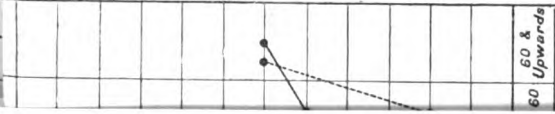
It is further interesting to note that there are more male than female epileptics, and that as regards the general paralytics the male cases are not only five times as numerous as the female, but drawn as they are from an urban population, the proportion on the male side is one in 6·6.

With regard to the ages at which mania and melancholia respectively most commonly occur, I have appended tables showing the frequency of their occurrence at different ages on the male and female sides in half-decades, from which it will be seen that while in the male cases the maniacal line rises very suddenly between the ages of twenty and thirty-five, and again sinks as suddenly between the thirty-fifth and forty-fifth years, after which it varies somewhat till the sixtieth, when it suddenly drops and scarcely rises again, the melancholic line is more level throughout, reaching its greatest height between the fifty-fifth and sixtieth year, and falling rather suddenly after sixty-five; between the ages of twenty and forty being always below, and after forty above the maniacal line. In the female cases the difference is not so marked, the chief occurring between the ages of thirty and thirty-five, after which they tend to alternate with a spurt in favour of mania towards the end of life.*

* Discussion postponed to the next meeting of the Division.

JOURN.

27



50 &
60 Upwards

123.

Remarks on the Giant-cells of the Motor Cortex in the Insane, examined in a fresh state (without hardening). A Contribution to the Pathology of the Nerve-cell. By JOHN TURNER, M.B., C.M., County Asylum, Brentwood, Essex.*

Introduction.—In these days of elaborate technique, it may not be without interest to record a method which enables us to demonstrate details of structure in the nerve-cells which have been practically untampered with by hardening fluids or other reagents.

The method consists essentially in colouring small pieces of the fresh cortex with methylene blue, and pressing the fragment out under a cover-glass. There are certain little details which must be attended to, however, before the best results can be obtained, but these are only supplementary, and serve merely to render more clear and lasting the appearances brought out as above described.

The method is so simple, and yields such instructive results, that I hope it may lead to a more general and systematic examination of the brain cells, both of the insane and the sane. It is by such means that we may hope to get a clearer idea of the changes which occur in the nerve-cells in mental and other disorders.

Naturally, as there is no sharp line of demarcation separating the sane from the insane, we should expect such changes to be largely of a quantitative rather than a qualitative nature, and yet it would seem, according to some observers, that because the changes met with in the brains of the insane are often not peculiar to those mentally disordered that their importance as factors in these latter conditions has been over-estimated.

The method before us brings out a wealth of detail in the interior of the nerve-cell and its processes, and it possesses the great advantage of showing the nerve-cells of their natural size.

The consistency of the cells can by this means be directly estimated, and we find that in a healthy state their elasticity and resistance to pressure are very great. It may either be increased or much diminished in morbid states.

In viewing whole cells and not merely optical sections, we get a more correct idea of the amount of pigment they contain, and of the number of processes they give off. As many

* Read at the General Meeting, 12th May, 1898.

as twenty dendrites can often be counted springing from all sides and parts of a cell.

I may add that I have obtained equally satisfactory results from cadavers twenty-four to thirty-six hours dead as from perfectly fresh corpses.

Procedure.—Small pieces (thin slices) of the cortex direct from the cadaver are put to soak in a solution (watery) of methylene blue (0.5 to 1 per cent.) for two to four hours. In cold weather it is advisable to place the solution and contained pieces in a warm place (on the paraffin bath). A minute shaving is next taken from the whole depth of the surface of the cortex and soaked in Farrant's solution for a few minutes; it is then placed on a slide, a cover-glass superimposed, and slight pressure made with two mounted needles, taking care that, although extended, the several parts keep their relative position as far as possible. When the film is thin enough to transmit light, place the specimen on the stage of the microscope, and continue to press it out till the cells are satisfactorily isolated, or cleared from any particles obstructing their view, watching meanwhile through a $\frac{1}{2}$ -inch objective to see that the cells are not damaged by the pressure.

When the film is satisfactorily spread out, pass it through a flame till the colour just begins to run (this can be seen under the $\frac{1}{2}$ -inch); by this means the detail in the cell is rendered sharper and more distinct, then again transfer to the microscope stage, and finally adjust the cells by due pressure.

The specimen will not be at its best till from two to four days; by this time much of the colour has left the matrix, and the nerve-cells stand out darkly and distinctly stained against a more or less colourless background.

These preparations are better examined by artificial light; they only keep, as a rule, about a fortnight to three weeks, although occasionally a specimen keeps for years. They can, however, be rendered permanent without any shrinking of the cells, and with their clearness enhanced, by the following simple means.

When the film has been mounted for a week or two, or when it is just beginning to deteriorate, the slide is put into warm water and left until the cover-glass can be slipped off with a mere touch of a needle, or better by its own weight on tilting the slide. Warm water loosens the cover-glass quicker, and I generally find that specimens stood on their *side* in a grooved porcelain dish over night to soak are ready the next morning, but if the cover-glass is not quite loose it

is very inadvisable to endeavour to get it off with the slightest force. A drop of 0·5 per cent. osmic acid is run over the film, and immediately the slide and film are placed in a flat dish of warm water for a minute. It is then taken out, dehydrated quickly in alcohol, cleared in xylol, and mounted in Canada balsam.

Although by this time it may seem that the above process is as elaborate as any hitherto used, yet we have practically our eye on the cell from the time it leaves the brain until it is finally mounted, and any change it might undergo during the process could at once be detected; but such changes do not occur. I should mention, however, that the appearances noted in the cells in the following communication were observed in the specimens previous to their treatment by alcohol, &c.

It is curious to note the avidity of the nerve-cells for the stain; those which when first looked at after mounting are only just visible, will after a few hours' time have absorbed a quantity of the stain from their neighbourhood, and are now as dark as those which from the first had been in contact with the methylene blue.

Pigment.—As is well known this deposition is generally present, and the term “physiological pigment” has been applied to the small amount seen in health, which is generally situated near the base of the cell.

Bevan Lewis* writes, “The one fact clearly established in the history of the various psychoses is that where excessive pigmentation of the nerve-cells is found, it is a witness to a bygone functional hyper-activity.”

Although pigmentation may be under normal conditions in proportion to age, this certainty is not altogether the case in the insane. Amongst them it is common to find in the still young or middle-aged, cells not merely containing a large quantity of it but distended to an enormous extent. I cannot say that I have noted excess to be peculiar to any form of mental disorder or any age; as much is found in states of chronic melancholia, chronic mania, or dementia as in general paralysis or acute forms of insanity; but in all the idiots' or imbeciles' brains which I have examined it has been either in small amount or absent.

In several cases of cerebral hæmorrhage the pyramidal cells of the lower part of the cortex have presented a very extreme degree of pigmentary degeneration. In many of them the whole of the perikaryon† was replaced by yellow or

* *Text-book of Mental Diseases*, p. 473.

† Term used in the last edition of Foster's *Physiology* to denote the body of the cell surrounding the nucleus.

buff-coloured pigment, unaffected by osmic acid; a small nucleus and nucleolus remained, which were generally pushed up against the attenuated apex. These cells were much the shape of a peg-top.

Although it is most usual for the pigment to lie at the base or along one side of the cell, yet not unfrequently a large mass of it is interposed between the apex and body, running for a considerable distance up the former, and completely isolating it from the latter. In such a case it is difficult to see how it can avoid very seriously interfering with the cell functions. Most frequently in these cases, beyond the deposition of pigment, the apex contains numerous chromophilic threads. Sometimes there are two or more distinct depositions of pigment, one at the apex and one at the base, &c. In some of the big distended bags seen at the base of a cell it is possible to trace the processes through them by means of their chromophilic material.

In the tables later on I have given roughly the amount of pigment noted in the cells of the various cases examined.

Chromophilic material.—(1) It is chiefly about the arrangement and changes which take place, due to morbid alterations, in the chromophilic material of the cell that I wish to speak.

I have no doubt that much of what I am about to describe is already familiar to those who have worked with Nissl's method, but it must be remembered that my remarks refer to *fresh* cells, which, as far as I am aware, have not been previously studied. In a short account of this method in the winter number of *Brain* (1897) I said that we had thereby proof that the chromophilic material existed in the cell in the form described by Nissl,—rods, spindles, &c,—and that these structures were not artificially produced by hardening and reagents.

Nevertheless we must not forget that we are dealing with dead elements, and if we may trust to the appearance of the cell stained with methylene blue by the vital method of Ehrlich, it would appear as though the fact of dying alters very materially the reaction of different parts of the cell to the stain.

Thus the nerve-cells of a guinea-pig, when stained by Ehrlich's vital method, showed a pale undefined nucleolus, a rather deeply stained, granular, and sharply defined round or oval nucleus, and a pale more or less homogeneous perikaryon and processes, and there was no indication whatsoever of chromophilic material, except in the long apices of the pyramidal

cells of the cornu ammonis, where it presented a moniliform or beaded appearance. But in cells taken from the same brain and soaked in methylene blue, and examined fresh after merely squeezing them out, the reaction taken on was similar to that noticed in human cells, only the chromophilic material was very irregularly arranged in a blotchy manner, and it was only at the apex that there was a slight appearance of striation.

(2) Bearing the above remarks in mind, there is no doubt that in dead nerve-cells the chromophilic material does take on a definite arrangement and form, which in the case of the healthy giant-cells and pyramids is that of rods or spindles, more or less regularly disposed, with their long axis in the direction of the long axis of the cell. Whether a similar arrangement exists in the other cells of the cortex is to my mind very doubtful. Naturally in whole cells we are not able to see the arrangement near the centre so clearly as near the boundary and in the apex and processes, nevertheless their general disposition is indicated, even in such places, with sufficient clearness as to be conclusive.

To finish the description of what I take to be a normal motor cell, as seen by this process, I may add that the shape is irregularly angular with many processes starting from all parts of the body, and almost invariably leaving the cell by a fan-like extension of the protoplasm, which rapidly thins down to the diameter of the process. The cell is darkly stained owing to the quantity of chromophilic material, the nucleolus round or oval, and sharply defined, is very deeply stained, centrally situated, and surrounded by a paler zone with no striation and an ill-defined border (the nucleus). In the apex the chromophilic material is in the form of long, (10 to 30 μ), sharply-defined lines or shorter spindles. The processes (dendrites) are scarcely coloured at all with the exception of the chromophilic material, but can be distinctly seen by reason of this latter, which is in the form of threads arranged at short distances one from another at each side and within the processes; sometimes as many as six distinct threads can be counted side by side in a dendrite near to the cell body. The cell is very elastic and resistant to pressure; it can be pressed out, and returns again on removal of the pressure to its original size,—indeed it is only with very considerable force that its contour is destroyed or the processes broken off; these latter can be made to twist about in all directions like the lash of a whip.

More or less yellow pigment is almost invariably present, generally in the lower part of the cell. The axon when distinguishable contains no chromophilic threads, and by artificial light appears of a very faint pinkish colour. It arises from the perikaryon by a small, similarly coloured eminence, also without chromatin (see Fig. 1).

(3) The most frequent departure from the normal is a granular degeneration of the chromophilic material; it breaks up in the perikaryon into irregular granules, which sometimes seem to aggregate together into large masses. At first the rods and spindles in the apex and dendrites segment, still retaining a linear arrangement, but ultimately the granules appear quite irregularly disposed. The cell eventually acquires a more or less globular shape, and the processes become either fewer in number, or are so fragile that they are parted from the cell in the process of mounting, but I am inclined to think that they do actually diminish in number, because for one thing in cells undergoing this process of degeneration we see them in all stages of attenuation.

As this change advances the perikaryon appears paler, and the granules are smaller and fewer in number; the nucleus is now often distinctly visible, stained deeper than the perikaryon and homogeneously, and frequently surrounded by a cluster of chromophilic granules (see Fig. 2).

Ultimately there remains a pale skeleton or ghost-like cell of a finely granular nature, with no trace of chromophilic material to be seen. There is generally a small, densely-stained nucleolus, and sometimes a nucleus is visible, but both may be absent. I have never yet examined films without finding some of the cells in the above described process of degeneration, but their proportion to normal cells seems to increase according to the duration of the mental disorder and age of patient. As regards the very pale, attenuated, ghost-like cells, staining scarcely any denser than the surrounding matrix, they leave little doubt on the mind of the observer that they ultimately disappear altogether. One of the most marked cases presenting numbers of cells of this character that I have yet met with was a woman aged 26, who had become mentally deranged two years previously, after childbirth, but the symptoms were not acute until shortly before her death. She was only in residence here a week, and all that time was in a stuporose condition with short intervals of excitement. There was a strong family history of insanity, her other three sisters having been affected, and an uncle on the father's side. I

believe this granular degeneration has been ascribed to post-mortem changes, but there is very little doubt that such is not the case. Cells from brains thirty-six hours old have shown normal arrangement, whilst it has been often seen in very recent specimens. Pigment is rarely in such abundance in these degenerated as in healthy cells,—indeed at the last stage it is almost absent.

(4) Another change is a partial or complete absence of the chromophilic material, noted in cells which instead of becoming attenuated and fragile, as in those previously described, are smaller and tougher, and in which there is no tendency for the chromophilic material to break up into granules; that which remains is always in distinct but thin threads, and situated at the circumference of the cell. Such cells appear dense, and stain irregularly, some parts deeply and others lightly, but the apex loses nearly all colour at a little distance from the cell, and becomes ragged and indistinct. The dendrites stain for a short distance a more uniform dull blue than normally, and show few or no threads; they have a marked tendency to curl round on themselves when detached from the matrix. The nucleolus is almost always dislodged from its normal site, and occupies a position close up against one side of the cell, or it may be a considerable way up in the apex, or right down in the fan-like projection of protoplasm, from which a dendrite arises; it is smaller and denser than normal. Very often the nucleus is invisible at other times the nucleolus is surrounded by a paler zone, and in yet a few others the nucleus is nearly as dense as the nucleolus, but always small. Such cells may be largely occupied by pigment (Fig. 4).

Quite recently (*Brit. Med. Journ.*, December 25th, 1897) Dr. L. F. Barker has published an account of certain changes in the cells of the ventral horn, &c., in epidemic cerebro-spinal meningitis. He states: "The central portion of the cell body . . . shows no well-defined Nissl bodies, but instead the protoplasm in this region stains diffusely of a pale blue colour Any Nissl bodies are situated in the periphery of the cells. Even where no isolated tigroid masses can be made out the periphery of the cell usually stains of a rather deeper blue colour. . . . The nuclei in the cells under consideration are dislodged and have come to occupy a position immediately adjacent to the margins of the cell, often causing a distinct bulging of its

periphery."* Such changes, he states, are practically identical with those which take place in the cell body of the neuron after solution of continuity of the axon which belongs to it. These changes, it will be noticed, correspond closely with those which I have just described in certain fresh cells, and which I take to be examples of cells which are no longer functionally active. It is probable that in these cases they are flung out of gear from above, the interference with their functioning being a result of a dissolution of the nervous system, and affecting them from higher disordered centres on the side of their apices and dendrites. At any rate, if the result of severance of the axon produces such changes merely by preventing the cells from functioning, I see no reason why a similar condition of cell should not be called forth from any cause which interferes with their activity.

I have met with such cells in widely different forms of insanity, *e. g.* in a female aged 26, who died after a few days' residence here of tubercular meningitis with delirium, and where there was no history of any insanity previous to her bodily disease; in a woman aged 37, who also died a few days after admission from bronchitis, with delirium and peripheral neuritis; in certain cases of general paralysis; and very frequently in secondary dementia. One of the most striking examples seen was from the brain of a male aged 56, who had been an inmate here for six years, and died of phthisis. He was admitted suffering from acute melancholia which passed into dementia. Two years after admission paresis of the lower limbs was noted; he gradually became more feeble, and was bedridden for a year before he died.

(5) The last change to be described appears to me to be a particularly interesting one. I have only seen it in five cases. The chromophilic material is completely absent from the cell and its processes. They both stain of a uniform dull blue colour, and afford a very striking contrast to the appearances seen in normal cells, especially as regards the processes, which are in no wise attenuated. The nucleolus is almost invariably central and large, and surrounded by a pale, irregularly defined area (the nucleus). As a rule, very little pigment is present. The cell does not, in most cases, show any abnormality in shape; it is large, and generally many processes are given off with the usual fan-like expansions of the perikaryon; but these processes (apex and dendrites) are extremely fragile,

* Berger (*Monatsschrift für Psych. und Neur.*, January, 1898) figures similar cells from the ventral horn in cases of general paralysis.

very slight pressure causes them to break with a clean fracture, generally at a little distance from the cell-body; on this account it is difficult to get such good preparations of them as of other cells. The following is a brief account of the five cases in which this variety of cell has been seen (Fig. 3).

Male aged 40, admitted only a few days before his death from pneumonia. He was suffering from acute general paralysis, and was stated to have had several seizures recently. The duration of his mental disorder was probably only a few months. His brain was large, and with no shrinking of the convolutions. The meninges were thin and clear, and not adherent to the cortex.

Female aged 35, weak-minded as a result of epilepsy, which she had suffered from since eighteen—a quiet, industrious woman, except shortly after admission, four years ago, when for a short time she was acutely maniacal. She died in the *status epilepticus* with pneumonia. Brain and membranes appeared healthy to the naked eye, with the exception of a small ecchymosed area in the cortex of the right island of Reil (capillary hæmorrhage).

Female aged 25; confined on the 9th, and admitted on the 17th of March, 1898. She was said to have become delirious on the 10th. When admitted she was very ill, with a temperature of $100\cdot4^{\circ}$, which rose to $104\cdot6^{\circ}$ the next day, when she died from peritonitis. There was considerable atrophy of the convolutions in her case, especially about the motor region; the meninges were healthy.

Female aged 58, many years an inmate suffering from epilepsy, with attacks of mania and fury, gradually became more and more demented and dirty in habits. Had a succession of fits for the last two or three days of her life, and her temperature rose to $106\cdot6^{\circ}$. At the post-mortem examination (twenty-eight hours after death) she was found to have atrophy of left cerebellar lobe, corresponding but relatively slighter atrophy of right cerebral lobe. There was a difference of twenty-one grammes between the two cerebellar lobes, and forty-two between the cerebral. Beyond this, to the naked eye the brain and meninges presented no abnormality. Lungs hypostatically congested; kidneys granular.

Female aged 49, a general paralytic, probably of alcoholic habits. She died in a "seizure" with a temperature rising to 103° .

The first three of these cases died of acute inflammatory disorders, but that these are not sufficient of themselves to

give rise to the changes in the nerve-cells is shown by the fact that others dying from the same bodily disorders failed to show them.

Although the changes in the nerve-cells now under consideration do not appear similar to those seen in the spinal cells, &c., of animals after administration of certain poisons* (alcohol, &c.), yet they occur in cases of a character as to render it probable that they may be the result of the action of toxins on the nerve-cells. It is noteworthy that in the five cases where I have met with this change the giant-cells were *all* affected in the same way, and apparently to the same extent; there were not, as in nearly all the other cases, some fairly healthy cells, and others in various stages of granular degeneration. This is a point I should like to emphasise in view of the almost unanimous result obtained by the experimental action of poisons on nerve-cells,—unanimous in this respect, that in all these experiments we find it stated that healthy cells are seen lying close to diseased, and that various degrees of diseased cells are seen in the neighbourhood of one another.

The condition is a form of chromatolysis, but differs in several respects from that observed by Marineseo following section of a motor nerve (*Rivista di patologia nervosa e mentale*, August, 1896).

In seventy-one cases of insanity I have made a systematic examination of a certain part of the cortex, and have endeavoured to classify roughly the results arrived at.

The ascending frontal convolution at its upper end was chosen because it contains the largest cells met with in the cerebrum, and because this region represents a part of the central end of the pyramidal tract, the great development of which is essentially a human characteristic, and which there is weighty evidence to show is intimately concerned in acts requiring skill or intelligence for their performance.

Considering the comparatively small number of cases examined, I have endeavoured to avoid attempting any hard-and-fast deductions, and have, for the most part, merely noted and roughly grouped the appearances noted.

Also in the absence of control specimens from the brains of non-insane, it is impossible to definitely enumerate and give their proper value to changes which undoubtedly occur

* *Vide* Barker, *Brit. Med. Journ.*, Dec. 25th, 1897; H. Dehrio, *Centralbl. für Nervenheilkunde und Psychiatrie*, 1895, N. F., vi, 113; C. C. Stewart, *Med. Pioneer*, August, 1897.

in the cells with advancing age, &c. My impression is, that the alterations described in paragraph (3) (the granular degeneration of the chromophilic material), are not peculiar to insanity from a qualitative but merely from a quantitative point of view. A fairly extensive study of senile cases of insanity goes to show that, apart from the degeneration which we must expect in old age, and which will affect a smaller or greater number of the cells according to other physical circumstances, this factor has no specific influence on the chromophilic material; in other words, those cells which have escaped the degeneration incidental to old age still present abundance of this material, and with the usual arrangement and form.

Neither does there seem to be any constant change corresponding to our present classifications of insanity. In those who have been deranged for many years abundance of healthy cells as regards the chromophilic material are often found; in others, dying shortly after the onset of mental symptoms, there may be manifest changes, or a complete absence of this substance and *vice versa*.

Of the seventy-one cases examined (twenty-six males, forty-five females), in twenty-five (eight males, seventeen females) the giant-cells showed what I have assumed to be a normal arrangement of their chromophilic material.

Cells with more or less advanced granular degeneration of the chromophilic material were of course seen as in all the brains which I have yet examined, but by far the greater number were of a healthy type.

I do not wish to infer that in all these cases, because this particular element was normal, that therefore the cells were healthy; in fact, in several cases there were indications which strongly pointed to this not being the case.

The following table gives details as to age, form of insanity, &c., of the cases in which the cells as regards their chromophilic material were normal, arranged in the order of their age.

It will be seen that no less than seven were over sixty years of age, and that many were the subject of long-standing insanity.

TABLE I.—Cases whose cells presented a more or less normal arrangement of chromophilic material.

No.	Sex.	Initials.	Age.	Form of Insanity.	Duration.	Cause of Death.	Pigmentation.
1	M	A. A.	17	Imbecil., ep.	From birth	Pneumonia	Very little.
2	"	G. C.	21	"	" "	Pulmon. abscess	"
3	"	T. W.	45	G. P. (2nd stage)	Over a year	Epileptiform seizure	Considerable.
4	"	H. W.	50	Acute mania	Recent	Pneumonia	$\frac{1}{2}$ to $\frac{1}{3}$ of cell.
5	"	T.	50	Advanced G. P.	Over a year	Gen. par.	$\frac{1}{2}$
6	"	E. T. G.	56	Melancholia	Some years	C. hæmorrhage	$\frac{1}{2}$ to $\frac{1}{3}$ of cell.
7	"	B. B.	59	Sec. dem.	A year	Cerebral soft	$\frac{1}{2}$ to $\frac{1}{3}$.
8	"	S. W.	61	Sec. dem., ep.	Some years	...	Large amount, $\frac{1}{2}$ to $\frac{1}{3}$.
9	F.	L. W.	15	Imbecility	From birth	Phthisis	None.
10	"	M. W.	20	Acute mania	Over a year	Mil. tubercul.	Very little.
11	"	E. B.	29	Puerp. mania	Some months	Pleurisy and pneumonia	About $\frac{1}{2}$.
12	"	A. A.	30	Acute mania	" "	Syncope	"
13	"	A. K.	33	Stupor	Over a year	Abscess of lung, mitral stenosis	About $\frac{1}{2}$
14	"	J. P.	41	Acute mania	Recent	Granul. kidneys	$\frac{1}{2}$ to $\frac{1}{3}$.
15	"	J. B.	44	Gen. par. (adv.)	Some years	Peritonitis	"
16	"	E. E.	44	Mania, ep.	Many years	Cerebral tumour	"
17	"	E. M. M.	49	Chronic mania	" "	Phthisis	$\frac{1}{2}$ to $\frac{1}{3}$.
18	"	E. J. B.	49	Delus., insanity	Over a year	C. hæmorrhage	Little.
19	"	R. B.	56	Chronic melan.	Six months	Strang. hernia	"
20	"	C. S. V.	60	Dementia	Three years	Subdural hæmorrhage	$\frac{1}{2}$ to $\frac{1}{3}$.
21	"	E. S.	62	Chronic mania	Many years	Necrosis of bone	Large amount.
22	"	M. H.	68	Senile mania	" "	Bronchitis	$\frac{1}{2}$ to $\frac{1}{3}$.
23	"	M. B.	71	Sec. demen., ep.	" "	"	"
24	"	E. B.	73	Chronic mania	" "	Pneumonia	$\frac{1}{2}$.
25	"	E. C.	80	Senile mania	" "	Subdural hæmorrhage	$\frac{1}{2}$ to $\frac{1}{3}$.

The above list contains cases where brains so far as examined did not show any cells with the partial or complete disappearance of chromophilic material, and other characters described in paragraphs (4) and (5). The other departures from the normal standard very possibly represented a more or less usual degeneration of the nerve-cell peculiar to age, &c., and not to forms of mental disease. In the next series of cases, although normal cells (as regards their chromophilic material) were sometimes noted, yet by far the greater number presented the characteristics described in paragraph

(3), indicating a more or less marked condition of granular degeneration of the chromophilic material.

Many of these (five) were old; only one was, as far as could be ascertained, a recent case of insanity, and no fewer than five of the fourteen had granular kidneys.

From this table also have been excluded cases in which any of the giant-cells exhibited the partial or complete disappearance of chromophilic material already referred to.

TABLE II.—Cases in which the majority of the cells presented a breaking up of the chromophilic material into granules (granular degeneration).

No.	Sex.	Initials.	Age.	Form of Insanity.	Duration.	Cause of Death.	Pigmentation.
1	M	R. H. H.	29	Imbecility, ep.	From birth	Phthisis	Very little.
2	"	G. W.	38	Gen. paralysis	Recent	Gen. paralysis	" "
3	"	T.	38	Gen. paralysis, demented.	Two years	" "	‡.
4	"	J. J.	40	Sec. dem.	Many years	Pneumonia	Very considerable.
5	"	T. S.	53	Gen. paralysis	Doubtful	Pneumonia, granular kidneys	"
6	F.	A. B.	24	Mania	Recent	Phthisis	Very little.
7	"	L. M. B.	30	Gen. par., acute	One year	Gen. paralysis	" "
8	"	E. S.	31	Idiot, ep.	From birth	Acute nephritis	None.
9	"	E. H.	45	Chronic melan.	Many years	Pneumonia	‡ to ‡.
10	"	H. C.	59	" "	" "	" "	" "
11	"	S. P.	61	Senile dementia	" "	Granul. kidneys	Large amount.
12	"	T. W.	69	Senile mania	" "	" "	" "
13	"	M. A. M.	77	Chronic mania	" "	Senile decay	‡ to ‡.
14	"	M.A.S.F.	79	Senile mania	" "	Granul. kidneys	‡ to ‡.
15	"	M. K.	83	" "	" "	Granul. kidneys, subdural hæm.	‡.

The third table contains all the cases which presented cells with partial or complete absence of chromophilic material, and with the other characteristics described in paragraphs (4) and (5).

I have divided off into a separate group the five cases already referred to, as there can be no doubt that they are of quite a distinct nature, and represent in all likelihood an acute pathological condition.

Most probably further investigation will reveal other changes of a pathological nature beyond those mentioned. I am inclined to think that most of the cells grouped below were no longer functionally active, and that those in which the nucleolus is found pushed up to one side, or otherwise displaced, where the staining is dense and irregular, and

the cell manifestly smaller than usual and ill formed, are the representatives of a chronic pathological condition. This contention is to a certain extent supported by the fact that in no fewer than seven out of eleven cases of secondary dementia the cells were of this type.

TABLE III.—*Cases in which the cells presented a partial or complete disappearance of chromophilic material, and with the other characters described in paragraphs (4) and (5).*

GROUP A.

No.	Sex.	Initials.	Age.	Form of Insanity.	Duration.	Cause of Death.	Pigmentation.
1	M	F. T. K.	20	Imbecility, ep.	Congenital	Phthisis	Very little.
2	"	J. E. B.	33	Gen. paralysis	Recent	Gen. paralysis	" "
3	"	W. T.	38	Gen. par. (dem.)	Years	" "	" "
4	"	R. P.	40	" "	"	Pneumonia	Considerable.
5	"	C. W.	40	Sec. dem.	"	Cellulitis	$\frac{1}{2}$ to $\frac{3}{4}$.
6	"	H. D.	48	Gen. paralysis	6 months	Gen. paralysis	$\frac{1}{2}$.
7	"	J. S. H.	53	Chronic melan.	Some years	Suicide	$\frac{1}{2}$ to $\frac{3}{4}$.
8	"	F. M.	56	Chronic mania	Doubtful	Hydrothorax, cerebral hæmor. (old)	...
9	"	W. A.	56	Sec. dem.	Years	Phthisis	Little.
10	"	J. W.	58	Gen. par. (dem.)	"	Pneumonia	$\frac{1}{2}$ to $\frac{1}{4}$.
11	"	J. M.	60	Acute mania	Recent	Bronchitis	$\frac{1}{2}$.
12	"	R. B.	60	Gen. paralysis	?	Gen. paralysis	$\frac{1}{2}$.
13	F.	E. W.	14	Congenital	Congenital	Pneumonia	$\frac{1}{2}$.
14	"	E. R.	26	Acute delirium	Recent	Tub. meningitis	Large amount.
15	"	A. A. G.	26	Chronic mania	Over a year	Exhnt., mania	Very little.
16	"	L. G.	32	Sec. dem.	Years	Decubitus	$\frac{1}{2}$ to $\frac{1}{4}$.
17	"	E. H.	33	Acute mania	A few days	Gran. kidneys	Large amount.
18	"	M. T.	33	Gen. par. (adv.)	2 years	Gen. paralysis	...
19	"	E. W.	33	Imbecile	Congenital	Pleurisy and pneumonia	Very little.
20	"	M. E. B.	37	Mania, chronic	Years	Bronchitis	...
21	"	A. M. D.	42	Sec. dem.	"	Conges. of lungs	$\frac{1}{2}$ to $\frac{1}{4}$.
22	"	H. J. C.	42	Sec. dem., ep.	"	Gran. kidneys	Little.
23	"	C. L.	46	Chronic melan.	"	Pneumonia	$\frac{1}{2}$.
24	"	J. G.	47	Sec. dem.	"	Pleurisy and pneumonia	$\frac{1}{2}$ to $\frac{1}{4}$.
25	"	F. C.	48	Chronic mania	"	Erysipelas	$\frac{1}{2}$ to $\frac{1}{4}$.
26	"	M. K.	55	Sec. dem.	"	Subdural hæmorrhage	$\frac{1}{2}$.

GROUP B.

27	M	S. G. G.	40	Gen. paralysis	Recent	Pneumonia	Large amount.
28	F.	G. S. H.	25	Puerperal mania	"	Peritonitis	Very little.
29	"	E. S.	35	Mania, ep.	Years	Pneumonia	$\frac{1}{2}$.
30	"	M. A. D.	49	Gen. par. (adv.)	Over a year	<i>status epileptic.</i> Gen. P. (seizure)	$\frac{1}{2}$.
31	"	S. B.	58	Mania, ep.	Years	<i>status epileptic.</i>	$\frac{1}{2}$.

This classification of these cases into three or four divisions is, of course, exceedingly rough, and refers only to the appearance or absence of the chromophilic material. Undoubtedly in many cases, although as regards this latter there was no marked departure from the normal, yet in other respects the cell did not present at all a healthy aspect. Thus it is no uncommon occurrence to meet with cases where the cells are of a manifestly smaller size than usual ($75 \times 45 \mu$), with fewer processes and of great toughness. These, perikaryon and process alike, stain more intensely than they would in a healthy condition, and often present a very definite arrangement of the chromatic material, especially in the apex. Such cells in alcohol-hardened specimens stain a dense blue with no appearance of striation or granulation. I believe there are instances of a sclerotic shrinking of the elements. They are found in many varieties of insanity of long standing, imbecility associated with epilepsy, and general paralysis. The fact that such cells are seen in fresh-stained films puts the genuineness of their case beyond question, although Lugaro has asserted that they are artificial productions due to hardening, &c.

General paralysis, it will be noted, figures in all three tables. Perhaps this diversity of appearance in different cases is a further corroboration of the views of some that general paralysis, as at present understood, is a congeries of symptoms embracing several diseases.

The most constant change met with so far has been in cases of secondary dementia; in seven out of eleven of these the cells have been found to be nearly or quite devoid of chromatic material, and with the nucleolus displaced, either quite against the side of the cell or up in the apex.

It is, I think, a point of considerable interest that one is enabled to demonstrate a marked departure from the normal in so many cases of insanity (64.7 per cent.), notwithstanding that in several of these the brain and coverings showed nothing abnormal to the naked eye, and no fewer than seven were of recent origin.

Phagocytic Action of the Leucocytes on the Nerve-cells.—A few words regarding the phagocytic action of leucocytes on the nerve-cells. This appearance, which was first described by Sir John Batty Tuke, and subsequently by myself in the *Journal of Mental Science* (January, 1897), is often very strikingly shown in the freshly squeezed-out films. The invading bodies stick to the nerve-cells, so that in the mount-

ing and preparing they are not parted from it, but are seen *in situ*.

In many cases nerve-cells are met with large portions of their substance, as it were, scooped out, and one or more leucocytes lying in the cavity. Very often the whole cell is encrusted with leucocytes, and not unfrequently but little of it remains beyond the nucleus.

Not only is the perikaryon attacked, but the apex also is sometimes partly eaten through. Instances also occur where the apex consists of short, blunted, nipple-like eminences, suggesting that it has been completely destroyed by this agency.

Probably the dendrites are similarly attacked and destroyed; and I believe that the degenerated spherical cells seen are sometimes reduced to this form by the destructive action of leucocytes on their apex and processes.

Although, with the exception of Sir J. B. Tuke and myself, this phenomenon does not seem to have attracted any attention, I am persuaded that it is of enormous importance from a pathological point of view. If I am correct regarding the destruction of the processes by this action, it is easy to imagine the serious consequences of this lesion, which must interfere greatly with nervous and mental actions.

I may say that I have hardly ever examined a section of the human or animal (guinea-pig, rat, pig, and cow) brain without meeting with what I take to be instances of this action; and I have photographs from the guinea-pig's brain showing a very decided action of the leucocytes on some of the nerve-cells. The very universality of the process is to my mind a mark of its pathological importance. If leucocytes are endowed with this destructive action on nerve-cells under certain conditions, it does not seem surprising that amongst the multitude of cells in the cortex some should be in a fit state to call forth this function on the part of the leucocytes; or if, as I have suggested, the leucocytes take on this function when blocked within the pericellular space, the exhibition of this phenomenon here and there is only what might be expected in most cases.

But there is a great difference in the importance to be attached to these few isolated instances of cell destruction, and those cases (common enough in general paralysis and other varieties of insanity) where almost every nerve-cell in certain layers is encrusted with leucocytes, and more or less destroyed.

Although, perhaps, it is more common to find leucocytes attacking diseased cells, yet they apparently do not confine themselves to such. Cells are met with which have the characters of normal cells, and which are seen to be undoubtedly undergoing partial destruction by leucocytes (Fig. 5).

In conclusion, there are a few remarks on the nature of the chromophilic material and its relation to cell functioning I should like to make.

Sir William Gowers, in an address on the neuron and its relation to disease (*Brit. Med. Journ.*, November 6th, 1897), referring to some of the latest researches on the intimate structure of the nerve-cell, regards it as proved that the nerve-fibrils pass uninterruptedly through the nerve-cell from dendrite to axon. If such be the case, then, as he states, our old conceptions that the nerve impulses originate in the cell entirely disappear, and we must give up the idea that the nerve-cells are sources of nerve impulse.

This would mean nothing less than an entire revision and remodelling, and, indeed, in many cases an entire abandonment of existing hypotheses regarding nerve actions and the psychological changes which accompany them. The distinction drawn between sensations and thoughts supposed to correspond to molecular changes in cells and fibres connecting cells respectively (on which so much of our modern psychology is based) is swept away. For if a nerve-cell is merely a meeting-point of a number of totally distinct and insulated fibrils which have no relation one to the other beyond propinquity, then to refer to feelings and thoughts as on the physical side accompanying molecular changes in cells and fibrils is a meaningless phrase. At the very least we must shift our ideas of the physical seat of these changes to the terminals of the dendrites and the intervening matrix.

However, in spite of the weight attaching to the opinion of such an authority as Sir William Gowers, it may surely be permitted one in the present state of our knowledge to pause before acquiescing entirely in this derogation of nerve-cells.

The picture seen in normal fresh nerve-cells of certain (? motor) types when treated by methylene blue has been previously described in this paper, and is besides well known in hardened cells by the observations of Nissl and others, and therefore need not be recapitulated, but there are one or two points which must be referred to here.

In views of whole cells it is clearly seen that the coloured

spindles, or rods, or threads (their shape varies in different parts of the cell) are perfectly distinct one from another; in other words, these coloured bodies appear as if embedded in a more or less colourless ground substance. This structure of the cell has been described (Berger, *Monatsschrift Psych. und Neur.*, January, 1898) as a fine meshed scaffolding in which the Nissl flakes lie. And on making sections transverse to the long axis of the giant-cell, the coloured bodies show as separate blue granules lying in a colourless ground substance.

These appearances quite preclude us from regarding the Nissl bodies, whatever their function may be, as insulators of nerve-fibrils.

Whether the chromophilic material acts in some way as a guide to nervous impulses, or whether it has some relation to the cell energy, or whether it has quite other functions, must be left at present for further investigation.

The achromophilic substance is probably that which is concerned in the conduction of nerve impulses, and it has been asserted not only that this is of a fibrillar nature, but that fibrils have been traced uninterruptedly from axon to dendrite.

Even were this statement conclusively proved,—and for the present I think we are entitled to regard it as an open question, considering the very minute structures we are dealing with, which necessitate very high magnification and very special methods of staining for their elucidation,—we are not thereby justified from our imperfect knowledge of the conditions which govern nerve impulses, in arguing that because fibrils can be traced uninterruptedly through a nerve-cell, that the nervous impulses passing along these fibrils are insulated from all others in the cell, and that they must necessarily pass unaltered and uninfluenced by neighbouring impulses.

If we compare the cells of the sigmoid gyrus of one of the lower animals (guinea-pig, pig, cow) with those of the motor region in man, we notice that in the former the chromophilic material is indistinctly marked off from the ground substance, is irregularly disposed, and vaguely outlined; there is, except perhaps at the apex, but little attempt at striation or the formation of definite threads. And further, if we compare either the motor cells of the cerebrum of one of the lower animals with the anterior cornual cells of the cord, or the frontal cells of man with the pyramidal tract cells and ante-

rior cornual cells, we notice a similar difference: on the one hand, in the anterior cornual cells of the animal the chromophilic material, especially in the dendrites and superficial parts of the cell, is more distinctly differentiated, and forms a more definite pattern than in the cells of the cortex; and on the other hand, in man the anterior cornual cells and the giant-cells exhibit a much more distinct separation of the chromophilic material from the ground substance, and a more regular disposition of the same than is seen in the frontal cells.

The very precise striation of the chromophilic material in the large anterior cornual cells has led Nissl to take these as the type or general standard of motor cells.

It seems quite feasible that this difference in structure represents modifications in the functions of the cells, those concerned with reflex acts having the most definite arrangement of their chromophilic material, and those concerned with voluntary acts having the least. At any rate, in the lowest and most highly organised cells—the spinal-cord cells, which are concerned with limited reflex acts—we meet with a very definite arrangement; and in the higher and least organised cells, which we have weighty reasons for regarding as concerned with voluntary and varying acts, we no longer find such a precise disposition of the chromophilic material, probably because the ever-changing currents (supposed to pass along the uncoloured ground substance) in these latter will not have the same tendency to map out definite paths as the constant currents concerned in routine acts have in the former.

On this supposition the reason why the pyramidal tract cells in animals present a less definite pattern than those in man is due to the fact that their reflex and automatic acts are so much more largely carried out through the agency of spinal-cord cells.

Without venturing any opinion as to the precise rôle which the chromatin substance plays in the function of the cell, there seem to be some grounds for asserting that the regularity with which it is disposed is an index to the degree of organisation to which the cell has arrived in the execution of definite actions of a routine nature—the lowest and most highly organised having the most distinct and regular, and the highest and least organised the least regular pattern.

Reference to Figures.

- 1.—Normal nerve-cell ($69 \times 57 \mu$, nucleolus $5 \times 6 \mu$), showing the arrange-

ment of chromophilic material in the perikaryon and apex, and the numerous dendrites with fine threads. From a woman aged 59. Chronic melancholia.

2.—Granular degeneration of the chromophilic material, from the same case as above. In the apex the threads are seen to be broken up into linearly arranged segments. The perikaryon measures $99 \times 49 \mu$. The nucleus ($17 \times 12 \mu$) is deeply stained, and with clusters of granules around its margin. The nucleolus measures 6μ .

3.—Large (? swollen) cell ($210 \times 83 \mu$) stained of a pale, dull, uniform blue, and showing no trace of chromophilic material, either in perikaryon or processes; the nucleus is dimly visible, and centrally situated; the nucleolus measures 10μ . The apex breaks up into a pale, fan-shaped expansion. From a case of puerperal mania aged 25.

4.—Dark, irregularly-stained cell ($90 \times 63 \mu$), showing the pale, ill-defined, ragged apex, and peripherally situated nucleolus ($8 \times 5 \mu$) surrounded by a paler zone. The processes are few, show no chromatin, and curl upon themselves when detached from their matrix. From a case of secondary dementia in a man aged 56.

5.—Cell with normal arrangement of chromatin, showing a leucocyte destroying the apex.

Colitis. By ALFRED W. CAMPBELL, M.D., Pathologist, Rainhill Asylum, Lancashire.*

By colitis one understands a disease characterised anatomically by an ulcerative or membranous affection of the large intestine, and signalised clinically by acute sanguinolent or muco-purulent diarrhoea, *plus* pyrexia and prostration.

Certain lengths of the intestine are specially prone to disease, viz. the cæcum and first part of the ascending colon, the dip of the transverse colon, the lower part of the descending colon, the sigmoid flexure, and the rectum.

On anatomical grounds it is justifiable to divide the cases into two groups:—(a) Membranous colitis. (b) Ulcerative colitis.

The first variety is characterised by the formation on the surface of the mucosa of a thick membrane, dark in colour, rough and harsh to the touch, and composed of disintegrating epithelial elements, fibrin and red blood-corpuses, inspissated mucus and leucocytes, solids deposited from the fæces, and swarms of bacteria. This membrane may form in patches, or it may spread itself over the entire surface of the bowel. It does not tend to separate.

Similarly, in the ulcerative variety the whole surface of the large intestine from cæcum to anus may show disease, or it may be limited to the localities above specified. The ulcers

* Abstract of a paper read at a meeting of the Medico-Psychological Association in London on May 12th, 1898.

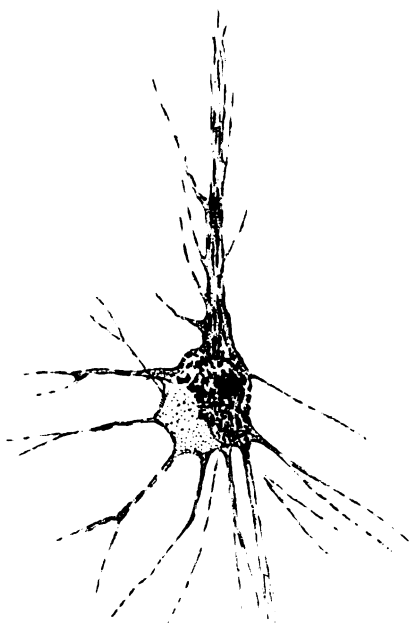


Fig. 1.

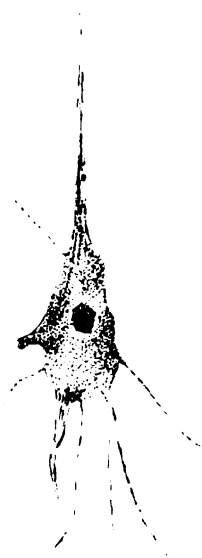


Fig. 2.



Fig. 5.

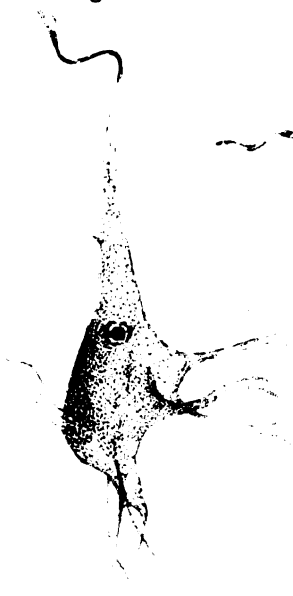


Fig. 3.



Fig. 4.

vary in size and shape, their edges are angry-looking, undermining is a pronounced feature, and the floor is usually formed by the muscular coat. In some instances they perforate.

Not only in membranous, but also in ulcerative colitis it is not uncommon to find a membranous affection of the lower few feet of the small intestine.

In both conditions the glands, into which the lymphatics from the large intestine empty, undergo inflammatory enlargement and occasionally suppuration.

In females suffering from either variety, a complication in the form of a sloughing cystitis and vaginitis is common. This arises from the passage of fæces containing the noxious virus into the vulva.

According to the reports of the Commissioners in Lunacy, the diseases colitis, diarrhœa, dysentery, and enteritis accounted for 1·56 per cent. of the total deaths occurring in English asylums, &c., in the year 1895, and 2·35 per cent. in the year 1896.

Out of a total of 9628 deaths occurring in the four Lancashire County Asylums during the years 1883 to 1896 inclusive, 247, or 2·56 per cent., were attributed to the four above-mentioned diseases.

It definitely appears that colitis affects persons of advanced or moderately advanced years much more frequently than younger members of the population.

With the single exception of chronic interstitial nephritis there is no disease of abdominal or thoracic organs which can be coupled with colitis, or in any sense regarded as an ætiological factor in its production. Out of twenty eight cases of ulcerative colitis collected by the writer, chronic interstitial nephritis was found in eleven, and out of eighteen cases of membranous colitis the same disease existed in eight. The association between these two diseases has been already indicated by Hale White in an analysis of a series of cases of colitis occurring at Guy's Hospital.

There is likewise no special mental or nervous disorder with which colitis can be associated.

General debility, be it the result of physical illness or chronic mental complaint, brings susceptibility to colitis. This point was determined in 78 per cent. of the writer's cases.

Colitis may appear at any season of the year, but is more prevalent during the late autumn and early part of the winter than at other periods.

Though the disease does occasionally break out in epi-

demic form, single isolated cases are often met with. That the infective virus gains its entry *per os* is likely, but not definitely proved. Concerning its infectiousness, this term can only be applied in a limited sense, for it is rarely communicated to sane individuals exposed to most of the same conditions as those that suffer. I refer to nurses and attendants on the insane, but that the disease is, at any rate, to some extent infectious is indicated by the fact that during the past two or three years the deaths from colitis in Rainhill Asylum have been far less numerous than they formerly were, and this diminution has been synchronous with the adoption of measures for the isolation of such cases, for the disinfection or destruction of their excreta, and for the therapeutic treatment of the condition by free lavage of the large bowel with copious injections of bactericidal enemata.

Abnormal constipation or coprosthesis, as well as other mechanical causes, are factors of no practical import in the production of colitis.

In the same way grounds for all toxic causes, *e. g.* decayed fruit, spoilt food, or impure water, are all hypothetical.

A microscopic examination of the freshly voided fæces for the *Amœba coli* has always been attended with a negative result, and it is certain that that organism is not related to colitis.

In a long series of cases plate cultivations of the fæces have invariably yielded abundant colonies, sometimes pure cultures, of a micro-organism bearing all the characters, morphological, biological, and chemical, of the *Bacillus colicomune*, but differing from normal samples of that organism in the possession of a higher degree of virulence, and I am forced to conclude that the bacillus stands in close pathogenic relation to colitis.

In regard to its virulence, a series of experiments conducted in Professor Rubert Boyce's Laboratory (Liverpool) show that doses of from 1 to 3 c.c. of a broth culture, forty-eight hours old, suffice to cause diarrhœa and early death in rabbits and guinea-pigs when injected subcutaneously or intra-peritoneally. In some instances a like result attended the administration of cultures of the organism *per os*.

Points in favour of the suggested specific pathogenicity of this bacillus are—

(1) In other forms of dysentery, tropical, epidemic, and sporadic, a similar organism of extreme virulence has been isolated (Celli and Fiocca, Maggiora, Arnaud, and others).

Celli named the organism which he isolated the *B. coli dissenterico*.

(2) There is abundant proof that, under certain conditions, the *B. coli* may assume a condition of great virulence.

(3) Colitis is a disease which we should expect, above all others, to result from an increased virulence of the *B. coli*, because the large intestine is its normal habitat.

A microscopic examination of various tissues, *e. g.* small and large intestine, lymphatic glands, kidneys, &c., reveals the presence of two principal forms of bacteria, a short rod-shaped bacillus similar to that above mentioned, which predominates, and micrococci. It has been determined that these micrococci are of the pyogenic variety, and that they play a rôle in the production of ulceration is more than probable.

In a few cases only was the blood examined bacteriologically. In three instances cultures of streptococci were obtained, but the *B. coli* was never found. The results in this direction cannot be considered conclusive.

Discussion.

The PRESIDENT.—I am sure we are all indebted to Dr. Campbell for his most interesting paper. The disease he has discussed is one which we see more or less in asylums, and one that sometimes gives us extreme trouble. I was very much interested in his remarks as to the causation and symptoms of the disease. I should especially have liked to hear more about those apparently inexplicable and solitary cases of fatal colitis that one meets with now and again in institutions otherwise absolutely free.

Dr. GOODALL.—I did not quite catch, in Dr. Campbell's very interesting paper, reference to the insanitary state of asylums, of which no doubt he is well aware, and with which this disease is so commonly associated, namely, the condition of ventilation, sewers, faulty and defective drainage, trapping, &c. The disease is one which I believe is especially found in the older asylums. In one with which I was associated it was very common, and with the improvement in the sanitary condition, particularly the drains, the death-rate gradually diminished. Enteric disease and colitis seemed to occur in the autumn of the year, and they would disappear with attention to the sanitary state. I do not thereby wish to throw any doubt on the organism, and I am very glad it has been worked out, and I hope it may prove to be correct. The difficulty is to see how the organism can be conveyed with sewage emanations, sewer gas, &c., because I believe the pathogenic organisms have not been demonstrated. It may be possible to find out whether this organism is present in sewer or other gas, and it would be interesting if it could be grown by means of experiment, and a culture might hereafter be injected. We should then have an antitoxin which would be very useful.

Dr. JONES.—I am in charge of what is absolutely a new asylum, and I am therefore not quite a believer in the "insanitary" origin of colitis. I have here a few notes taken hurriedly of about eighty-five post-mortems in cases of colitis—that is to say, out of a death-rate of 1450 no less than 85, nearly 6 per cent., have been due to colitis. I classified these according to ages, as follows:

Between 20 and 30	.	.	.	.	.	3 males.
" 30 " 40	.	.	.	.	.	10 females, 10 males.
" 40 " 50	.	.	.	.	.	11 " 8 "
" 50 " 60	.	.	.	.	.	4 " 5 "
" 60 " 70	.	.	.	.	.	13 " 5 "
" 70 " 80	.	.	.	.	.	7 " 5 "
" 80 " 90	.	.	.	.	.	2 " 2 "

It will thus be seen that my statistics correspond pretty closely with those of Dr. Campbell. Then as to the time of year. Dr. Campbell has mentioned the autumn. I think in the autumn and the spring there is a very distinct increase in the death-rate. For instance, in my cases there were in—

January . . .	1 of each sex.	July . . .	2 females, 1 male.
February . . .	8 females, 2 males.	August . . .	6 " 7 males.
March . . .	7 " 2 "	September . . .	7 " 7 "
April . . .	5 " 4 "	October . . .	4 " 7 "
May . . .	2 " 0 "	November . . .	2 " 4 "
June . . .	1 " 1 male.	December . . .	2 " 2 "

Dr. Campbell referred to the amœba, and also to the *Bacterium coli-commune* as being present in the normal colon, but the difficulty is how one or other of these gets into the blood. My observations post mortem do not quite coincide with Dr. Campbell's as to the infrequent appearance of the stercoral ulcer. I have often seen it, and if once you get an abraded surface there is every opportunity for these organisms to infect. I am glad to hear so much distinction between the membranous and ulcerative varieties of colitis. I had hitherto looked upon the membranous as the extreme and acute sloughing form of the same disease, modified perhaps less by a difference in the toxin than by the resisting power of the host. Acting upon the idea that this disease was distinctly contagious or infectious, we are, I am happy to state, almost entirely free from it now at Claybury. Everything in the shape of clothing or soiled linen that comes away from the patient is disinfected, first in 1 in 20 of carbolic acid, afterwards it is taken for further disinfection into a "Washington-Lyons." I was very much struck by the fact that the nurses who gave the rectal injections occasionally took colitis from the patients.

Dr. RAYNER.—The subject which Dr. Campbell has dealt with is such a wide one that one cannot enter into it at all fully. In my own experience I recollect that colitis was very much diminished in wards in which cases had frequently occurred by the substitution of block-wood and polished floors for the old washed stone floors. I cannot help thinking that a predisposition is given by imperfect mastication, the food continually passing through the bowels imperfectly digested, and acting as an irritant.

Dr. CAMPBELL.—I am very much obliged for the interest which my paper has aroused. In regard to Dr. Goodall's remark concerning the association between colitis and any insanitary condition in an asylum, I regret that I did not bring the matter forward in my paper. I intended to, but it has been very much cut down. I do not think, as far as my own investigations go, that there is any association between insanitary conditions and colitis, although I believe that such might play a part in their production. At one time I suspected a certain ward. It was closed, and a careful examination made, but nothing was discovered to support my suspicion. We then concluded that it must be the condition of the patients. The ward was one in which chronic epileptics and depraved patients were kept; and this really was one of the things that set me thinking about the physical conditions which assist in bringing about colitis. Dr. Jones' remarks are very interesting, and I am much obliged to him for bringing his figures here. His age statistics agree very well with my own. I am not absolutely certain about the season of the year, namely, that it is more common in the autumn. There is no doubt it does occur in all seasons, and

quite recently I have had two cases, the only two for a year. I cannot find proof of the disease having been directly passed from one patient to another, and on questioning my colleagues I could only find instances of two cases in which the disease had been communicated to attendants in the asylum.

*The Industrial Training of Imbeciles.** By G. E. SHUTTLEWORTH, B.A., M.D., Medical Examiner of Defective Children, London School Board; formerly Medical Superintendent, Royal Albert Asylum, Lancaster.

It occurred to me that, on the occasion of our division meeting at an asylum which has made special provision for the care and treatment of imbeciles, apart from the other patients, a brief dissertation as to forms of industrial training appropriate to such might not be out of place.

In the training of imbeciles, I think that all experience teaches that educational processes should be moulded with a view to ultimate industrial usefulness. In school, indeed, the senses must be sharpened, the muscles disciplined, and the intellectual powers exercised; but after all no great degree of scholastic proficiency can be expected. I do not mean that where sufficient capacity exists, the inculcation of the "three R's" should not be attempted, for doubtless the imbecile's enjoyment of life will be increased by an ability to read books, to correspond with friends, and to add up figures. When the patient belongs to a higher social grade, a larger share of time may be devoted to such studies, though even with such it must be remembered that more is learnt by the hand than by the head, and manual training is often the best means of mental amelioration, producing as it does tangible results which are a source of satisfaction both to teacher and taught. But with patients belonging to the pauper class, it seems hardly justifiable to consume a large proportion of the plastic period of youth in what we ordinarily term "school work." Rather should it be utilised for the acquirement of technical skill in some industry which will enable the imbecile to produce something towards the cost of his maintenance. It is true that in many cases appropriate physical exercises will be needed as a preliminary measure to correct motor irregularities which would militate against precision in handicraft. *Athetosis* may be adduced as an instance of this, and it is wonderful how much may be done in helping

* Read at the Spring Meeting of the South-Eastern Division at the Middlesex County Asylum.

patients so affected to control purposeless movements by means of such exercises as those of the "peg-board," tying knots in string for macramé work, and the picture-perforating of the Kindergarten system. Drill with dumb-bells, wands, rings, &c., is also useful in strengthening powers of grasping, often deficient with imbeciles. Many of the occupations of the Kindergarten form attractive as well as instructive introductions to the employments of real life, and with younger children are valuable in forming habits of industry, as well as cultivating deftness and dexterity.

Passing now to consider the kinds of work best suited for imbeciles, I should be inclined to assign the first place to outdoor work, wherever practicable. Not only is the general health (apt to be feeble) benefited thereby, but in every garden and on every farm there are many small but essential jobs which may be done by an imbecile, after a little training, almost as well as by a paid labourer. A measure of supervision is necessarily required; but with this, weeding amongst crops, harvesting, the feeding of cattle and even the grooming of horses may be satisfactorily accomplished by such. I was interested to hear from Mrs. Burgwin (superintendent of the London School Board special classes for feeble-minded children) that several of her ex-pupils (not far removed from imbecility) are employed as stable helpers and are well reported on. In a dairy farm the preparation of the stall food for the cows, which is more or less a matter of routine, but takes a good deal of time, may be efficiently carried out by imbeciles; and at the Royal Albert Asylum our boys helped in the milking, a cowman afterwards going round to ascertain that each cow had been properly "stripped." In Denmark, however, we found (with Dr. Ireland) that "milking is considered too nice an occupation for imbeciles;" and at the large imbecile institution at Ebberodgdard, three hired dairymaids performed this duty. In England, and especially in the metropolitan district, the prospects of profitable farming by imbecile labour are necessarily dubious; but in America we find superintendents (like Dr. Doren, of Columbus, Ohio) claiming to run a stock farm in this way to a profit. Fruit growing and tinning seems to be carried on remuneratively in some of the American institutions for the feeble minded; and that for the state of California boasts of the possession of 1670 acres of fertile land, with "everything on it that the garden of Eden had, except perhaps the forbidden fruit!"

In passing, I may put in a plea for the occasional outdoor employment of imbecile girls as well as boys. Much depends on the custom of the country, and in a Norwegian institution I have seen girls gardening with a will, and even constructing paths; and in Denmark the girls in Dr. Keller's industrial institution are similarly employed. Now that we have lady gardeners at Kew, and women employed in our market gardens, there seems no reason why our female imbeciles should not have the advantage of work in the fresh air in such light occupations as hay-making, picking fruit and vegetables, &c. Laundry work (the staple employment of feeble-minded women) would be no worse done were some of the workers occasionally permitted to vary their steamy and enervating industry in the way above described.

Of course, industrial training must be considered in relation to the probabilities of the imbecile's employment in after-life. The training institution has to endeavour to fit its pupils for life in the outer world under the care of friends; and for the town-bred imbecile suitable indoor occupation must be found. As a rule, some simple handicraft, which can be practised at home, or in a small shop, rather than in a factory or other large establishment, is to be preferred, and shoe-making, tailoring, mat-making, brush-making, &c., may be the means, if not of livelihood, at any rate of contented occupation under a modicum of supervision. But speaking generally, in spite of an experience at the Royal Albert Asylum of 15 per cent. of patients discharged after full training earning wages, the struggle for existence in the outer world seems too keen for the average imbecile, and for the majority some permanent tutelage is necessary.

This seems to be a duty of the State rather than a matter for charitable provision; and it is satisfactory to see that the county of Middlesex has accepted this duty in no grudging spirit. Those of you who have visited the idiot annexe will have seen how admirably equipped the new building is for the industrial training of imbeciles; and one advantage of its connection with a large county asylum is that the latter supplies a convenient market for the industrial products. Farm, garden, and dairy produce are, of course, always in demand; and carpentering, tailoring, shoe-making, mat-making, brush and basket-making, sash-line making, book-binding, and even printing (which appears to be carried on at a profit at the imbecile establishments which run a press), will minister to the daily needs of the establishment, as

will also the sewing, laundry, and kitchen work of the girls.

The selection of the particular occupation best suited for each imbecile involves on the part of those in charge careful observation and some experience; and valuable hints may be gathered in the course of the Kindergarten instruction. It is important that those who preside in the workshops should be regarded as teachers rather than as productive workers themselves, as so much depends upon the painstaking individual tuition accorded to each pupil. A tactful industrial trainer is, indeed, an instructor not only of the hand and eye, but of the mind also.

Experience leads me to say that some slight recompense for work well done, either in money or in kind, will form a powerful incentive for imbeciles to "put their back into their work." A penny a week thus paid on the satisfactory report of the industrial trainer will produce more than a shillingsworth of extra work; and I see powers are given in the new Lunacy Bill to recompense, to the extent of one tenth of its value, work done by patients. I do not know how this scale will be regarded by trades unionists amongst the lunatics; and even with aspiring imbeciles one must be prepared for such a criticism as that mentioned in a recent report of the Eastern Counties Asylum. A youth, who had distinguished himself in button-holing, being told that next week he should try his hand at a suit, retorted, "I suppose I shall only get a penny a week if I make a suit, and I think these are *sweating* wages!"

If time permitted it would be interesting to refer to the miscellaneous and sometimes curious employments carried on by imbeciles in various countries (*e. g.* cigarette-making in the school at the Hague), but I have already exceeded my limits, and must now close these discursive observations.

Discussion.

Dr. BEACH said the paper was a very practical one, and must appeal to every one in the room, whether they have had to do with imbeciles or not. He spoke of children he had had at Darenth who were employed in the wards and workshops, but where there were opportunities, he said, a farm was very desirable. As an instance of the benefit of training imbeciles he mentioned the case of some boys who afterwards became soldiers, and to whom the bed-making learnt in the asylum was of use. With regard to training in voluntary asylums, where all children have to be discharged at a certain time, he said that if not taught a trade they would have to go into the workhouse, so that in these cases trades were useful. He also alluded to a proposal that had been made for the castration of imbeciles.

The CHAIRMAN said he agreed with Dr. Shuttleworth that it was not right to spend county money in trying to educate such children to add up long additions or enumerate the kings of England. These could be of no possible use to the children, as they would have to spend most of their time under institutional discipline, and quite probably on the first series of fits would lose their acquisitions; but he thought that it was perfectly right to teach them some simple handicraft, or how to engage in agricultural pursuits. The chief points that were aimed at in the education of these children at the annexe were attained by a number of small class rooms, so that the children's attention was not easily distracted; short lessons, so that they need not become tedious or irksome, daily repeated, so that they might remember them; and the importance of not allowing the teacher or workman to work himself, but only to instruct the children.

Dr. BOWER congratulated Dr. Shuttleworth on his paper. He thought it a great advantage to have such children trained, and though in years to come they may crowd his wards with useful imbeciles, a few may also turn out as useful members of society.

Remarks upon the term "Weakmindedness," with Observations upon the need of Definite Nomenclature for Cases of Congenital Mental Defect which are not certifiable as Imbecile or Insane. By A. R. DOUGLAS, Deputy Medical Officer, H.M. Prison, Portland.

THE term "weakmindedness" is a most misleading and ambiguous one, and it is imperative that it should receive early attention. It is confusing from the very comprehensive scope of its significance, and altogether so capable of such extremely varied and general interpretation that it is rendered worthless, and perhaps worse than worthless, for the purposes of actual practice. By some, the slightest departure from the normal mental standard is regarded as "weakmindedness," although the case in question might be one of mere eccentricity; by others, again, the term is accepted in its full comprehensiveness,—the lunatic and imbecile, the idiot and person of defective intellect (who cannot be classified with either of the above three divisions), are all included together, and in the absence of a qualifying statement, confusion is the result. It is most improbable that any two alienists would be likely to interpret the meaning of the term in the same way, and the Commissioners in Lunacy, who are most strict in the matter of validity of certificate, would certainly not accept it *per se* on account of its ambiguity.

Every insane person is weakminded, so are the idiot and the imbecile, but there are a vast number of individuals who, although they are neither insane nor imbecile, are congenitally below the normal standard of intellect, and I submit that it

is these who should be described as weakminded if this term is to be retained at all. Such cases are very numerous amongst the criminal population, and it is to be regretted that there is at present practically no legislation affecting them, and in courts of law, no exact and distinctive definition which would ensure recognition of their defective mental condition, with consequent modification of the legal attitude towards them,—nearly all such delinquents being held to be *compos mentis* and responsible for their actions. This is, I consider, a terrible injustice, and one which demands early redress; it is neither right nor just that the clever rogue and his weakminded brother criminal should have the same measure of punishment meted out to them. Surely, then, the creation or adoption of a definite and distinctive form of nomenclature for these cases of congenital weakness of mind is urgently needed, and when obtained will do much towards securing due and proper consideration in courts of law for the mental condition of these unfortunates.

At present the diversity of opinion as to what the term "weakmindedness" ought to be held as implying is very great, and is perhaps only equalled by the trouble, and often confusion, so frequently resulting from its use. For the purpose of describing these cases of congenital feebleness of mind which are neither lunatics nor imbeciles, it is impossible to select one and depict it as an example, and to say that its individual mental characteristics are all constant and common to the others; such a description must necessarily be a general one, for no two instances are alike, and the variation in degree is extensive. The salient features of the higher grade cases are, for the most part, extreme vanity and conceit, hyper-sensitiveness, eccentricity in special directions, and stubbornness, with irritability and great liability to ebullitions of temper on trivial occasions. They display more or less incapacity for learning much, but possess remarkable tenacity of memory for scraps of information picked up in a desultory and flighty way. Their manner and conversation does not always afford much information as to their mental state; but if they are carefully observed for a sufficient period, and their general conduct noted, their peculiarities gradually become apparent. In nearly every instance will be found that condition of "mental restlessness," with its attendant features of inability to conform for any length of time to any system of regularity or order, laziness, and incapability for any steady and sustained effort of work, and an almost insatiable desire

for constant change and novelty, which, in criminals of this class, is often evinced in curious ways. The lower grade cases are, of course, a nearer approach to the condition of the mild imbecile, and do, to some extent, in physiognomy, manner, and conversation, exhibit their mental defect. After four years' experience as assistant medical officer at a large and deservedly celebrated asylum for idiots and imbeciles, I invariably found that the criminal instinct was most frequently noticed in cases of very mild imbecility which, in appearance, manner, and conversation, presented little or no variation from the normal. I recollect one instance in particular, a thoroughly irreclaimable and dexterous thief, and a most shameless and plausible liar. This youth in his depredations frequently displayed a refinement of design and an amount of cunning and astuteness which were really wonderful. Now had this individual (and there are very many like him) not been fortunate enough to be under care in an institution, what would have been his fate? Most assuredly we should have sooner or later found him in one of our convict establishments after having done half a dozen or more previous shorter sentences in local prisons. This case in particular is one of the number illustrating the need of the careful and intelligent observation which ought to be bestowed before such persons are held to be accountable for their actions. Although, to a casual observer, this youth appeared upon the surface to be in a way reasonably normal, yet after a time it would have been discovered that he was undeniably defective in intellect, that he could neither read nor write correctly, was extremely ignorant generally, had a fiendish temper, and his distorted mental action as a whole would, in course of observation, have become apparent.

I certainly concede the fact that it would be difficult to prove from an ordinary cursory examination of these cases, that many of them were irresponsible for their acts, but careful observation extended over a sufficient period would undoubtedly go to show that the majority ought not to be regarded as responsible persons, whilst at the same time it would be impossible to certify such as being either insane or imbecile.

It is a regrettable fact that a certain proportion of these cases are to be found in the convict prisons, where their mental deficiency is sooner or later recognised; but why should this recognition of their infirmity not take place before sentence was passed upon them, and thus ensure their being differently

dealt with? There can be no doubt that they have hitherto not received the amount of consideration which their afflicted condition demands. Provision is made for lunatics and imbeciles, but for these cases, which stand between sanity and a mild degree of imbecility, and which, to my mind, are every whit as deserving of consideration as the lunatic and imbecile, little or no notice is taken; their mental defect is not sufficiently marked to secure for them a haven in the asylum, and they drift about from the vagrant ward of the workhouse to the gaol, and ultimately become convicts; their lot is more pitiable really than that of the insane, they drag out a miserable existence, a considerable part of which is spent in prison, with occasional interludes of squalid liberty, during which they are a nuisance and very frequently a danger to society. At the present time these unfortunates really appear to fare best in the convict prison, for there, as I have already said, their mental condition is recognised and allowances are made for it, and they are ultimately sent to the penal establishment set apart for invalids and convicts of weak mind. There can be no doubt that such cases ought never to come to prison: whilst there, they are a source of endless trouble and anxiety; besides, the punitive and preventive sides of the question have little or no meaning for them, and these objects I do not believe are attained in one single instance. For them some special means of permanent disposal ought to be provided; when at liberty they are simply the victims of their own low grade individuality, and what is worse, they propagate descendants broadcast, the majority of whom go to swell the ranks of insanity, drunkenness, and crime.

Heredity in Relation to Mental Disease. By W. F. FARQUHARSON, M.B. Edin., Assistant Medical Superintendent, Counties Asylum, Carlisle.

In the following paper, dealing with the hereditary transmission of mental disease, my conclusions are based on a statistical review of 1200 cases of hereditary insanity admitted into the Cumberland and Westmorland Asylum during a period of thirty years (1865—1895). So far as I can ascertain, no analysis of such a large number of cases of hereditary insanity has hitherto been made by any one observer; there is, therefore, ground for the hope that results

of value may accrue from such an investigation. One of the most important contributions to this subject is contained in a paper* by the late Dr. Hugh Grainger Stewart, which appeared in the *Journal of Mental Science* in 1864. That paper was based on the statistics of 447 hereditary cases admitted into the Crichton Royal Institution, Dumfries; the patients belonged mainly to the middle and upper classes of society, with a smaller number of pauper cases. The cases I propose to analyse were almost entirely paupers admitted from the general population of Cumberland and Westmorland. Private patients often come to an asylum from a considerable distance, and from beyond the limits of the district in which the asylum is situated; inferences drawn from the tabulation of such cases are scarcely likely to give so reliable a picture of the features of insanity in any district as when the cases analysed stand for almost the entire insane population of all the districts from which the patients come.

I propose, to a certain extent, to follow the methods used by Stewart, but shall endeavour also to throw some light on additional points not touched on by him.

I shall deal with the subject under the following headings, and shall consider at the same time various side issues that arise:

1. *The Proportion of Cases of Insanity in which there is Hereditary Predisposition to the Disease.*—The 1200 cases under review represent all the cases admitted into Garlands (Cumberland and Westmorland) Asylum during a period of thirty years in which there was ascertained an hereditary history of actual insanity in the family. It must, however, not be inferred that these 1200 cases include all the patients admitted who inherited the predisposition to insanity. In reality the number of cases with neuropathic heredity should be much greater. In the first place, it is often very difficult to ascertain reliable particulars about the family history of pauper patients; and if, secondly, in many cases of an undoubtedly hereditary nature, though there may hitherto have been no actual insanity in the family, yet the unsoundness of the stock may have previously evidenced itself by other allied nervous disorders, such as epilepsy, chorea, neuralgias, spasmodic asthma, &c., I have not included such cases in tabulating the present series. For these reasons it is impossible to state accurately the proportion that the hereditary

* "On Hereditary Insanity," by H. G. Stewart, M.D., *Journ. Ment. Sci.*, vol. x, p. 50.

cases bear to the total admissions during the same period; only a very rough estimate can be given. The total admissions during the thirty years numbered 3907, giving the proportion of hereditary cases as 30·7 per cent. of the total.

Authorities vary very greatly in the proportions at which they estimate the frequency of hereditary predisposition in cases of insanity; some have put it as low as 5 per cent., while, on the other hand, some* maintain that at least 90 per cent. of the insane have an heredity of insanity.

Grainger Stewart found that 49·6 per cent. of the cases admitted into the Crichton Institution had a history of hereditary insanity or eccentricity; but, as already stated, a majority of his patients belonged to the middle and upper classes of society, about whom more reliable facts as to ancestry can usually be ascertained than in the case of paupers.

It is evident that in a computation of this kind a great deal depends on the personal equation of each investigator (*i. e.* on what he considers sufficient evidence of neurotic heritage), and also on the thoroughness or otherwise of the knowledge about the family history of the patients.

2. *Degree of Relationship, to the hereditarily Predisposed, of those Members of a Family previously affected.*—A history of insanity in relatives, whether in the direct line or collateral, has been considered sufficient evidence of hereditary predisposition to warrant the case being included in my list. Naturally, a history of insanity in the direct line is the strongest testimony; but, failing this, the occurrence of insanity in collateral relatives is also of great importance. It is well recognised that it is not actual insanity that is transmitted from parent to child, but an inherent flaw in the nervous organisation, which renders the individual liable at some critical period of his life to an attack of mental disease. This flaw need not necessarily make its appearance during the life of an individual who has inherited it; it may lie dormant for one or more generations till in some subsequent descendant it is called into active being—it may be as the result of an unsuitable marriage of the tainted parent, or it may be from mere stress of environment. Though it may not be possible to ascertain a history of insanity in ancestors in the direct line, the neuropathic heredity may be evidenced by insanity in collateral relatives, *e. g.* in uncles or aunts of

* Cf. "Heredity in Mental Disease," by J. F. Briscoe, *Journ. Ment. Sci.*, vol. xlii, p. 759.

the patient, or, again, in the children of those relatives, *i. e.* in cousins of the patient. Insanity in cousins only is less reliable evidence of hereditary predisposition, as the flaw in them may have been imported into the family from outside by a faulty marriage. Some authorities (*e. g.* Bucknill and Tuke*) would exclude such evidence entirely; still, insanity in cousins *does* afford a degree of probability of neurotic inheritance, especially if associated with insanity in others of the stock. Again, in the absence of a history of direct transmission, insanity in brothers or sisters of the patient affords strong presumptive evidence of an inherited flaw, more particularly if at the same time there is insanity in other collateral relatives.

The following table shows how the insanity was distributed amongst the relatives of the 1200 hereditary cases. Each case is noted once only; where more than one relative was affected, that one has been selected whose insanity throws most light on the transmission of the disease to the patient under consideration (as a rule the nearest of kin affected).

TABLE I.

	Insane	Males.	Females.	Total.
Grandparents	25	19	44	
Parents	193	219	412	
Brothers or sisters	130	188	318	
Uncles or aunts	114	122	236	
Cousins	28	43	71	
Nieces or nephews	9	8	17	
Relatives, degree undefined	56	46	102	
Total	555	645	1200	

3. *The Influence of Sex in transmitting Insanity.*—Table II shows from which side of the family the predisposition to insanity was inherited.

TABLE II.

	Males.	Females.	Total.
Cases hereditary on the paternal side	170	147	317
" " " maternal side	136	185	321
" " on both paternal and maternal sides	23	26	49
Not defined from which side... ..	226	287	513
Total hereditary cases	555	645	1200
Total admissions in same period	2019	1888	3907

The hereditary predisposition is strongest when it is inherited from both parents; this double heritage was ascertained in 49 cases, *i. e.* in 4.09 per cent. of the total number. Table III gives details of these cases.

* *Psychological Medicine*, second edition, p. 266.

TABLE III.

	Males.	Females.	Total.
Both paternal and maternal grandparents insane ...	2	0	2
Father and mother both insane ...	7	14	21
Father insane, also reversional or collateral maternal H. P.	5	4	9
Mother " " " paternal H. P.	0	2	2
Paternal and maternal " " " H.P.combined	9	6	15

Turning now to a comparison of the paternal and maternal influence in transmitting insanity, we find from Table II that the actual numbers of cases hereditary on the paternal and maternal sides respectively are nearly equal, with a very slight preponderance on the maternal side.

TABLE IV.

Total admissions	3907.
Paternal influence—	Maternal influence—
317.	321.
Percentage on total admissions—	
8.1.	8.2.

The majority of writers appear to consider that the maternal influence is more potent than the paternal in transmitting the tendency to insanity. Bucknill and Tuke* quote from Baillarger that "the insanity of the mother, as regards transmission, is more serious than that of the father; not only because the mother's disorder is more frequently hereditary, but also because she transmits it to a greater number of children."

I quote the statistics of other writers on this subject:—Thurnam,† paternal influence 8.3 per cent., maternal 8.5 per cent.; Grainger Stewart, paternal 9.1 per cent., maternal 7.5 per cent.; Brigham (quoted by Grainger Stewart), paternal 6.7 per cent., maternal 7.7 per cent. Thurnam's statistics tally closely with mine; Brigham's results show more markedly the greater potency of the maternal influence; Grainger Stewart is the only authority who has found the paternal influence the stronger. From a study of all these statistics we must for the present conclude that insanity inherited through either parent seems almost equally dangerous for the children, but that on the whole the insanity from the mother is slightly more liable to be transmitted.

Another question to be considered here is whether the insanity of one parent is more dangerous to children of one sex than of another. From Table II we can extract the following:

* *Op. cit.*, p. 269.

† *Statistics of the Retreat*, Table 14.

TABLE V.

Paternal influence.		Maternal influence.	
Male ...	170	Female ...	147
Male ...	136	Female ...	185
Percentage on total admissions.		Percentage on total admissions.	
8·4	7·7	6·7	9·8

It is thus shown that insanity inherited through the father is slightly (.7 per cent.) more dangerous to the sons than to the daughters, while insanity inherited through the mother is markedly (over 3 per cent.) more dangerous to the daughters than to the sons.

4. *The Influence of sex in receiving Insanity.*—The female sex is markedly more liable to suffer from hereditary insanity than the male, as is shown by—

TABLE VI.

	Males.	Females.	Total.
Total number of admissions ...	2019	1888	3907
Cases with hereditary predisposition	555	645	1200
Percentage of hereditary cases	27·4	34·16	30·7

The statistics of Thurnam, Grainger Stewart, and other authorities show similar results; but, as a rule, the diversity between the proportions in the two sexes has been stated to be less marked than that given in the above table.

5. *The Frequency of the Different Forms of Insanity in those hereditarily Predisposed.*—

TABLE VII.

	Total admissions.	Hereditary cases.	Percentage of hereditary cases.
Congenital imbecility ...	126	44	34·9
Epileptic insanity ...	154	35	22·7
General paralysis ...	231	43	18·6
Mania ...	2234	717	32·5
Melancholia ...	892	310	34·7
Dementia ...	270	51	18·8
Total ...	3907	1200	30·7

Table VII gives the total number of admissions of each class of cases during thirty years, with the number of instances in each class in which hereditary predisposition to insanity was ascertained. The highest ratio of hereditary cases is found in congenital imbecility (with and without epilepsy); taking epileptic imbecility separately, it was found to yield the highest proportion of all, but the series of cases is so small as to render exact inferences unreliable.

Melancholia gives the next highest ratio of hereditary cases. In an analysis of 730 cases of melancholia published by me

some years ago,* hereditary predisposition was ascertained in 38·2 per cent.; in the present series the selection of hereditary cases was more rigid, and a few cases in which there was slight doubt as to its presence were excluded. This, and also the fact that the present series of cases of melancholia is considerably larger, have given a slightly lower proportion of hereditary cases; the proportion, however, still remains high. The proportion of hereditary cases in mania is over 2 per cent. lower than in melancholia. There is a considerable drop in the proportion of hereditary cases in epileptic insanity (mania and dementia). Next comes dementia, while general paralysis has the lowest proportion of all.

Leaving out of account cases due to accidents at birth, or to serious illnesses or injuries during infancy, congenital imbecility is frequently a sign of origin from an excessively faulty stock; the flaw in the nervous organisation is so great that it makes its appearance at an early period of the life of the organism; it is not to be wondered at that a history of hereditary predisposition to mental disease is very common in such cases. Imbecility with epilepsy represents a still greater departure from the normal, and therefore, as one would expect, shows the highest proportion of hereditary cases. Most authorities agree that hereditary predisposition to insanity is present more frequently in cases of melancholia than in mania. In Grainger Stewart's statistics dipsomania shows the highest ratio of hereditary cases. Owing to insufficient data I have not tabulated cases of dipsomania separately.

As already indicated, it is not actual insanity, or any special form of it, that is transmitted from one generation to another, but a flaw in the germ-plasm, which, if it become manifest at all in a member of a new generation, need not necessarily appear in the same guise as it did in preceding generations. Nor do members of the same generation of a family always exhibit the same form of mental aberration; some may throughout life show average or even exceptional mental development (every now and then a genius crops up in families with a history of mental instability); one or more may be imbecile, another may be melancholic and suicidal, a daughter may have puerperal insanity at successive confinements; other members of the family may never exhibit signs of insanity, but may be subject to neuralgias or other nervous ailments; or, again, one or more individuals,

* *Journal of Mental Science*, vol. xl, p. 11.

though they may never be actually insane, may throughout life be eccentric or cranky, irritable or highly immoral, or may in other ways give evidence of their ill-balanced nervous system. The law of variations goes hand in hand with the law of heredity; the offspring never exactly resemble each other or their parents.

6. *The Forms of Insanity in the Ancestors of those hereditarily Predisposed.*—It is often impossible to ascertain the forms of insanity in the ancestors of those hereditarily predisposed to the disease, and one cannot give complete statistics on this point. However, in 532 cases out of the 1200 I am able to specify forms of insanity that had previously occurred in relatives, direct or collateral. In a considerable number of cases more than one form of insanity had previously occurred in the family, but, to simplify matters, I only quote the form that occurred in the relative nearest in the direct line to the patient:

TABLE VIII.

Mental disease in patients.	Mental disease in relatives of patients.							Total.
	Mania.	Melancholia.	Suicide.	Dementia.	Epilepsy.	Imbecility or weak-mindedness	Gen. paralysis.	
Congenital imbecility	10	2	1	—	1	13	1	28
Epileptic imbecility	4	2	1	—	2	2	—	11
Epileptic insanity	1	—	4	1	8	4	—	18
General paralysis	2	—	3	—	—	4	—	9
Mania	111	27	104	4	10	33	3	292
Melancholia	31	25	85	—	7	10	1	159
Dementia	3	4	5	—	—	3	—	15
Total	162	60	203	5	28	69	5	532

A glance at Table VIII shows that one form of insanity in a patient may have been preceded in another member of the same stock not only by the same form of insanity, but also by almost any other variety of mental disease. The most noteworthy fact to be derived from this table is the frequency with which suicide precedes, or is contemporaneous with, insanity in a family. Out of those 532 cases no fewer than 203 had had relatives who had committed, or had attempted to commit, suicide. The proportion of suicides in

Cumberland is very high. According to Morselli,* Cumberland has the fourth highest suicide rate amongst the counties of England, the annual average of suicides in this county being 96·2 per million inhabitants. As shown by Table VIII, suicide occurred in the same family tree as each of the different forms of insanity there classified. Suicide and dipsomania may, however, be classed together as the two forms of neurotic heritage that have the strongest tendency to be transmitted unchanged from one generation to another. Of the 85 melancholiacs who had an hereditary history of suicide, 61 (or 71·7 per cent.) had themselves the suicidal tendency. The suicidal impulse is very frequently present in cases of hereditary insanity considered generally; it existed in 381 of the 1200 cases (*i. e.* in 31·75 per cent.).

The different forms of insanity may all occur in the members of the same family tree at one period or another, and it is interesting to trace in a stock the progress of the neuropathic diathesis. A flaw in the nervous organisation of a family may become intensified in successive generations as a result of unsuitable marriages and antagonistic environment; or, on the other hand, owing to favourable combinations of circumstances, the flaw may gradually fade away, till at last only healthy members of the family are produced, still retaining, however, the latent tendency to disease, which unfavourable conditions may once more call into active existence. When there is progressive deterioration of the mind in successive generations, the march is onwards to complete destruction of the mind, *i. e.* to amentia or dementia.

In many cases the origin of hereditary neuroses in a stock can be traced to alcoholic excess in one or more ancestors, where one can find no history of previous insanity; in other cases inherited drunkenness often goes hand in hand with a neurotic heredity.

Along with hereditary predisposition to mental disease there may exist in a family the predisposition to other bodily diseases. Thus in many cases of the present series there was a family history of phthisis as well as of insanity, and a considerable proportion of the deaths in the hereditary cases resulted from tubercular disease. Some members of a family may develop tubercular disease, others may be subject to attacks of insanity, or the two diseases may co-exist in one person.

7. *The Exciting Causes of Insanity in those hereditarily*

* *Suicide*, by H. Morselli, 2nd edit., p. 189.

Predisposed.—On the whole, the alleged exciting causes, moral or physical, of attacks of insanity do not seem to vary greatly in proportion in the hereditary as compared with the non-hereditary cases. I find, for instance, that the proportion of cases in which alcoholic excess preceded the attack has been much the same in the hereditary cases as in all cases together.

TABLE IX.

	Total admissions.	Hereditary cases.
	3907	1200
Alcohol the exciting cause ...	488	147
Proportion per cent. ...	12·4	12·25

Hereditary insanity is prone to show itself at critical periods of life, such as the puerperium; thus I find that amongst the females the proportion of cases of puerperal insanity has been appreciably higher in the hereditary series than in the total admissions.

TABLE X.

	Total female admissions.	Hereditary female admissions.
	1888	645
Cases of puerperal insanity ...	145	60
Proportion per cent. ...	7·6	9·3

In looking through these cases I have found it noted in repeated instances that the mother or other relative of a woman suffering from puerperal insanity has been afflicted with the same malady; in a considerable number of other cases it has been stated that the mother of a patient admitted with hereditary insanity suffered from puerperal insanity at the time of the patient's birth.

8. *The Number of Attacks in Cases of Hereditary Insanity.*—Relapses are more frequent in cases of hereditary insanity than in non-hereditary cases.

TABLE XI.

Hereditary cases ...	1200
First attack...	761, or 63·4 per cent.
Not first attack ...	439, or 36·5 per cent.

I am unable to give similar statistics with regard to the total admissions to Garlands Asylum during the thirty years, but for comparison quote the following table from Thurnam,* giving particulars as to cases generally.

* *Statistics of the Retreat*, table xxii.

TABLE XII.

First attack... ..	358, or 76·3 per cent.
Not first attack	111, or 23·7 per cent.

In my analysis of 730 cases of melancholia I also found relapses to be appreciably more frequent in the hereditary than in the non-hereditary cases.

9. *The Age on First Attack in Cases of Hereditary Insanity.*—On the whole, hereditary cases of insanity are apt to come on earlier in life than non-hereditary cases. Referring again to the 730 cases of melancholia, 20·1 per cent. of the hereditary cases were under thirty years of age when attacked, as compared with 16 per cent. of the non-hereditary; 13·6 per cent. of the hereditary cases were above sixty years of age when attacked, as compared with 18·4 per cent. of the non-hereditary.

TABLE XIII.

Ages.	Hereditary cases.		Thurnam—cases generally.
	No. of cases.	Percentage.	Percentage.
Under 10 years	49	6·4	0·9
10 to 20 years	54	7·1	12·7
20 to 30 "	206	27·1	32·5
30 to 40 "	166	21·8	20·0
40 to 50 "	136	17·9	15·9
50 to 60 "	75	9·8	10·6
60 to 70 "	44	5·9	6·03
70 to 80 "	27	3·5	0·9
80 to 90 "	4	·5	·2

The above table shows in decennial periods the ages at which the insanity first appeared in the 761 cases of hereditary insanity that were admitted suffering from their first attack; for comparison, Thurnam's statistics of cases generally* are quoted alongside; this is not altogether a satisfactory mode of comparison, but I am unable to give in a similar fashion the ages at the origin of the attack of all the cases admitted to Garlands Asylum during the same period of thirty years. Table XIII shows that in the hereditarily predisposed the first attack of insanity may set in at any period of life; in the largest proportion of cases the attack comes on in the third decade, and the proportion gradually diminishes in each subsequent decade. The high proportion of cases in which the attack came on before the age of ten years is owing to the cases of congenital imbecility being included; the inherited flaw in such cases must be very great, and shows itself at an early stage of the individual's life-history. On

* *Statistics of the Retreat*, p. 71.

the other hand, persons hereditarily predisposed to insanity may remain sane during the greater part of their lives, and have an attack of insanity late in life. I have made an analysis of 200 consecutive cases of senile insanity admitted into Garlands Asylum during ten years (1886—1896), taking solely those cases in which the first attack of insanity came on after sixty years of age. Hereditary predisposition to insanity was ascertained in fifty-five of these cases, *i. e.* in 27·5 per cent. This is a much higher proportion of hereditary cases in senile insanity than that given by Clouston* (13 per cent.), and considerably higher than that given by Bevan Lewis † (22 per cent.). The percentage of hereditary cases ascertained here in all forms of insanity has already been stated to be 30·7 per cent. The difficulties in ascertaining particulars about the ancestry of the aged poor are very great, and were it possible to obtain more accurate information it would probably be found that the proportion of hereditary to the total cases of insanity occurring in the aged did not fall far short of the corresponding proportion at all ages combined. An inherited flaw in the organism frequently tends to make its appearance in the descendants at the same period of life as it originally developed itself in the ancestors. When, from unfavourable combinations of causes, the inherited flaw is gaining in intensity as it passes onwards from generation to generation, the mental breakdown is apt to appear at an earlier age and in a more aggravated form in each succeeding generation, till finally there is reached the stage of congenital imbecility with subsequent extinction of the race. On the other hand, when, owing to the introduction of healthy blood into the stock, and also owing to the environment being favourable, the inherited flaw is becoming neutralised, then we frequently find that the attacks of insanity are milder and come on later in life in each new generation, and that at last there comes a generation the members of which remain sane throughout life.

Melancholia, hereditary or otherwise, is more essentially a disease of middle and advanced life than is mania; hereditary insanity coming on early in life is more prone to take the form of mania; in the later stages of life hereditary insanity is proportionately more liable to be of the melancholic type.

10. *The Domestic Condition of those having Hereditary Insanity.*—Table XIV gives the condition as to marriage of

* *Mental Diseases*, 4th edit., p. 625.

† *Text-book of Mental Diseases*, p. 409.

the 1200 cases of hereditary insanity, and also of the other cases admitted during the same period.

TABLE XIV.

	Hereditary cases.				Non-hereditary cases.			
	No. of cases.	Percentage.	No. of cases.	Percentage.	No. of cases.	Percentage.	No. of cases.	Percentage.
Single ...	616	51.3	1250	46.1				
Married ...	482	40.1	1101	40.7				
Widowed ...	102	8.5	356	13.1				

It will be observed that the proportion of unmarried persons is considerably higher in the hereditary, while the proportion of widowed is markedly higher in the non-hereditary, the proportion of married being almost equal in the two series. Probably the reason of the difference between the hereditary and the non-hereditary cases in this respect is chiefly to be found in the tendency of insanity to come on at an earlier age in those hereditarily predisposed.

11. *The Proportion of Recoveries and Deaths in Hereditary Insanity.*—

TABLE XV.

	Males.		Females.		Total.	
	No. of cases.	Percentage.	No. of cases.	Percentage.	No. of cases.	Percentage.
Total hereditary cases	555	—	645	—	1200	—
Discharged recovered	294	52.9	345	53.4	639	53.25
Died	113	20.3	154	23.8	267	22.25

The proportion of recoveries in cases of hereditary insanity is considerably higher than in non-hereditary cases. The general recovery rate in Garlands Asylum during these thirty years was 44.6 per cent., so that the recovery rate in the hereditary cases has been 8.6 per cent. higher than the general recovery rate. In my analysis of 730 cases of melancholia I found a recovery rate of 60.2 per cent. in the hereditary as compared with 56.5 per cent. in the non-hereditary. The higher recovery rate in hereditary insanity is partly, but by no means entirely, due to the higher number of readmissions of cases with hereditary predisposition.

The death-rate is lower in hereditary than in non-hereditary cases; the proportion of deaths calculated on the total

admissions during the thirty years was 28·5 per cent., as compared with 22·2 per cent. in the hereditary cases. In the 730 cases of melancholia the hereditary cases showed 17·9 per cent. of deaths, the non-hereditary 21·3 per cent.

12. *The Age at Death in Cases of Hereditary Insanity.*—The following were, in decennial periods, the ages at death in the 267 cases of hereditary insanity that died in the asylum, contrasted with the ages at death of all the cases that died in the asylum during a period of ten years (1885—1894).

TABLE XVI.

Age periods... ..	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	Total.
Number of deaths in hereditary cases	1	26	54	58	38	47	36	7	267
Percentage... ..	·37	9·7	20·2	21·7	14·2	17·6	13·4	2·6	100
Total deaths (10 years)	4	35	82	94	90	84	86	21	496
Percentage... ..	·8	7·05	16·5	18·9	18·1	16·9	17·3	4·2	100

It will be seen from an examination of the above table that, on the whole, the duration of life in those suffering from hereditary insanity is shorter than it is among the insane generally. In the former class 51·9 per cent. of the deaths occurred before the age of fifty, as compared with 43·3 per cent. of the deaths of all classes of cases; only 16 per cent. of the hereditary cases reached the age of seventy before death, as compared with 21·5 per cent. of cases generally.

13. *The Causes of Death in Hereditary Insanity.*—

TABLE XVII.

	Males.	Females.	Total.
Cerebral and spinal diseases	47	39	86
Thoracic diseases	41	72	113
Abdominal diseases	6	9	15
General diseases	19	34	53
Total	113	154	267

Of the deaths due to cerebral and spinal diseases 39 resulted from general paralysis, 8 from cerebral hæmorrhage, 11 from softening of the brain, and 6 from epilepsy. Phthisis pulmonalis caused 56 deaths, while other tubercular diseases accounted for 4 more deaths. Tubercular diseases thus caused 22·4 per cent. of the total number of deaths. Out of

a total of 1162 deaths in Garlands Asylum during the thirty years from 1865 to 1894 tubercular diseases were the cause of death in 178 instances, *i. e.* in 15·3 per cent. Of the 1200 cases of hereditary insanity exactly 5 per cent. died in the asylum from tubercular disease; of the total number of admissions of all classes of cases during the same period 4·6 per cent. died from those diseases. Persons suffering from hereditary insanity, therefore, appear to be distinctly more liable to suffer from tubercular disease than are persons suffering from non-hereditary insanity. The other causes of death do not seem to call for any special comment, except the fact that ten deaths were due to cancer; these have all been included amongst the deaths due to "general diseases," although in the majority of instances one or more abdominal organs were affected. Cancer thus accounted for 3·7 per cent. of all the deaths. In the same period forty-five patients in the asylum died from cancer, *i. e.* 3·8 per cent. of the deaths of all classes of cases; so that the proportions of deaths from cancer amongst cases generally and in hereditary cases are practically identical. Cancer, therefore, does not seem to have any special relation to hereditary insanity, though the number of cases has been rather small to permit of reliable inferences being drawn.

14. *The Duration of the Attack in Cases that recover.*—A comparison of cases generally and hereditary cases has brought out no very striking differences in this respect. In the hereditary series I found a smaller proportion of very short attacks getting well within three months of coming to the asylum; on the other hand, during the next nine months a considerably larger proportion recovers of the hereditary cases than of cases generally. Of the hereditary cases that recover 80·5 per cent. do so within a year after admission, as compared with 78·4 per cent. of cases generally.

Summary.—The principal points brought out in this paper may thus be briefly summarised:

(1) Authorities vary greatly in the estimates they give of the frequency of hereditary predisposition in cases of insanity. In the Cumberland and Westmorland Asylum 30·7 per cent. of all the cases admitted showed a history of previous insanity in their family.

(2) A history of insanity in relatives, whether in the direct line or collateral, may be deemed sufficient evidence of hereditary predisposition. It is not actual insanity that is transmitted, but an inherited flaw in the nervous organisation.

This may remain latent for one or more generations, and subsequently reappear.

(3) Hereditary predisposition to insanity is strongest when it is inherited through both parents.

(4) The maternal influence is very slightly more potent than the paternal in transmitting the tendency to insanity.

(5) Insanity inherited through the father is slightly more dangerous to the sons than to the daughters; insanity inherited through the mother is markedly more dangerous to the daughters than to the sons.

(6) The female sex is markedly more liable to suffer from hereditary insanity than is the male.

(7) The order of sequence of the different forms of mental disease amongst the cases admitted into Garlands Asylum, as regards the frequency of hereditary predisposition which they exhibit, has been as follows:—1. Congenital imbecility. 2. Melancholia. 3. Mania. 4. Epileptic insanity. 5. Dementia. 6. General paralysis.

(8) The suicidal impulse is very frequently present in cases of hereditary insanity.

(9) Suicide and dipsomania have a marked tendency to be transmitted unchanged from one generation to another.

(10) In most cases, however, the form of insanity in the descendants shows great variations from that which occurred in the ancestors, and different members of the same family or generation may exhibit widely different varieties of mental disease or other nervous disorder. Insanity, the tendency to which is inherited, may have been preceded in the family not by actual insanity, but by other forms of nervous disease.

(11) In successive generations the propensity to mental disease may become gradually intensified; finally a state of amentia or dementia is produced, with a tendency to bring about extinction of the family. On the other hand, the tendency to mental disease may become gradually eliminated in the course of generations.

(12) The origin of hereditary neuroses in a family can sometimes be traced to alcoholic excess in the ancestors.

(13) Hereditary predisposition to insanity in a family is frequently associated with the tubercular diathesis.

(14) The exciting causes of attacks of insanity seem on the whole to be of much the same nature in the hereditarily predisposed as in those without predisposition.

(15) Hereditary insanity is specially prone to show itself at critical periods of life; thus puerperal insanity is propor-

tionately more frequent in the hereditarily predisposed than in those without predisposition.

(16) Relapses are more frequent in cases of hereditary insanity than in non-hereditary cases.

(17) Hereditary cases are apt to suffer somewhat earlier in life than non-hereditary cases.

(18) Attacks of hereditary insanity may come on at any period of life. Even in senile insanity the proportion of hereditary cases does not fall very far short of the proportion existing in cases at all ages combined.

(19) Hereditary insanity frequently makes its appearance at about the same period of life in successive generations. When the taint is becoming intensified it tends to make its appearance at an earlier age in each succeeding generation; and, conversely, when the taint is becoming eliminated it tends to appear later in life in each succeeding generation.

(20) The proportion of unmarried persons is considerably higher amongst those suffering from hereditary insanity than amongst those without predisposition.

(21) The recovery rate in hereditary cases of insanity is considerably higher than in non-hereditary cases.

(22) The death-rate is lower in hereditary than in non-hereditary cases.

(23) The duration of life is somewhat shorter in those suffering from hereditary insanity than it is in the insane generally.

(24) A larger proportion of deaths from tubercular diseases occurs in cases of hereditary insanity than in non-hereditary cases.

(25) The duration of the attack in hereditary cases that recover does not seem to differ very much from that in non-hereditary cases.

OCCASIONAL NOTES OF THE QUARTER.

The Lunacy Bill.

THE Lunacy Bill of the present session has advanced so far in its parliamentary gestation, that it will almost certainly escape the fate of its predecessor of last year.

The Bill has been so fully discussed in detail at various meetings of the Association, and has received such careful consideration from the Parliamentary Committee, that we need allude only to its more salient features, and deal with brevity even with these, since when this appears before our readers there will be little time for action, if indeed the Bill has not already become an Act.

The limitation of the urgency order is foremost, as well as one of the most important changes in the Bill, and there can be little doubt that its remaining in force for "four" instead of "seven days" will be productive of much inconvenience to the friends of patients.

The liberty of the subject which this change is supposed to safeguard will probably not be appreciably affected, but the emphasising of the penalties connected with this procedure will assuredly still further deter medical men from giving urgency certificates. This will result in giving insane persons full opportunity of demonstrating to their friends and neighbours the dangers arising from the liberty of the lunatic.

A striking deficiency in the Bill is the neglect to provide for a sufficient number of justices of the peace empowered to deal with lunacy petitions, and to provide means whereby their names and addresses can be ascertained. The mere forwarding of the names of such justices to the Commissioners in Lunacy (as provided in Clause 2, Section 3) is of little use to this end. The framers of the Bill can have little idea of the amount of time, trouble, expense, and annoyance to the friends, or of delay and risk to the patients, often entailed by the existing difficulty in finding a magistrate.

The Pensions and Allowances clause (20) is probably the most satisfactory that has hitherto been drawn. An irreducible minimum on the Poor Law Officers Superannuation scale, with the possibility of the more liberal scale of Section 280 of the old Act, will almost certainly meet with acceptance

from a large majority of those interested. The power to grant allowances or gratuities to officers and servants in cases of injury (Clause 21) is satisfactory even in its permissive form, but it is widely held that this should be compulsory.

The remuneration for the labour of pauper lunatics, proposed in Clause 23, has been opposed, we are aware, by a majority of those who have expressed an opinion on the subject. We cannot, however, refrain from expressing the view that the power to encourage occupation by reward thus offered should not lightly be rejected. The mode of using it rightly might entail, in the first instance, much difficulty, but with care and experience such a permissive power ought to find a valuable use.

That branch establishments are to be considered as part of the asylum or hospital (Clause 16) is shown by Dr. Mould, in the example of Cheadle, to entail great limitations on their usefulness, and to distinctly savour of that "legal restraint" in the treatment of insanity which is already productive of so much injury to the treated.

The section of this clause which provides "that no patient shall be received in the first instance . . . in a branch establishment" is simply vexatious and absurd. Patients are being daily received into private houses all over the country; why then should they not be received in a branch of an asylum?

The regulations introduced with regard to boarders are certainly not conducive to the extension of this most valuable means of treating incipient insanity, and the limitation of the freedom of action in the management of hospitals is distinctly bad, since it would prevent new departures in treatment, and tend to stereotype or fossilise existing methods.

This Bill, while showing some indications of increased enlightenment in regard to Lunacy matters by our legislative authority, yet gives very clear indications that the predominant idea is still that of safeguarding the liberty of the subject, and that the treatment of the insane is considered to be a matter of very secondary importance. This fixed idea in the legislative mind produces legal procedures which delay patients being brought under treatment at the most curable stage of their malady, resulting, as has been demonstrated *ad nauseam*, in homicides, suicides, and protracted insanity. This it is that hampers treatment (when the difficulties of certification have been overcome), by occupying the time and attention of asylum physicians in filling up endless

forms, or reports and returns. Effective means of treatment, from the same cause, are practically almost tabooed by the laborious records that have to be made of their use, and new departures in providing care for the insane would be largely restricted by the provisions of the present Bill.

Restraint, by mechanical and chemical means, are evils in treatment from which the insane in this country have, after long effort, fortunately escaped. The legislative tendencies of the past few years, however, make it patent that there is danger of their falling victims to a still more insidious and pernicious evil, deliverance from which would be still more difficult and tedious. This legal meshwork which is being woven around the treatment of the insane may be fittingly described as "red-tape restraint."

Defective Children and Imbeciles.

The report of the Departmental Committee on "Defective and Epileptic Children," and the contemplated developments of the Barony Parish in Glasgow, point to new and very striking sociological departures.

The importance of dealing efficiently with these defective children cannot be too strongly emphasised, for there can be little doubt that they furnish a very large proportion of our social failures, criminals, lunatics, unfortunates, and incapables. What proportion of these classes respectively thus originate there are as yet no data to determine, but from the more thorough investigation and observation which is now proposed we shall learn not only this, but probably also many of the reasons of their occurrence, and of the best means of diminishing their number.

"Feeble-minded" the Departmental Committee interprets as excluding idiots and imbeciles, and as denoting "only those children who cannot be properly taught in ordinary elementary schools by ordinary methods." The committee objects to the term "feeble-minded," and recommends that they shall be spoken of as "special class" children. It wisely refrains from attempting any definition of the mental state, but contents itself by formulating the procedures by which such children shall in practice be brought under "special class" training.

The term "special class" will probably overcome the objection which parents would manifest to their children being

classed as "feeble-minded," and in its vagueness and want of definition embraces every possible variety of ordinary unteachableness, whether from physical, sensory, or mental defect.

The separation of imbeciles who require only nursing and care, from those capable of being taught and trained, which the Barony Parish is about to carry out, is another progressive step of great importance in dealing with this class, and may be expected to give better results than those hitherto attained.

The education and training which is given to the defective minded will, however, be of little real value if the efforts at making them useful members of society cease at the age of puberty.

Training in industrial habit for a considerable time after the age of sixteen is necessary to prevent their becoming social failures. Many of the special class children, for example, if left to their own devices or the influence of their relatives, will only have been rendered more efficient criminals.

Voluntary philanthropic organisations will probably be the most efficient means of watching over these classes after the school age, and in aiding them to start satisfactorily in life; fortunately many such bodies are already coming into existence, but much more comprehensive and systematic organisations will be required if the recommendations of the committee come into practice.

The need of legislation of this kind is most urgent, and it is not too utopian to anticipate that it would in course of time result in a considerable diminution of the numbers whom we are now obliged to class as social failures.

The Early Treatment Clause.

The joint committees of the British Medical and Medico-Psychological Associations have formulated a recommendation in regard to this clause, which is practically identical with that in the present Scottish Lunacy Law.

The indications given in the Lunacy Bill preclude any sanguine expectation that an extension of the means of treatment in the early stage of mental disorder has much likelihood of being accepted.

The increasing accumulation of lunatics in our asylums, and

the heavy expenditure entailed by their maintenance will, however, ere long awaken the interest of ratepayers, and we may then hope that this will reinforce philanthropic effort and lead to more enlightened and liberal views predominating in our lunacy procedure.

Irish Local Government Bill.

The Local Government (Ireland) Bill has passed through the stage of Committee, and, as it is little likely to be modified in the House of Lords, may be considered to have reached its final shape.

In the April number of the JOURNAL we drew attention to the clauses which deal with asylums.

Section 9 provides, as we then pointed out, for the general management of asylums, giving to asylum committees appointed by the county councils, and consisting in a proportion of not less than three fourths of county councillors, powers generally similar to those possessed by asylum committees in England. In Ireland the Lord Lieutenant will take the place held in England by the Home Secretary, as approving of the purchase of new lands and buildings, sanctioning plans for new works, and approving regulations for the government of the asylum.

Sub-section 6 of Section 9 has been amended in the manner indicated below, certain words being added which we distinguish by italics :

“(6.) The county council, through the said committee, may, and if required by the Lord Lieutenant shall, make regulations respecting the government and management of every lunatic asylum for their county, and the admission, detention, and discharge of lunatics, *and the conditions as to payment and accommodation under which private patients may be admitted into and detained in the asylum,* and the regulations when approved by the Lord Lieutenant with or without modifications shall have full effect, *and shall have the same effect for the purposes of the fourth section of the Lunatic Asylums (Ireland) Act, 1875, as if made by the Lord Lieutenant and Privy Council.*”

The power is conceded under the first of these amendments by which county asylums will be able to receive paying patients on reasonable business terms. The old Privy Council Rules laid down that no patient was to be charged a larger

sum for maintenance than the average capitation cost, and that no distinction was to be made between the treatment of a patient whose friends paid for him and a non-paying patient. As we often pointed out, this put a premium upon friends declining to pay. Another result was an immense exodus of poor middle-class lunatics to the English and Scotch Royal and Chartered hospitals, and a corresponding lack of interest in Irish asylums among the most intelligent part of the population, which again told injuriously on the welfare of those institutions in others, besides the mere money aspect of matters. We never could understand why the Privy Council should not have exercised long ago the powers it possessed to enable Irish asylums to receive paying patients on more favourable terms. Doubtless the county councils, on whom in future the expense will fall, will be more enterprising. We shall see presently how this special point came to be provided.

The second amendment to Section 9 places the new regulations of the asylum committees on the same footing legally as the Privy Council Rules. Boards of governors of Irish asylums used to have a favourite excuse for being backward in many matters, namely, that they were very closely tied up by rules not made by themselves. The new bodies will not in future be able to cloak indifference under so plausible a pretext.

The Treasury grant, as we noted previously, is discontinued, and its place taken by a rate in aid derived from the local taxation (Ireland) account under the following terms:

“(c) To each county council who satisfy the Lord Lieutenant that they have fulfilled their duty with respect to accommodation and buildings for lunatic poor, and that their lunatic asylum is well managed and in good order and condition, and the lunatics therein properly maintained and cared for, sums at the rate for each lunatic in the asylum for whom the net charge upon the council (after deducting any amount received by them for his maintenance from any source other than poor rate) is equal to or exceeds four shillings a week throughout the period of maintenance for which the sum is calculated, of one-half of such net charge, or four shillings a week, whichever is least” (Section 50, 1 c.).

In this manner a large measure of eventual control is very properly left with the central government. The Lord Lieutenant is, of course, merely a name, under which it may be conjectured the Lunacy Commissioners, or inspectors, as the

Irish law calls them, will act; and they are probably here provided with ample powers, especially as they will also have the function of advising as to the sanction of building works and as to the approval of rules. They will thus be enabled to impress their own ideas upon the local bodies quite as fully as is judicious. Government retains the power of "the mailed fist," though very wisely enduing it with a silken glove.

The following provision is worthy of notice :

"(1) The council for a county may, either by the exercise of their powers under this Act, or by taking over for the purpose any workhouse or other suitable building in possession of the guardians, provide an auxiliary lunatic asylum for the reception of chronic lunatics who, not being dangerous to themselves or others, are certified by the resident medical superintendent of an asylum of such council not to require special care and treatment in a fully equipped lunatic asylum; and any such auxiliary lunatic asylum shall either be a separate asylum within the meaning of the Lunatic Asylum Acts, or, if the Lord Lieutenant so directs, a department of such an asylum :

"Provided that the sum payable out of the local taxation (Ireland) account in respect of the net charge for any lunatic therein may be paid when the net charge equals or exceeds three shillings and sixpence a week, but that sum shall not exceed two shillings a week" (Section 58, c. 1).

It is a favourite notion in Ireland that disused or superfluous workhouses, which seem to exist in abundance, could be cheaply converted into asylums. We doubt whether it would not be more expensive from an architectural point of view to modify the wretched structures which are considered good enough for paupers than to build new asylums. The fancy that chronic and harmless lunatics can be maintained for three shillings and sixpence a week with clothing and provisions at the prices they command in Ireland is a fond illusion. The resident medical superintendent, with whom, in spite of the jealousy of those unfortunate officers which exists everywhere, the supreme power in this matter by this quaint provision rests, is never likely to draft away to the auxiliary asylum all his working patients, and thereby increase his own difficulties in management, and bring upon himself the discredit of an increased cost at the parent asylum. Accordingly the helpless imbecile is the person who will be sent to the auxiliary. If he is badly clothed, insufficiently

fed, and not attended to, the helpless imbecile will promptly show his gratitude by disappearing, and a great economy will thus be brought about: *solitudinem faciunt, pacem appellant*. The notorious result of cheap treatment in Irish workhouses has not been encouraging up to the present.

The following enactments with regard to officers are important to those who are serving in our specialty in Ireland:

“Where any part of the salary of an officer of a county council is paid out of money provided by Parliament, or from the Local Taxation (Ireland) Account, he shall not be appointed or removed, nor shall his salary be fixed or altered, without the concurrence of the Local Government Board, and he shall have such qualifications (if any) as may be prescribed” (Section 63, 4).

“Where . . . any resident medical superintendent or assistant medical officer of a lunatic asylum is appointed by a county council after the passing of this Act, and at the time of such appointment held an office in another lunatic asylum, he shall, upon ceasing to hold office, be entitled, for the purpose of the enactments relating to superannuation, to reckon any previous service as officer of a lunatic asylum which he might have reckoned if his appointment had been under the appointing committee” (Section 63, 12).

“(1) Subject to the provisions hereinafter contained, the county council acting through their committee—

“(a) shall appoint for each lunatic asylum a resident medical superintendent, and at least one assistant medical officer, and

“(b) may appoint such other officers as they consider necessary; and every officer so appointed shall perform such duties and be paid such remuneration as the council may assign to him.

“(2) Every resident medical superintendent shall be a registered qualified medical practitioner of not less than seven years' standing, and shall have served for not less than five years as a medical officer or assistant medical officer in an asylum for the treatment of the insane, and every assistant medical officer shall be a registered medical practitioner.

“(3) The Pauper Lunatic Asylums (Ireland) (Superannuation) Act, 1890, shall apply to every officer appointed under this section.

“(4) The provisions of this Act respecting officers of the county council shall, subject as aforesaid, and with the substitution of the Lord Lieutenant for the Local Government Board,

apply to the officers appointed under this section, as well in a county borough as in any other county, and the grant paid out of the Local Taxation (Ireland) Account for lunatics shall be deemed to be paid in respect of a part of the salary of any resident medical superintendent and assistant medical officer.

“(5) This section shall be without prejudice to the provisions of this Act respecting existing officers” (Section 64 entire, the amending words and sentences being italicised).

* * * * *

Section 83 provides for the transfer of the business of certain authorities to the new county councils, and for the transfer of the officers serving such authorities to the service of the new authorities, and enacts (sub-section 16) that—

“Subject to the provisions of this Act, every existing officer transferred under this section shall hold his office by the same tenure and upon the same terms and conditions as heretofore, and while performing the same or analogous duties shall receive not less remuneration than heretofore.”

It would thus appear that the rights of those officers who are at present in the service of public asylums are safeguarded as completely as possible, and that some control is still maintained by Government over the appointment, dismissal, and payment of all medical officers. Therefore we may presume that in Ireland such a shameful scandal will be impossible as that which recently occurred in England, where an officer was entrusted with the duties of a first-rate post and paid on second-rate terms, solely in order to evade the Act under which the dismissal of a chief officer, at the mere whim of a timid committee in search of a scapegoat, was supposed to be guarded against.

The provision by which service can be carried from one asylum to another and reckoned for pension is a fair one, and will certainly assist committees in obtaining the best men for the best offices.

Sir Walter Foster is to be thanked for the amendment whereby a medical superintendent is required to have had five years' experience in an asylum, which he succeeded in carrying easily, in spite of some opposition from the Nationalist members. It is a pity that the amendment did not go further, and provide for an examination for the post of assistant medical officer. It appears probable that if our Irish brethren had been as keenly alive to the advancement of their order as the Irish engineers were, and had, like the latter gentlemen, secured qualifying clauses in the original

draft of the Bill, such clauses would have passed with little or no opposition. It seems unreasonable enough that the county surveyors (surveyor of roads, &c., civil engineers) and their assistants should need to be specially educated and examined, while the assistant medical officers of asylums, of whom the public ought to expect much more, and whose responsibility is far greater, may be selected any way. Perhaps the explanation of the anomaly lies in the sentiment of a former Chief Secretary, who in introducing a once famous Bill described it as a measure "for the protection of life, and above all of property." A few rods of well-mended highway have a market value far above the life of a few lunatics. Nevertheless Sir W. Foster's clause is a great improvement, and will go far to protect the asylums from the risk, to which it must be admitted they were sometimes exposed in old times, of getting for their chief officer a man whose qualifications were more political than medical.

If our Irish colleagues were, as we think, a little late in pressing their views, they eventually put them forward with considerable vigour, and obtained a respectable measure of support. The Irish College of Physicians and the Irish College of Surgeons warmly supported Sir W. Foster's amendment, and also an amendment moved by Mr. Carew, and eventually negatived without a division, providing for the examination of assistant medical officers. An endeavour was made to press upon Government to adopt a clause whereby the Lord Lieutenant would retain the gift of the superintendencies in his own hands for a limited number of years, on the supposition that in this way those who had entered the service in the hope of Government promotion would be provided for. In spite of the kindly advocacy of Mr. Lecky this failed, as did also an attempt to induce Government to make compulsory the clauses of the Pauper Lunatic Asylums Superannuation Act (Ireland), 1890, which are now permissive.

They also generally deprecated strongly the notion of giving any control over asylums to the Local Government Board. We hardly think that this was contemplated in the original Bill in spite of certain safeguarding clauses, but it was in the view of several Nationalist members, who urged that the Local Government Board should take the place occupied by the Lord Lieutenant in the lunacy provisions of the Bill. Happily Government stood firm on this point. It would have been a lamentably retrograde step to associate the treatment of the insane with the relief of paupers, which would have been the

inevitable consequence of establishing the rule of the Local Government Board.

The Boards of Governors of Irish Asylums did not collectively do much to improve the Bill. Many of these bodies wasted their powder by petitioning Government to drop local government *quâ* asylums, and take these institutions entirely under central control.

Nevertheless a conference of asylum governors was held in Dublin on the 28th of April, at which several points in the Bill were discussed, and some rather important resolutions come to. One, strongly pressed by the Board of Enniscorthy Asylum, on the initiative of our able colleague Dr. Drapes, secured the ear of Government, and was accepted as the first amendment of sub-section 6 of Section 9, to which we have already called attention, by which paying patients can be received into district asylums.

The Boards of the Richmond Asylum, Dublin, of the Enniscorthy Asylum, and of several others, drew attention very strongly to the financially bad position of asylums under the new Bill. The Treasury grant disappears, and the local taxation fund, with a small margin at present, has no means of expanding, and will be wholly unable to meet the many increasing demands which will be made upon it. The conference drew the attention of Government to the fact "that the Government rate in aid to Irish lunatics, hitherto paid out of the Consolidated Fund, has risen from £101,800 in 1887 to £143,635 (estimated) in 1897, an increase of £41,835. If the number of insane under care continues to increase—and there is no reason to expect otherwise—the surplus will be wholly inadequate, after a few years, to take the place of the increased contribution from Government which would have been available had the Bill not been introduced."

Government refused to reconsider the financial aspects of the Bill, but no doubt this very serious question must come up again before very long.

This conference also adopted the two following resolutions :

"That we would further most strongly urge that the passing of this Act should be availed of to enable such of the provisions of the English and Scotch Lunacy Acts to be adapted to Irish purposes as may be considered advisable. A complete code of lunacy laws exists in England and Scotland, but practically nothing has been done for many years past in connection with the Irish Lunacy Law. Reference to the Acts scheduled in Part 2 of the Bill will show this. A most

important question is that of boarding out of lunatics. In Ireland there is no such power. In England and Scotland the power exists, and is very much used, especially in Scotland. We are of opinion that facilities for boarding out patients ought to be extended to Ireland."

"That we are of opinion that lunacy administration in Ireland should be assimilated to that of England and Scotland as regards the establishment of a lunacy commission in this country."

The former is probably what is the fashion to call rather too large an order; the latter slightly too vague; both of them rather pertaining to a lunacy regulation Bill than to a local government Bill. Neither met any response from Government, but they are, we hope, to be regarded as signs that some healthy interest is felt in lunacy affairs in Ireland. Such interest is badly wanted. Nothing is more singular than the little interest or intelligence shown by the majority of the Irish members in the debates on the lunacy clauses in this Bill. Some of them used these sections as a mere excuse for personally reviling the Inspectors of Lunatics and the officials of the Board of Control. Others fell foul of asylums generally, and seemed to have been briefed by the Society of Imputed Lunatics. The most ridiculous blunders as to matters of fact were made on all sides. Even the Chief Secretary is reported by all the Irish newspapers as having spoken of the Treasury rate in aid of 4s. 2d. per week per head, which is really only 4s.

We hope before the Irish Lunacy Act comes which we have been so long hearing about, but which appears as far off as ever, the Irish public will be somewhat educated as to the requirements of the case, and further that the state of Irish politics will be such that Irish parliamentarians will be able to afford a little time and consideration to a subject which is not perhaps showy, but is of vast importance to a large and very pitiable class of their countrymen.

Habitual Inebriates Bill.

The progress which this Bill has made does not justify any expectation that it will become law in the present session of Parliament, and so for still another year these unfortunates may be permitted to drink themselves into criminality, lunacy, or the grave, as accident shall determine.

The Bill provides that an habitual drunkard, convicted of

crime, may be sentenced to not more than three years in any State inebriate reformatory, &c., this being in addition to, or in substitution of any other sentence. Should this become law, there can be little doubt that it will act as a powerful deterrent to incipient drunken habit, and, it may be hoped, prove a curative measure in a certain number of instances.

The Bill further provides for the establishment of State inebriate reformatories and of certified inebriate reformatories in which such treatment may be carried out.

Any habitual drunkard who has been four times convicted of drunkenness within twelve months shall also be liable to detention for a term not exceeding three years in an inebriate reformatory. This provision, if it ever becomes law, will most certainly arrest the development of those chronic "drunks," whose appearances before the magistrates are to be reckoned in hundreds.

The Bill, however, has little chance of becoming law, even in so quiet a session as the present, and we can only express the regret that while legislation affecting special interests, of railways, banks, &c., is comparatively easy, it is still so difficult to pass a Bill which affects only the general interest of the community.

Criminal Evidence Bill.

This Bill, marking a very wide departure in our law of evidence, is so far advanced that there is every probability of its becoming law in the present session, but probably its clauses will yet undergo such considerable modification as to render criticism of its existing form unnecessary.

The admission of the evidence of criminally accused persons and of the husband and wife will, without doubt, affect considerably the plea of insanity in such cases. Many speculations might be indulged in with regard to the manner in which it will act in this respect; but probably in the question of insanity, as well as in that of criminality, the extension of the scope of evidence will help to a greater approximation to the truth, and thereby to justice, than that attained when the evidence of the most important witnesses was inadmissible.

The exact conditions and limitations of such evidence must, however, be defined before any satisfactory opinion can be expressed on the manner in which it will affect the plea of insanity, but it is easy to foresee that many interesting questions will arise in this connection.

The Examination of Defective Children under the London School Board.

The appointments of Dr. Shuttleworth as an examiner under this Board will be generally recognised as the best that could be made. Mrs. Dickinson Berry, M.D., who is appointed, presumably for the examination of the female children, has high qualifications for the post.

These appointments are, without doubt, the outcome of the recommendations in the report of the Departmental Committee on Defective Children, and an evidence of the acceptance of its main principle by the London School Board.

Reception Houses.

The retirement of Dr. Norton Manning, to which we draw attention in Notes and News, naturally reminds all who are interested in the care of the insane of the reception houses established during his *régime* in New South Wales.

The success of these reception houses has been very great, and the rumour reaches us that the establishment of similar houses in London is under the consideration of the County Council.

The advantages of having well-organised institutions for receiving, treating, and distributing mental cases over the existing system is so obvious, and has been so often insisted on, that little need now be said in regard to it, beyond the expression of astonishment that the change has not been earlier contemplated.

That the insane, often not in any sense paupers or criminals, should, in the large majority of cases, only find their way to the asylum through the police cell or the workhouse, would certainly seem an erroneous procedure.

The unfitness of the police cell as a place for the treatment of an early phase of insanity is clear even to the most legal-minded, but many of the workhouse "lunatic wards" have been and still are very unsatisfactory, to say the very least of them.

Reception houses properly equipped, staffed by medical officers and nurses of special experience, will assuredly be of the very greatest advantage in caring for these early phases of disorder, and it may confidently be predicted that a very considerable number of cases would thus be arrested in their development and escape the need of asylum treatment.

Early treatment, too, would probably be facilitated, from the fact that there would certainly be less reluctance on the part of patients and their friends to go to an institution not an asylum and not a workhouse, than is now the case. This reluctance at the present time constantly leads to delay, with the result that illnesses which might have been abbreviated become protracted and incurable, or the sufferer is permitted to commit some overt act of insanity.

Great economy in the long run should result directly from the diminution of the number of cases going to asylums, and indirectly by a more systematic distribution of the cases to the institutions most appropriate to their mental state. Under existing conditions great expense is often entailed by cases having to be transferred from one institution to another, as well as from want of systematic inquiry as to settlement at the outset of the case.

We may earnestly hope, therefore, that the rumour is well founded, and that we may soon be able to record that the London County Council has made another advance in the care of the insane, of even more importance than those which we have from time to time with satisfaction recorded.

Hypnotism in Court.

In the newspaper reports of a recent action for slander it was stated that the British Medical Association had officially recognised hypnotism as a therapeutic agent. The medical man whose evidence led to this incorrect statement has shown that his remarks had been misapprehended by the journalist. It is of some importance to recall the circumstances, to show how the matter really stands. The committee appointed to report upon the subject included well-known names, and after a considerable interval presented their conclusions. They expressed themselves as satisfied of the genuine nature of the hypnotic state, and were of opinion that, as a therapeutic agent, hypnotism was frequently effective in removing pain, procuring sleep, and alleviating many functional ailments. As to its permanent efficacy in the treatment of habitual drunkenness, the evidence before the committee was encouraging, but not conclusive. They specially indicated that care in the employment of hypnotism was necessary, and suggested important limitations.

The report was referred to the committee on its first presentation, and when it was again brought up in 1893 it was

disposed of by a motion that the report be received and the committee thanked for its services, on the understanding that it be not adopted by the Association.

The general sense of the profession was against the recognition of hypnotism as a means of treatment. Dr. Kingsbury complains that a handful of men, who had not engaged in close observation of the phenomena in question, should thus have disposed of the report. In fact, he holds their verdict to be incompetent. But hypnotism must win its place in the armoury of medicine by general acceptance. Unless it commands the confidence of the profession it will continue, as heretofore, sporadic, limited, uncertain of favour. While it must be acknowledged that it is potent for good in certain directions, the most enthusiastic must admit that it entails very grave disadvantages. Just as some men of tender conscience and decided opinions decline to prescribe alcohol, others will avoid the employment of hypnotism. No doubt it may be urged that medicine must not be restricted to the use of innocuous drugs, but in our special department, at least, the evils consequent on hypnotic influences are so grave, and the scope of the remedy is so limited, that we doubt if it will ever be other than an infrequent means of treatment. We recall a visit to the Zurich Asylum, where Professor Forel has long studied the phenomena of hypnotism, and where many of his "subjects" could be seen among the members of the staff. Only one patient, an habitual drunkard, was then sensitive to the hypnotic influence exerted by Professor Forel. And, in our own experience, the few cases in which it seemed prudent and desirable to induce hypnotic sleep were, in the end, apparently deteriorated in mental condition. The conservation of mental power, so urgently indicated, was in fact endangered.

In our opinion the British Medical Association acted discreetly in refusing to endorse the finding of the Committee with its approval and recommendation.

The Darenth Scandal.

The special committee appointed to consider whether any measures should be taken on behalf of this Association, in support of the sufferer in this matter, by his desire has taken no action.

That the victim of such apparent ill-treatment and unpleasant publicity should desire to avoid the continuance of

the annoyance and suffering entailed by a prolonged struggle in getting "the truth" made manifest, is almost to be expected, although a more combative attitude might be of advantage to others.

The sympathy shown by this Association has been fully appreciated by the person principally affected, and has probably not been without influence on some of those who were associated in the infliction of what appeared to be a gross injustice.

The Handbook for Attendants.

The *Handbook* has now been thoroughly revised, and is in process of printing. The publishers will probably be enabled to have it ready for distribution soon after this number of the *JOURNAL* is in the hands of our readers. As their stock has been exhausted for some time, and the demand continues urgent, we make special acknowledgment of the energy and labour bestowed upon the production of the fourth edition by the Committee, and we trust that the improvements made will still further secure that confidence of teachers and nurses which has been so freely bestowed in the past.

PART II.—REVIEWS.

The Eighth Annual Report of the State Commission in Lunacy of the State of New York, U.S.A., October 1st, 1895, to September 30th, 1896. Pp. 1335.

THIS report, like its predecessors, affords much interesting reading to all who are eager to study the treatment of the insane from all points of view. The statistical parts of the bulky volume show that insane people group themselves in incidence of particular forms of disease, in recovery, in death, very much on the same lines in New York as they do here. The chief point of interest, however, lies in noting where general administration differs in the two countries. It may be said at once that the whole volume testifies to care and study of the patient, and to his interests being carried out in the most praiseworthy method. This particular report brings with it the record of a completed scheme, begun

some ten years ago, for the transference of the care of the whole body of rate-paid patients to the State Commission from the various bodies who were charged with the duty before that date. The city of New York was the last to hand over its authority. The scheme now completed is briefly this:—at the head of all is the State Commission, consisting of three Commissioners, whose province is very similar to that of our own board. For each of the eleven hospitals, which together supply the whole public accommodation in the State, a board of seven managers is appointed by the Governor with the advice of the Senate. This board is charged with the general management and supervision of the particular hospital. It has power to appoint or remove the medical superintendent and treasurer only. The medical superintendent, under the supervision of the board, has a very free hand indeed. He has full power to appoint and remove all other officers and employés whatsoever. He orders all supplies, and is the chief executive head.

Though the hospitals have a certain independence of management, they each form a unit in one system. Patients can be transferred from one to the other. All goods are supplied on contracts extending over the whole system; salaries, wages, uniforms, are on one settled scale applied to all the institutions. The Commission, having devised and procured the adoption of this uniformity, is naturally gratified by its consummation. It claims the following advantages among several others:—it is found that already the maintenance cost per patient has been reduced from \$216 to \$186 per annum, making a yearly saving of \$600,000 on the 20,000 public patients who are now cared for by the State. It has been found possible to get \$80,000 reimbursed in the past year by the friends of patients who before were allowed to escape liability, the "incentive being political or other influences." The legal distinction between hospital and asylum has been removed, all institutions now being organised on a curative basis. This has had a most beneficial effect. A civil service regulation has established competitive examinations for appointment of all resident officers. This has effectually checked all partisan influences. A material increase in the average rates of salaries and wages has been secured. A State-directed pathological laboratory has been established, together with a uniform system of training and "graduation" of all the subordinate staff.

A somewhat peculiar arrangement for a monthly conference

has been organised. The conference takes place at the office of the Commission itself, and is attended by the Commissioners, the medical superintendents, and, at the discretion of each board, a member thereof. The discussions embrace all "matters relating to the care and maintenance of the State hospitals, and particularly with reference to the purchase of supplies for their use." The care and treatment of patients is held to come within this reference. The points in discussion are settled by a majority of votes of the conference, but the Commission is careful to state that its statutory prerogatives are not hereby qualified.

We cannot say that in our opinion such an arrangement is free from doubt. It may work well while all are harmonious, but we should fear that a cross-grained Commissioner or a cantankerous superintendent or two would create very unpleasant positions. We cannot think that it is altogether wise for a Commissioner to leave his independent position, which he must do in voting with others on questions which may under unfortunate circumstances bring into sharp relief the difference of the relative positions of Commissioner and superintendent. More important still, there is the chance that, while a high state of minimum efficiency over the whole may be secured, the formation and carrying out of happy ideas by brighter brained individuals may be unduly repressed. We know well enough that such ideas have led to the real progress which has been made in asylum life. Doubtless this particular experiment will be watched with interest.

We note that an allowance of \$240 per 1,000 patients is made for amusements, music, outdoor sports, &c. The Commission makes a strong point of the establishment of a good band in each hospital. We are glad to see that religious exercises and Bible classes are not put so prominently forward, to the exclusion of lighter forms of recreation, as used frequently to be the case. Among other matters of importance the commission remarks on the following points:— it deprecates strongly a recent change in the law of commitment. Heretofore a certificate by two qualified examiners, approved by a judge of court of record, was requisite, the judge having power to call for further evidence, or to call for a jury. Now, an order of the judge granted on a verified petition with the same certificate is required. The powers of the judge are very similar to those of our justices, and so far the only difference between the English system and that of New York is the difference between a justice and a judge

of a court record, together with the fact that the arrangements apply to public as well as private patients. But the *sequelæ* are positively dreadful. If the patient or a friend is dissatisfied with the order he may within ten days appeal to a justice of the supreme court, who *shall* call a jury to decide the matter. The appellant has to make a deposit or give security for costs of the appeal, while on the other hand the petitioner may, if the case is given against him, be saddled with all the costs.

The question of alien and non-resident patients is, indeed, a serious one in New York. In the seven years ending October 1st, 1895, 33,754 cases were admitted, of which number no less than 50 per cent. was foreign-born. The commission reckons that the capital cost of each bed is \$550, the yearly maintenance is \$186, and the average residence of an unrecovered case is twelve years. The burden of imported insanity is therefore tremendous. The law now provides that if an alien becomes insane within one year of his arrival, and provided that it can be shown that his inability to support himself was the result of causes which existed at the time or prior to the date of his landing, he may be deported at the expense of the steamship company importing him. The commission recommends that the period of one year should be extended to two years, and that it should not be necessary to show existence of any cause at the time of immigration. Further, that at each principal port of departure in Europe, and at each principal port of arrival in the United States, a trained alienist should be employed to "examine" and pass upon the mental condition of persons seeking residence or citizenship in the United States. Verily the disease is desperate, but the remedies are heroic.

It should be mentioned that of the 2814 aliens admitted into the New York hospitals, 1067 came from Ireland, 700 from Germany, 173 from England, 133 from Prussia, 109 from Canada, 107 from Austria, 81 from Italy, &c.

The Commission is of the opinion that there is no evidence of the correctness of the common opinion that insanity as a disease is becoming more prevalent. It reproduces and supports the report of the English commission in 1897 on the same subject.

The statistics show that the percentages of recoveries during the year under report to admissions (no deduction being made for transfers as with us) was 17.5, and the proportion of deaths to average daily population was 9.5. A

great deal of other valuable statistical information is given both as to the total of the State and of the individual hospitals. But, as is the case sometimes nearer home, a good deal of this value is dissipated by diffuse and unsatisfactory heads of enumeration. We would suggest that the Commission should take in hand, as it has every opportunity to do, the preparation of really scientific tables of, *inter alia*, causation of insanity and death. The assignment of such causes as "Christian Science," "intestinal toxæmia," "intemperance (peppermint)," "use of hair-wash," would suggest that the causation was taken from the admission papers rather than from inquiries carefully made by the medical staff, which alone can give a table that will be worth the paper it is written on. The table of death causes, however, must emanate from the staff itself. "Cerebral diseases" are assigned as such in about 2.6 per cent., which is altogether too small a proportion to be accurate. We cannot see the advantage of returning deaths under the head of "status epilepticus" as well as "epilepsy," &c.

Hereditary predisposition is given as a cause in about 6 per cent. in the cause table; but in another table, illustrating the operation of heredity, it was shown in 1200 out of 5600 admissions. In another 1800 cases it was "unascertained," while in no less than 2500 cases it is roundly stated that there was "no hereditary tendency." This latter fact, again, suggests too much reliance on admission papers. We feel sure that the statistical portion of the volume will be brought up to the level of the other parts.

Alcoholism accounts for about 10 per cent. of the admissions, the female cases in which this was assigned being about as one to five of the male cases, the proportion in England being about one to two and a half.

The admissions of cases of general paralysis during the year were about 7 per cent. The sexes are not divided in the table of forms of insanity on admission, but in the tables of causes of death the female cases appear to be about one eighth of the total deaths from this cause. Of 2469 cases admitted in eight years only one recovery is recorded.

We have space for but a brief note of the remarks of some individual superintendents.

Dr. Alder Blumer, of Utica, presses on the authorities the adoption of the boarding-out system. He also strongly advocates Nurses' Homes.

Dr. Mabon, of the Willard Hospital, speaks favourably of his experience of the thyroid treatment, and of the use of red bone marrow in cases of anæmia.

Dr. Pilgrim, of the Hudson River Hospital (several photographic views are given), is very gratified with the results during the last three years of putting experienced women nurses in male wards. There is at least one woman in each ward, with the exception of those for violent and disturbed cases.

Dr. Talcott, of the Middletown Homœopathic Hospital, gives a detailed description of the therapeutic uses of about twenty drugs. We confess that we never saw so much generosity in imparting medical instruction in any report intended to be read by laymen, and we do not think it wise generosity. Cantharis may be useful, as stated, "among the insane when the female patient suffers with an intense nymphomania, or the male is afflicted with satyriasis." Stramonium, which causes frightful objects "to terrify the victim of a stramonium proving" may be very successful in a patient who sees snakes by reason of his insanity, and so forth, but such little matters are best kept for professional eyes, and we would suggest that the Commission should use its great influence towards the cultivation on Dr. Talcott's part of that medical reticence which adorns the reports of his colleagues. Certainly, when he begins a special report to the Commission itself on the care and cure of the acute insane by stating that "the treatment of the insane requires, first of all, buildings which are especially adapted to the necessities of this class of invalids," and tells the Commission that the soil should be dry and porous, and all about the benefits of fire brigades, extinguishers, engines, escapes, &c., Dr. Carlos Macdonald will have thought of an appropriate proverb connected with eggs. It is odd reading, too, to find wedged in between such items of real instruction as have been recorded above a detailed list of the repairs to the kitchen table top, doors, floors, &c., and a record of the number of apples, carrots, and other produce consumed.

The General Superintendent of the Manhattan Hospital, Dr. A. E. Macdonald, who attended the Annual Meeting at Newcastle last year, has under him 3 medical superintendents, 32 assistant male physicians, 2 women physicians, and 8 medical internes. This hospital was involved in a curious lawsuit, turning on a point whether the superintendent was bound to receive a patient who was not properly and whole-

somely clothed. The Supreme Court decided that he was justified in refusing to receive.

This report is the last that will be issued under the authority of Dr. Carlos Macdonald, who has now resigned his presidency of the Commission. The completion of the great scheme, towards which he has worked so industriously and successfully, releases him from his labours. We feel sure that he and others can look back on them with satisfaction and approval.

The Structure of the First or Outermost Layer of the Cerebral Cortex. By W. BEVAN LEWIS. (*Edinburgh Medical Journal*, June, 1897.)

The author gives the results of his researches into the complicated peripheral zone of the cortex. Evidence is adduced to show that a notable relationship exists between this zone and the underlying series of nerve-cells. This zone, "being the territory of reception of the terminal dendrites of the large bulk of nerve-cells of the underlying strata, will vary in depth proportionately with the poverty or health of such cells." The constituent elements of the area in question are considered seriatim, as follows:—Neuroglia and lymph connective elements, tangential or superficial medullated belt; terminal dendrites, from the apices of pyramidal and other cells; termini of the second layer of cells. The question of the existence of nerve-cells in this zone is discussed. The author is somewhat difficult to follow in places, the argument is, perhaps, scarcely so clear here and there as one would desire. His conception of the peripheral zone of the cortex is, however, clearly expressed—"an enormous field of the cortex in which sensory units are brought into close contiguity with the terminal dendrites of the motor pyramidal cells, . . . a field *facile princeps* that whereon the transference of sensory currents to motor energy is realised." Incidentally reference is made to the view of Golgi, that the protoplasmic processes of cells administer to the nutrition of the cell—a view based upon an assumed connection between these dendrites and the vascular channels and connective-tissue elements. The author considers that it may be affirmed that no such connection exists.

In these researches the author used a modified form of

Golgi's method, which consists in applying to the silver chromate section as it lies on the slide a drop of liquor potassæ. This causes an almost immediate disappearance of the red coloration which so frequently disfigures Golgi's specimens. The expansion of tissue caused by the potash produces, however, fine fractures across the dendrites, and alcohol cannot be used in dehydration. The author has, therefore, experimented further, with the object of improving the method, and his results, published in the same periodical for August, 1897, are highly satisfactory. The improved method gives exceptionally clearly the details of structure:—It is as follows:—Harden in Cox's sublimate fluid (two to three months). This fluid is composed of 5 per cent. sol. of bichromate of potash, 20 parts; 5 per cent. sol. of bichloride of mercury, 20 parts; 5 per cent. sol. of chromate of potash, 16 parts; aq. dest., 30—40 parts. Place the sections on a slide, and treat them momentarily with liq. potassæ, washing this away with water; dehydrate in spirit, clear in clove oil, mount in balsam.

Pieces hardened in Cox's fluid should be well washed in alcohol for half an hour to remove superfluous sublimate.

Le Cervelet : Étude anatomique, clinique, et physiologique. Par le Dr. ANDRÉ THOMAS, Ancien Interne des Hôpitaux de Paris. (Travail du Laboratoire du Dr. Déjerine Hospice de la Salpêtrière.) Paris: G. Steinheil, Éditeur, 1897, pp. 356. Price 14 fr.

This is perhaps one of the most exhaustive and complete works on the cerebellum that has been published. It contains not only André Thomas's own results, but a digest of all that is known on the subject. The design of the work is to study the cerebellum not from an anatomico-physiological standpoint, nor yet from an anatomico-clinical standpoint, but from a combination of the two, and it is on these lines that Dr. Thomas has arranged his book. The first chapter contains the history of our knowledge on the subject, and the gradual evolution of our ideas is indicated step by step. He divides it into two periods, the first comprising the work of Willis, Rolando, Flourens, Bouilland, Majendie, Lussana, and Louget; and the second of the work of Luciani, Russell, Ferrier, Turner, and Schiff. As Dr. Thomas remarks, it is only since the advent of antiseptics, chloroform,

and the perfection of histological methods that any real progress has been made. Before that the animal usually died soon after operation, and the observations were necessarily those of a short period before death. During this time it was impossible to distinguish the proceeds of the operation *per se* from the proceeds of the actual absence of the cerebellum.

The history of the cerebellum reveals many diverse views as to its function, the diversity being probably due to a difference in the methods of experimenting and the part destroyed. It has been considered as a centre for organic function and common sensation (Willis), as a genital centre (Gall), as a centre of muscular energy (Haller, Rolando, Weir Mitchell), as a centre for the co-ordination of movements (Flourens, Bouilland, Wagner, Lussana, and many others), some being based on mere speculation, some on anatomical relationships, and others on experiment. Dr. Thomas shows later that its anatomy is in complete concord with its physiology, the one supporting the other.

Chapter II gives a general description of the cerebellum from an anatomical point of view, and a few morphological facts. Three systems of fibres are usually described, projection, association, and commissural fibres. Dr. Thomas maintains the latter to be few in number, most of them being expansions of the cerebellar peduncles. In the succeeding chapters the anatomy of the cerebellum is minutely described,—in fact, no part is left unexplored, advantage being taken not only of coarse anatomy, but of experiment and the teaching of clinical cases. The origin and terminations of afferent fibres is first taken up, the various columns of the cord, *i. e.* the direct cerebellar tract, the tracts of Gower, Goll, and Burdach, being traced upwards through the medulla, inferior cerebellar peduncle, &c., to the cerebellum." Some fibres of the antero-lateral descending tract are traced as far as the pons only, but recently Mott has established their connection with the cerebellum. In Dr. Thomas's experiments Dr. Marchi's method was used. This is one of the most important pieces of work in the book, and ample space is allotted. A page or two is allotted to the middle peduncle, and then begins the description of the efferent fibres. This takes up some fifty pages, with description of experiments and clinical observations, and demonstrates that there is no part of the central nervous system that is not directly or indirectly connected with the cerebellum. One or two new efferent groups of fibres are

described ; a retro-peduncular fasciculus, uncrossed ; a “ faisceau en crochet ;” and a fasciculus joining the corpus dentatum with the pons. Dr. Thomas is deserving of great praise for his lucidity and clearness on a most difficult subject, his chapters on anatomy being most readable. In Chapter V the histology as demonstrated by the methods of Golgi and Ramon à Cajal is briefly touched upon, but here we notice an absence of any mention of much important work that has been done in this country within recent times. The two points laid stress on are that all cells seem to be arranged in such a manner as to influence Purkinje’s cells, and that the close interlacing of the arborisations of the latter seem devised to admit of a wide distribution of any one impulse. The symptoms of cerebellar disease in man, atrophy, sclerosis, &c., are detailed in the next section. This occupies much space, a large number of clinical cases and post-mortem records being given. Chapter VII deals with the results of experimental destruction, first of various parts and then of the whole. The animals were anæsthetised by intra-peritoneal injections of chloral and morphine. This part is well illustrated, pictures of the various attitudes taken by the dog being given. Experimentally, Dr. Thomas shows that each half of the cerebellum presides over the side of the body to which it belongs. The cerebral hemispheres share with the cerebellum the function of equilibration, more especially with regard to the head and anterior extremities ; and the vermis presides over the posterior extremities and trunk.

As a result of all these anatomical, experimental, and clinical observations, Dr. Thomas in his last chapter states the “*théorie anatomo-physiologique*” of the cerebellum. He states that the theory of Flourens, Bouilland, and Luciani is the correct one. The cerebellum registers impressions from the cerebrum and the periphery. The wide connection of the cerebellum with peripheral organs such as those of sight, hearing, touch, &c., supports this. When one group of muscles is put into play, then the cerebellum puts others in force, and produces the requisite muscular tonicity to make the movement co-ordinate. The cerebellum is not the seat of any particular sense, but of a particular reaction, put in force by diverse stimuli. This reaction is used for the maintenance of equilibrium in the various forms of attitudes and movements, whether automatic, reflex, or voluntary. This destruction or severing of certain connections prevents the cerebellum from putting in force certain muscles, and the result is

inco-ordination of the part in connection with the damaged part.

Dr. Thomas is to be congratulated on an excellent work, the result of much patient research and compilation. Undoubtedly the best part of the book is the anatomical section. The book suffers somewhat from repetition and numerous *résumés*. Like many foreign works, it lacks an index, but the orderly way in which the subject-matter is arranged compensates somewhat. It is well illustrated, most of the drawings being original.

De l'interdépendance fonctionnelle des centres corticaux du langage. By Dr. FITZ SANO. (*Journal de Neurologie et d'Hypnologie*, 1897.)

Sano begins his paper by a detailed account of an interesting case of aphasia resulting from softening of the posterior third of the superior temporal convolution, and the posterior two thirds of the supra-marginal convolution of the left side. The patient suffered from word-deafness, alexia, agraphia, jargonophasia, and paraphasia, and although he could repeat words that were said to him he soon forgot them. Sano accepts the usual opinion as to the position of the visual, auditory, and motor speech centres, but does not think that there is a special writing centre. His view of the physiology of speech is that there are originally the sensory motor centres, which are in early life connected directly with each other by association fibres (the primitive paths). As life progresses further paths develop, leading to certain co-ordinating or association centres, where the various impressions received are co-ordinated into ideas. Speech is the result of the *combined action* of all these centres, and injury to any one of them impairs speech, since the motor, visual, auditory, and co-ordinating impulses are all equally necessary for the perfect conception of words. Sano does not think there is any necessity for the hypothetical ideation centre, since the "idea" of the word is simply the result of the co-ordination of certain motor acts and sensory impressions. Of these centres the auditory is the most important, since hearing is primordial, and speech and writing are subsequently acquired by the memory of the sound of words.

Sano accepts the usual subdivision of aphasia into motor,

sensory, and complete. Like Déjerine, he distinguishes a pure aphasia, when the centre is left intact but the centrifugal or centripetal fibres are destroyed. In such case there may be word-blindness, or word-deafness, or incapacity for speech, but intelligence and internal speech are unaffected, since none of the centres have been attacked. He is of the opinion that transcortical aphasias, resulting from lesions of the associating fibres between the centres, are purely theoretical. Anatomical grounds for his views are put clearly forward, and there are accounts of the modes of partial recovery and partial preservation of speech in cases of aphasia. In addition there is a criticism of the various schemes of the mechanism of aphasia advanced by Kussmaul, Bastian, Crocq, and others.

The paper is one of great interest, and should be read in the original, as it is not one that can be easily condensed into a digest.

Les localisations motrices dans la moelle lombo-sacrée. By FIRZ SANO. Société Belge de Neurologie, 1897.

In this paper Sano advances the opinion that there are within the cord certain definite groups of cells, which act as nuclei to certain muscles or groups of muscles, and that these nuclei are as distinct and invariable as, for instance, the subdivisions of the oculo-motor nucleus into groups of cells supplying the various ocular muscles. His opinion is supported by the examination of the spinal cord in four cases of amputation in the human subject. He found that there were definite changes in certain groups of nerve-cells in the anterior horn. These changes were similar to those described as *réaction à distance* by M. Marinesco and others, except that having reached a certain stage of chromatolysis they remained without further alteration for seven months in one case, and beyond being eccentric in position, the nucleus continued healthy. Sano was further supported in his opinion by the results obtained by injecting the vessels of the cord of a cat. He found that there was distinct evidence that many of these groups of cells or nuclei had terminal vessels and definite blood-supply. The nuclei which Sano was able to localise were as follows:—The muscles of the foot and leg are supplied by a nucleus in the dorso-lateral group of the anterior horn cells between the fourth sacral and third lumbar segments; the glutei by an antero-lateral group between the

second sacral and the upper border of the fifth lumbar; the quadriceps femoris by cells in the antero-lateral group, external to those for the quadriceps, between the fourth and second lumbar segments; the abdominal muscles by cells in the external angle of the cord in the first lumbar segment and higher; the lumbo-sacral muscles probably in the median group of cells in the upper lumbar segments.

Sano found, further, that the cells of the intra-spinal neurons showed *réaction à distance* after an injury to the cord in the same manner as do those whose axis-cylinders pass into the peripheral nerves when the nerve is injured.

The Localisation of Headaches and Sick Headaches. By H. BENDELACK HEWETSON, F.L.S., &c. Simpkin, Marshall, and Co., London.

This small work of 140 pages contains Dr. Hewetson's account of the relation of errors of refraction to headaches and sick headaches, and also to digestive disorders occurring between the attacks of the latter. The first chapter is largely made up of illustrative cases from the writer's practice. The second chapter is devoted to the discussion of the relation of various general neuroses to ophthalmic defects. The third chapter contains an account of the headaches due to carious teeth, pathological conditions of the naso-pharynx and ear and other local lesions.

None of the views are particularly new, but they are presented in an interesting and suggestive manner. The work concludes with a series of diagrams, in which the position of the headache produced by the various causes is indicated in colour. It would be interesting to know if this precise localisation accords with the experience of other observers.

Text-book of Nervous Diseases; being a Compendium for the Use of Students and Practitioners. By CHARLES L. DANA, M.D. Fourth edition, revised and enlarged. 246 illustrations. London: J. and A. Churchill. Price 20s.

Dr. Dana is to be congratulated on the rapid succession of the four editions of his text-book. When this volume is compared with the first edition of 1892 it is seen how much care and trouble have been expended in bringing the work up to date, and in rendering it one of the most readable as

well as one of the best informed works on nervous diseases. It is written in a style that is at once crisp and lucid. Exception may be taken to occasional lapses into colloquial Americanisms, and to an occasional looseness of statement which is out of place in a work of this high class.

The various departments of the subject are so clearly arranged as to be readily consulted by the busy practitioner, and at the same time the work is one eminently well suited for the senior student of neurology. If we were to pick out any portion of the work as being specially valuable, we should mention the chapter on functional diseases, and in particular the account of neurasthenia and its treatment.

The author has written on this subject with a fulness of knowledge and a breezy common sense which render his account of exceptional value. On the other hand, the trophic and vaso-motor disorders are too briefly described, myxœdema getting little over one page, and cretinism a still smaller space. The other sections on diseases of the cord and brain are very full, and they are well illustrated, a large proportion of the diagrams being borrowed (with acknowledgment) from the works of others. The book concludes with two very valuable chapters on the disorders of sleep and on neurological therapeutics, the latter being characterised by a preciseness and a detail which will render it particularly acceptable to the busy practitioner.

Metopismus. By G. BUSCHAU. *Real-Encyclopädie der gesammten Heilkunde.* Berlin, 1897.

Dr. Buschau's paper is devoted to a careful consideration of the frequency and the cause of persistence of the frontal suture (or metopism). In the first part of the paper it is noted that the condition is present in from 5.9 per cent. to 12.5 per cent. of the natives of the various European nations, but that in the coloured races the percentage is very much lower, the average being about 2 per cent. The position, which is not exactly in the middle line, and the associated peculiarities of the other parts of the head are then described. Buschau concludes by stating that the persistent frontal suture is a sign of intellectual superiority, not a reversion to an inferior type, and that it is probably due more to the active growth of the cerebral hemispheres than to abnormal weakness of the frontal bones.

The New Psychology. By E. W. SCRIPTURE, Ph.D. (Leipzig), Director of the Yale Psychological Laboratory (The Contemporary Science Series). London: Walter Scott, Ltd., 1897. 8vo, pp. 500. Price 6s.

This ambitious book of Dr. Scripture's is more an attempt to bind together in the form of a new science the results of experimental psychology and its allied subjects than to state any new method or fact. There is little within recent times that has aroused so much controversy as the attempt to elucidate and illuminate the region of the mind by active experimental and other means. Psychologists for long have maintained this region sacred from the heretical attempts of the physiologists. But in spite of this there has been a steady progress and advancement, much of it done, as the book explains, quite unconsciously.

Centuries ago all our sciences consisted of speculation, with its worthy associates, superstition and the supernatural, together with the superadded black incrusting of the prejudices, bigotry, and religion of the dark ages. Gradually, in the light of experimental inquiry, the dark clouds have lifted, speculation has been replaced by observation and experiment, and to-day the various branches of science are monuments marking the progress of man. That psychology has lingered behind none will deny, and the reason why is not difficult to find, the tenacity with which the majority have held to their tenets and the great difficulty in investigating the subject experimentally being the chief stumbling-blocks. Dr. Scripture's book errs, if anything, in being too previous, and its title is more attractive than correct. We are of the opinion that there is not enough material at present on which to build a "new psychology," and hardly sufficient to forecast one. All Dr. Scripture's book does is to summarise, and put in an easily obtainable form, facts which go to show that in the future there is a likelihood of a vast change occurring in our notions of psychology.

The book is divided into five parts, with the addition of an appendix. Part I deals with "Methods" generally; Part II with "Time;" Part III with "Energy;" Part IV with "Space;" while in Part V we find the position of "Psychology, Past and Present," taken up, including a short account of the work of Fechner, Helmholtz, and Wundt. The first chapter is a fair sample of the way Dr. Scripture treats the subject. In dealing with "Observation" he dis-

cusses the difference between the two rival schools of Introspectionists and Psycho-physiologists. He carefully states both sides, and then, attempting a reconciliation, yields to both what they strive for. To the Introspectionist he yields the point that the examination of brain processes is not necessarily the examination of mental processes. Both sets of phenomena are inseparably connected and parallel. Yet mind and body are not the same, and observation of the brain is not observation of sight, sound, pain, volition, &c. No physiological experiment can ever reveal a mental act. Both schools have the same faults and inaccuracies. A mean must be met. The Introspectionist would maintain a true science of mind apart from physiology, and rightly so. The Psycho-physiologist would replace the inaccuracy of the Introspectionist with truly scientific work, and rightly so. The new psychology, he claims, gives to both what they wish—a purely mental science founded on careful experiment and exact measurement.

The various other chapters are lucidly written in spite of innumerable technicalities, and are of absorbing interest; but we are afraid the book will not appeal to the general reader, as some parts will prove quite unintelligible to all but those who have had the benefit of some previous knowledge on the subject. The book is well illustrated with 124 diagrams, &c., many original, some borrowed; and an excellent general index is added.

Le Subconscient chez les Artistes, les Savants, et les Ecrivains.
Par le Dr. PAUL CHABANEIX. Paris: Baillière, 1897.
Pp. 121.

This book belongs to the department of psychology dealing with genius, a region which has seldom been cultivated by English investigators, but has long been attractive to French psychologists and alienists. The author is a pupil of Professor Régis, of Bordeaux, who writes a short preface in which he thus states the conclusion of the book:—"It proves that the personality of men of talent and genius, so variously interpreted, is composed rather of nervous erethism than of insanity, and that great creators are often not insane, but waking sleepers, lost in their subconscious abstraction,—in a word, beings apart, living in a starry dream." That is really Dr. Régis's own belief, and though clearly shared by the author, the

latter is evidently not much concerned with arguments or conclusions. His book is simply a classified collection of facts bearing on his title. In part, these facts are merely the old familiar stories concerning Coleridge, Goethe, Shelley, Tartini, &c., usually repeated from second-hand sources, for Dr. Chabaneix's knowledge of literature appears to be mainly confined to his own language. The really new and valuable part of the book is made up of the numerous interesting confessions which the author has extracted from various French poets, novelists, painters, musicians, &c. A few of these communications, which will no doubt be used by many subsequent writers, may here be mentioned. *Mdme. Rachilde*, a remarkable contemporary novelist, appears to owe much to dreams which persist into the waking state. As a young girl she regarded her dreaming state as at least as real as her waking state, and she traces her literary activity, which began at the age of twelve, directly to her dreams. Since marriage, she adds, her dreams have become more confused, but they have gained in method, and by looking at particular objects before falling asleep she can nearly always succeed in controlling the course of her dreams. Nearly all her books were first seen in dreams, "and very often when I add chapters on my own authority," she remarks, "they are not the best." *M. Rémy du Gourmont*, another author of reputation, has often found that he cannot distinguish reality from dreams. *M. Camille Mauclair*, a critic of high standing, writes :

"I may say that not only the ideas and the plan of my book, but even the least metaphors, are dictated to me in a continued dream. Never, either in prose or verse, do I make any alteration in a manuscript," and this not from carelessness, as he has a passionate love of his work, but because he finds that no other method succeeds; the only explanation he can suggest is that he is really working when asleep. *Raffaelli*, the painter, remarks that he sleeps badly at night, but on the other hand is seldom completely awake during the day. Interesting communications are also furnished by *M. Sully Prudhomme*, the poet. The general tendency, as the author remarks, is to show that the dream-state is the point around which the subconscious actions of artists and men of letters revolve, and that all conditions in which the subconscious reveals itself are analogous to dreams.

Le Suicide: Étude de Sociologie. Par EMILE DURKHEIM.
Paris: Alcan, 1897. 8vo, pp. 462. Price 7 f. 50 c.

The ablest and best known studies of suicide have hitherto been written from a psychiatric, psychological, or, at all events, medical standpoint. The interest of the present very able and detailed study of the matter is that it is the work of a writer who desires to be above all a sociologist, and who, as such, has gained a distinguished reputation throughout Europe. It is true that Professor Durkheim invokes the assistance of history, ethnography, and statistics—"without which sociology can do nothing"—but he regards suicide as, above all, a social manifestation, and he considers that the sociologist deals with realities as definite and solid as the psychologist or the biologist.

The author classifies suicides into three main classes, as (1) egoistic, (2) altruistic—chiefly found in lower stages of civilisation,—and (3) anomic, or those due to sudden social disturbances, like an economic crisis. He considers that this classification itself indicates the chief causes of suicide. But before expounding it he discusses with great care and acuteness the extra-social causes usually put forward to account for suicide—psychopathic conditions, race and heredity, climate and temperature, imitation,—and seeks to determine the part, if any, possessed by these alleged factors of suicide. It is only necessary here to state briefly the outcome of the chapter on the psychopathic factor.

If suicide is always a form of insanity, the author remarks, it must be an individual manifestation, not a social manifestation. He quotes Esquirol, Falret, Moreau de Tours, and others who so regarded it, and then argues that if suicide is a form of insanity it must be a monomania, and he proceeds, in approved fashion, to demolish the whole conception of monomanias. But it might be claimed that, though not a special form of insanity, suicide only occurs during insanity. It certainly may be an episodic "syndrome" of insanity; is it always so?

Such a conclusion, the author remarks, would be precipitate. Because an act may occur during insanity, and even put on a special character then, it does not follow that the insane man does not share such aptitude with the sane man. To test this he proceeds to classify suicides taking place during undoubted insanity, and finds that they mostly belong to four classes: (1) maniacal suicide, (2) melancholic suicide,

(3) obsessional suicide, and (4) automatic or impulsive suicide. In all these groups there is either no motive at all, or a purely imaginary motive, and the author argues that it is an abuse of words to attempt to thrust into these insane classes a suicide which has its motive in real and reasonable grounds. Even Esquirol, he points out, admitted certain exceptions, and the door once opened it is difficult to close it. But granting that suicide is not necessarily a form of insanity, it may be asked, do not other slighter psychopathic conditions, such as neurasthenia, play a part in producing it? Professor Durkheim admits that a general neuropathic or neurasthenic state—which he describes very graphically—presents the psychological type most frequently associated with suicide, but with that admission the facts are still not accounted for; if suicides are in ratio with the general neuropathic tendency, then, since there are by accumulation a greater number of insane women than of insane men, suicide should be commoner among women. Again, the Jews, who are specially liable to insanity and other nervous affections, rarely commit suicide, and there is great difference in different countries and among different religious communities. The countries where there are fewest insane are, indeed, on the whole, those where there are most suicides—Morselli's contrary conclusion, it is pointed out, being due to mixing up idiots and the insane. The suicide rate has therefore no definite relationship to the tendency to insanity, nor, by induction, to a neuropathic diathesis, and so vague an influence cannot be accepted as completely accounting for so definite a social fact as the suicide rate. In a similar manner the author deals with the alleged influence of alcohol, and by the help of four maps of France comparing the incidence in the different departments of suicide, of the consumption of alcohol, of crime due to alcohol and of alcoholic insanity, he shows that there is no tendency to coincidence. The conclusion of this interesting discussion is that while degeneration, in its various forms, constitutes a soil eminently suitable for the action of the causes which determine a man to kill himself, it is not itself one of those causes.

Leitfaden der physiologischen Psychologie. Von Professor Dr. TH. ZIEHEN. 4th edition, with 23 figures. Jena: Fischer, 1898. Pp. 263. Price 5 mk.

In reviewing the English translation of this introduction

to physiological psychology some years ago, we pointed out its value for the English reader as due in part to the fact that Professor Ziehen works along familiar English associational lines, instead of following Wundt, and in part to the fact that, as an alienist who was impelled by the study of abnormal psychology to investigate normal psychology, the author is specially familiar with the needs of the alienist.

Various works on psychology, both original and translated, have appeared in English since then. If we are to judge by the output there must, indeed, be a special demand for such works at the present time; but it cannot be said that Professor Ziehen's work has lost its value. It must, indeed, be said that he is a very cautious, almost an old-fashioned guide; but notwithstanding the activity with which psychologists are now following up many lines of detailed research, it cannot be claimed that on the larger issues they have yet reached any very complete unanimity, so that the most reliable guide is not necessarily the guide who is most ready to follow up the newest paths. Professor Ziehen has, however, as his foot notes show, made some attempt to keep up with recent literature, and he has, in revising the chapter on visual sensations, obtained the assistance of Professor A. König with reference to physiological optics. This fourth edition of his work, in its much enlarged form, may be cordially recommended as a reasonably clear and intelligible statement of physiological psychology on an empiric and associational basis.

Uric Acid as a Factor in the Causation of Disease. By ALEXANDER HAIG, M.A., M.D., F.R.C.P. 4th edition, with 65 illustrations. London: Churchill, 1897. 8vo, pp. 698. Price 12s. 6d.

When Dr. Haig's book first appeared in 1892, we called attention to the remarkable character and interest of this "contribution" (as the author now terms it on the title-page) "to the pathology of high blood-pressure, headache, epilepsy, mental depression, paroxysmal hæmoglobinuria and anæmia, Bright's disease, diabetes, gout, rheumatism, and other disorders." Since 1892 Dr. Haig has greatly developed and elaborated his main thesis, extending or guarding his positions at many points. The book has doubled in size, and the interest and variety of its contents are greatly increased.

It cannot, however, yet be said that the field Dr. Haig

is so enthusiastically cultivating has been definitely conquered for medical science. He speaks with the fervent conviction of one who has experimented chiefly on himself, and who finds the evidence of his arguments in his own experience. But his work still arouses divided opinions. On the one hand the light which this uric acid theory throws on a number of perplexing conditions has carried conviction to many experienced and sagacious observers (like the late Sir John Bucknill), while, on the other hand, some expert investigators (like Dr. Luff) deny the validity of many of the facts here set forth. It may be added that certain imperfections of method in Dr. Haig's earlier work, together with generalisations that were, perhaps, premature, and in this latest edition certain intemperance of expression with regard to eaters of meat—which he regards as the chief source of uric acid, and therefore the toxic source of innumerable evils—have created in many minds a prejudice not yet broken down by the large amount of work here presented.

Even those, however, who reserve their judgment as to Dr. Haig's main position, must admit the value of his detailed work, and the extreme suggestiveness of many of his observations. He has much to say of the psychic aspects of menstruation in relation to uric acid, which here plays, he considers, a large part. Again, he supplies us with what may be called a physiological theory of the summer rise in the incidence of suicide and crime. We already have the widely prevalent cosmic theory, which attributes this rise to temperature, and Professor Durkheim's recent sociological theory, according to which it is due merely to increased social activity during the long days. Dr. Haig now argues that it may be entirely accounted for by the annual fluctuations in uric acid excretion and the mental state thereby induced. Even the experiences here recorded of the results of special dieting will be found useful, though we may not all be prepared to believe that by feeding criminals on a diet free from uric acid and related substances we should sensibly diminish the prevalence of crime.

Quelques Considérations sur la Propagation des Excitations dans le Système Nerveux. Par M. BENEDIKT (de Vienne). *Extrait du Bulletin de l'Académie de Médecine*, January 4th, 1898.

M. Benedikt in this short lecture aims rather to elucidate the manner in which impulses travel, than to explain the nature of the impulse itself, although with regard to the latter he is by no means silent. The first half is taken up with a discussion of the relation between physiological and pathological impulses and their propagation, and as a preliminary he states what he terms some fundamental laws of biomechanics. These laws are very involved, and difficult to follow, but the main fact one gathers is that there is an intimate co-relation between all processes of evolution, development, and growth, and that pathological impulses broadly follow similar rules, but not entirely. In support he gives several examples.

He pleads very earnestly for the recognition of the fact that there are many grounds for the belief that all nerves are conductors in a double sense, and that they are capable of carrying impulses both upwards and downwards, in the same way that in telegraphy the same wire can carry messages both to and fro. He states that having regard to our present knowledge of the anatomy of the nervous system, we ought rather to be more astonished at the fact of isolation, than at the fact of irradiation of nerve impulses.

The other half is limited to the transmission of morbid impulses. These he divides into two classes; functional, which are similar to physiological ones, and those which are the result of actual anatomical change, such as secondary growths in the brain.

These progress not only by continuity and contiguity, but by incoherent diffusion. These latter he likens to impulses in a state of intoxication. These incoherent impulses propagate themselves widely, not sticking to beaten tracts, but taking unusual paths and thus spread themselves widely in a mysterious sort of manner, the exact mechanism of which is unknown. Further, he states that the passage of these impulses may result in areas of softening and degeneration. Many examples are given in support, and many of the symptoms of cerebral tumour are put down to the same cause; usually explained, however, on the plea of increased intracranial pressure. This latter view he states to be in oppo-

sition to all principles of mechanics. "It is convenient," remarks he, "and it is therefore become common." We are afraid the facts of morbid anatomy do not give him an unqualified support. His views are clearly put, closely reasoned, but are not convincing.

L'Hérédité Normale et Pathologique. Par CH. DEBIERRE.
Price 1 fr. 25 c.

This monograph appears as fourth in a series which is designed to keep us up to date in the controversial and novel questions of medicine, surgery, pathology, and biology. The number before us admirably fulfils its purpose. Though perhaps we might expect from such a series that the authors would have difficulty in attaining the purely historical point of view, we cannot complain that Professor Debierre errs after the manner of partisans. He presents us with a fair, lucid, not too critical account of heredity as the subject presents itself in these times.

It would be absurd to criticise in detail a work which is really a review of the question with which it deals. To do so would be to open up argument over every page. It may suffice to say that the author does not beg the questions which he raises, and we may add that on the whole he expounds them from what is now the orthodox point of view.

Heredity is simply defined—the transmission to offspring of the characters and qualities of its ancestors. After a few sentences upon "les modes de l'hérédité," Professor Debierre goes on to discuss, in two sections, physiological and pathological heredity. In the former of these two sections, the transmission of individual variations, male and female contributions to procreated character, the heredity of sex, effects of consanguinity, atavism, the transmission of mental qualities, the origin of species, &c., are touched lightly but with suggestion. As regards psychical transmission, the author, as authors will, seems to fail to appreciate sufficiently the effect of an evolving environment.

In the pathological section a similar range of subjects is discussed—teratology, neuropathy, degeneracy, diathesis and predisposition, neoplasms, infection and immunity, alcoholic and other vicious excesses, &c.

The next section, which is more controversial, deals with the theory of the mechanism of heredity. The processes, so far as known, before and after fertilisation, are admirably

summarised; the general fact of the continuity of the germ-plasm is admitted; its complete physiological isolation is not. The various theories of the essential mechanism—from Hippocrates to Weismann—are skilfully reviewed. Professor Debierre, naturally, has his kick at Weismann's edifice of a geometrical progression of specialised determinants; but, notwithstanding, gives Weismann full value in his "conclusions."

Acquired Immunity. By Dr. ARCHDALL REID. (*Lancet*, September 11th, 1897.)

No one who is a serious student can afford to ignore the writings of Dr. Archdall Reid on all questions relating to the "present evolution of man;" and this address is certainly an important contribution. In it he explicitly discards certain previous theories as disproved, or at least discredited: Pasteur's idea that the micro-organism of disease perished when it had exhausted its essential pabulum within the body; Chauveau's, that the micro-organism developed as a by-product some substance which was fatal to its own life, as yeast develops alcohol, which kills it; Behring's, that the human organism develops an antidote to the toxins of disease; and Fraser's modification of the last, that in the human body the toxins become transformed, and that the antidotes are part of the transformation. His own theory of immunity he calls a modification of Metschnikoff's general theory of phagocytosis. The addition, I gather, which is Reid's own, is that, *quoad* disease, the method of phagocytes and other cells is to secrete enzymes which can resist micro-organisms and their toxins by digestion either at a distance or at close range.

In the early part of the paper, which is more or less destructive of previous theories, we find the fallacies usual to a work which pursues the hypothetical rather than the physiological method. We find the usual weakness of asking an idea to do duty for every case instead of for only some cases. It is the habit both of exponents and of critics of any new idea to kill it by asking it to carry a burden which there is no need for it to bear. In this case, for example, though we have no doubt that Dr. Reid's account of immunity is fitted for wider application than any other, we have also little doubt that there are diseases immunity from which can be explained on Pasteur's theory, though we are told that that

has been disproved—that Chauveau's will explain other cases, Behring's others, Fraser's others, Metschnikoff's others. We may even believe that, some years hence, there will be facts brought to light which Dr. Reid's comprehensive theory will not explain. He culls facts from such various diseases as syphilis (a disease, to my mind, quite apart from all others), anthrax, rabies, smallpox, measles, scarlet fever, &c. To seek for a common ground for immunity from all these and from many more is to imply that they all kill by the same mechanism, which is an evident untruth.

Again, we have the old anthropomorphic fallacy. Despite his recognition, in his *magnum opus*, that the micro-organisms of disease have a universe of their own outside of the human body, we find Dr. Reid, in this lecture, writing as if they came into existence with an inspired intention of infesting man. He writes as if the organisms whose activities in the human body denote disease had been evolved under natural selection with special relation to inhabitation of man. On the contrary, in the light of evidence which proves another environment as normal to such organisms, we may believe that the infection of man is an accidental or incidental experience for them and not the end and aim of their existence. In short, Dr. Reid implies a teleology with man as the centre of life rather than with every life as its own centre. If we are to be anthropomorphic let us say that when organisms of the marshes find themselves confined and cabined in the human blood-stream, probably no one is more surprised than the intruders, and that we cannot judge from their activities there what they are capable of on their native soil.

But when we come to Dr. Reid's exposition of his view of the mechanism of phagocytosis in opposing disease, we cannot but be convinced of the value of his contribution. Starting from Fraser's experiments, he finds that various somatic cells are capable of secreting something in the nature of a ferment which antagonises micro-organisms and their toxins. The full development of such digestive processes constitutes the resistive power of the human organism to various diseases. If this intra- and extra-cellular digestion of the toxin-albumoses, &c., is complete, the host is immune from the attacks of the disease germs and their toxins. We have two sides to the question really, although, perhaps, Dr. Reid does not separate them with sufficient distinctness. We have what we may term the offensive and the defensive function of cells in resisting the micro-organisms of disease and their toxins.

To the mechanism of offence Dr. Reid makes a distinct contribution, in accounting for immunity as a development of the toxin-digesting function of cells. The defensive function he admits. He regards the process of habituation or tolerance as essential to the efficacy of the offensive function. You cannot hope to secure a victory if your men are killed before they use their weapons. But Dr. Reid does not contribute to the physiology of habituation. He speaks of an "increased power of physiological resistance in the cells," but that is only a statement of tolerance, and he does not give us any help in understanding it.

This distinction is vital, and the mechanism of tolerance is probably of more practical import than the mechanism of toxin-destruction. You may avoid a poison, as the teetotaler does; you may develop a ferment which will disintegrate the alcohol, let us say, and split it up into innocuous elements; or your cells may develop a habit of tolerance and not suffer from the contagion of alcohol. We should like to know Dr. Reid's views on this last possibility in the process of immunity.

Sulla Dignità Morphologica dei Segni detti Degenerative.
(On the Morphological Value of the So-called Signs of Degeneration.) By Dr. V. GIUFFORDA-RUGGERI. Rome: E. Loescher and Co. Pp. 117.

This recent work is divided into three chapters, as follows. The first is largely historical, and treats in a philosophical spirit of the general relationship between somatic and psychical abnormalities; then more particularly of this relationship as it obtains in the case of the insane, in that of criminals, in that of prostitutes, and of men of genius. The second chapter deals with the various anatomical stigmata; these are described in fair detail. The third chapter is concerned with three questions:—(a) What abnormal signs predominate in the male sex, and what in the female, independent of the psychosis? (b) What abnormal signs predominate in the male and female sex respectively in the various psychoses? (c) What abnormal signs predominate in the graver forms of psychical degeneration, and what in the less serious, independent of the sex? To these questions the author furnishes replies drawn from his observations made on a large number of patients at the Provincial Asylum of Rome. Some useful statistical tables, dealing with these

points, add to the value of this chapter. The work is closed by a lengthy list of references to writings quoted by the author, which bears testimony to his wide experience of the literature of his subject, and much enhances the value of this timely contribution to the literature of degeneration.

Rapports de l'Alcoolisme et de la Folie. By Dr. HENRY DARIN. 8vo, pp. 120. Price 3 fr.

There are many useful things in Dr. Darin's brief work, of which the most useful is his point of view. He succeeds, as few of us do, in getting a view of drunkenness wider than that of pathology. He regards it as it is, a social blot, a national vice, first; a lesion or series of lesions later. We are not sure, however, that the mixture of medicine and economics is palatable, or that it is easy of digestion. We should prefer more exclusive courses.

He deals at considerable length with the increased production and consumption of alcoholic liquors; the vital statistics of drinkers, drunkards, and abstainers; the various forms of alcoholic poison; the various lesions; the relation of alcohol to infant mortality, and its effect on embryonic tissues; alcohol and insanity; alcohol and suicide. There is an especially interesting discussion of the importance of alcohol in the ætiology of general paralysis.

The practical question, the prophylaxis and treatment of drunkenness, receives the attention it deserves, and more than it usually receives. Considerable space is devoted to the relation of the State to the vice—high licences, State monopolies, the Gothenberg and Bergen systems, prohibition, penalisation of drunken offences, supervision of the quality of drinks, &c. More important, however, is Dr. Darin's contribution on the medical and moral treatment of the vice—how retreats should be organised and conducted, what powers they should have, what is essential in the way of control, and how the moral rehabilitation is to be effected. There is not enough attention paid to the analysis of the various characters of drunkards—a discriminating study, without which the treatment of the vice will fail, as the treatment of insanity fails, for want of intimate diagnosis.

All over, the work is valuable and suggestive, although, as has been said, rather too diffuse. It is high time that some one should edit an encyclopædia of drunkenness. An editor

of Magnan alone—so sound and oft-quoted an author—would be a most useful person. Dr. Darin, like every one else, makes full use of him and of other writers, and furnishes a considerable bibliography.

Les Troubles auditifs dans les Maladies nerveuses. Par le Dr. F. J. COLLET. Paris : Masson et Cie., Éditeurs. Pp. 182. Price 2 fr. 50 c.

While the condition of the eyes is usually described in the notes of cases of nervous diseases, it is quite an exception to find any reference to the state of the ears and hearing; and one of the reasons which have led to the publication of this small work is to collect a number of positive observations in which the condition of the auditory organs has been a help in diagnosis, and to show that a systematic examination of these organs may be of great importance in certain obscure cases. Moreover, by an analysis of clinical cases, the author is able to deduce certain points of great interest in connection with the bulbar and cortical acoustic tracts.

One of the reasons probably why hearing is not more generally tested in nervous cases is the time required for the investigation; no one method of diagnosis is sufficient, and it is only by a combination of various tests (*e. g.* Weber, Rinne, &c.) that we can conclude that an affection of hearing is dependent on disease of the middle ear or the internal ear, for instance; while the diagnosis between a lesion of the internal ear or of the auditory nerve itself is often not practicable.

The main bulk of the book is devoted to a consideration of the auditory signs and symptoms which are usually, or may be, associated with the various nervous diseases (hydrocephalus, cerebral tumour, meningitis, softening of the brain, tabes, &c.). The general effects of cerebral tumours on the auditory nerves are dealt with in an interesting manner in Chapter 3; and in Chapter 4 is discussed the important question of the function of the corpora quadrigemina. The conclusions deduced from an analysis of cases recorded in this connection are "that the posterior corpora quadrigemina act as a relay along the acoustic tract, and that at this level the decussation of the eighth pair of cranial nerves is already completely accomplished."

In Chapter 6 we find an interesting confirmation of Helm-

holtz's theory of audition based on the clinical observation of cases of meningitis affecting the labyrinth.

Chapter 8, "Auditory troubles in tabes," is another important chapter. It is well to remember here that chronic dry catarrh is frequently present in locomotor ataxy, and has no doubt often been mistaken for true nerve deafness. The possibility of the presence of an anatomical substratum to explain the occurrence of hallucinations of hearing in these cases is wisely emphasised. From the association of sensory and trophic lesions of the face with chronic dry aural catarrh in tabes one is led to conclude that the aural lesions are due to some affection of the fifth nerve; Gellé and Laborde's researches are of great interest in this relation.

In Chapter 10 there is a discussion of the question of a neuro-paralytic otitis media, analogous to neuro-paralytic keratitis, and arising like it from some lesion of the fifth nerve.

In the chapter on neurosis we find an account of the auditory troubles in hysteria, epilepsy, megrim, &c.

Altogether Dr. Collet's little book is a useful addition to that valuable series of monographs, the 'Encyclopédie scientifique des aide-mémoire.'

La Responsabilité médicale ; Secret médical, Déclarations de Naissance ; Inhumations ; Expertises médico-légales.

Par P. BROUARDEL. Paris : Librairie J. B. Baillière et fils, 1898. Pp. 456. Pr. 9 fr.

Professor Brouardel has done well to publish this collection of lectures on medical jurisprudence to the Paris students in book form. The delicate question of medical responsibility, considered from the point of view of French law and opinion, is handled in a fascinating manner by an eminent authority, and cannot fail to be interesting to medical men, whatever may be their nationality, and whatever may be their varying legal responsibilities on this subject.

With the evolution of society the medical man's duties become more onerous, and the difficulties of practice increase; and it is difficult to realise, in reading Professor Brouardel's introductory remarks concerning the antagonism between public opinion and medical opinion, the abuse of hospitals and medical aid societies, the overcrowding of the medical profession, with its attendant evils of advertising, touting,

“dichotomy,” &c., that his observations do not extend beyond the limits of his own country. In 1876, whereas only one or two cases a year, involving the responsibility of the medical man, were dealt with by the French courts, at the present time there are eight or ten per month.

The most important question discussed in these pages is the professional secret in its relations to criminal and civil actions, to life insurance, marriage, &c. The theory which tradition and law have imposed in France, but which is far from being universally accepted, is practically that the medical secret is inviolable. The legislator there has considered that the interest of the health of a man, the social interest in the professional secret being kept, is so great as to place it even above the interest of justice.

The secret imposed upon the medical man is not a privilege; it is a duty imposed upon him in the public interest, and for the violation of which a severe penalty is dealt; whether there be intention to do harm or not,—nay, whether the result be even for the patient's welfare. For example, a woman who has contracted syphilis from her husband, sues him for separation. Dr. Fournier, who had treated her, is called as a witness, and by her released of his secret. Dr. Fournier refuses to give evidence on the point, and his resolution is firmly upheld by the court.

Before the courts the received formula is—“I consider as confidential the relations which led to my knowledge of the facts upon which I am examined, and I therefore cannot answer.”

That difficulties frequently occur, a perusal of Dr. Brouardel's work amply shows, as in the case of medical aid societies, clubs, &c.; moreover, as regards hospital patients, there is practically no such thing as the professional secret. As regards the bulletins which are published when distinguished or notorious personages are ill, there are words of wisdom to be found in the pages of this book which might well be pondered over by the profession in this country.

“In England there is no medical secret,” says Dr. Brouardel, which is, of course, an exaggeration, and the reasons he gives to explain this on p. 131 are simply ridiculous, such as—“In England there is not between doctor and patient the same intimacy as is found in France,” &c.; “their relations are purely commercial,” &c.

Compared with the condition of affairs with us, the relations of medical men to life insurance companies are interesting.

In France no certificate is given by the candidate's medical attendant (whatever may be the state of the candidate's health), and no death certificate, to the company.

The remarks on "declaration of birth" are very interesting. This function often falls to the lot of the doctor to perform, as, for instance, with illegitimate children. In Paris, where nearly a third of the total number of births are illegitimate (*e. g.* 379 in 1157 between February 6th and 12th), this adds to the practitioner's duties, and to his responsibility; for the declaration must take place without revealing the professional secret; this usually means concealing the name of the mother, her address, &c. If the child is killed by its mother matters are still further complicated; for the infanticide must not be revealed by the medical attendant, but the birth must be declared.

Burial is another of those questions which are dealt with very differently in France compared with England; and while the system of having medical men to "verify" deaths, as in Paris, may be in some respects a good one, the condition of affairs in country places is very unsatisfactory; for there, not unfrequently, "people are buried who have never been seen by the doctor, neither during their last illness nor after their death."

Writing a death certificate would be, on the part of the medical attendant, revealing the professional secret; consequently the "verifier" is supposed not only to report the fact of death having taken place, but by looking at the body and hearing the particulars of the last illness from friends, &c., he is supposed to decide that death has taken place from natural causes—a risky performance, it appears to us.

Dr. Brouardel's lectures on medico-legal experts are, as one would expect, excellent. The duties, training, appointment of these experts in France constitute a subject of paramount interest. In civil matters there are usually three experts; in criminal questions only one expert is appointed by the court, a position of great responsibility for any medical man to hold, and requiring important qualifications. Many of us are conscious of the objections which may be raised to the procedure common in this country—the presence of an expert on each side—*i. e.* for the prosecution and the defence. "In England," says Brouardel, "I can affirm that this method [*i. e.* an expert on each side] has given the worst results. The experts become in truth counsels, each pleading for his client, one for the prosecution, the other for the defence."

Finally, Professor Brouardel deals with the question of medical certificates,—certificates of complaisance, imprudent certificates, fraudulent certificates, &c.

The appendix contains a number of interesting letters written to the author by medical men in difficulties as regards medical responsibility, and test cases, &c. It would have been interesting to learn the solutions given by him to the various problems raised in these communications.

We have only referred to the matter with which Professor Brouardel deals in these lectures; it requires a perusal of his book to appreciate the lucid and fascinating style in which the author communicates his views, relieved here and there with such shrewd though perhaps cynical observations as the following:—"Contrasted with man, woman lies with perfection;" "Those who deal with the dead take to drink;" "The medico-legal expert must close his ears and open his eyes," &c.; and finally, the legal taunt to the medical profession, "Get a medical certificate to this or that effect; you will always find a doctor who will give it you."

L'Innervation du Corps thyroïde. Par le Dr. EUGÈNE BRIAN.
Libraire J. Baillière et fils, Paris, 1898.

The undoubtedly important place which the thyroid gland occupies in the animal economy renders any careful study of it worthy of consideration, and in the publication of his paper on the innervation of the thyroid the author is to be congratulated on the completion of a long and painstaking investigation, which is none the less valuable because it mainly corroborates the work of other observers. The most important sections are concerned partly with the origin and disposition of the thyroïdal nerves, and partly with their function.

I. *Anatomical Results.*—(1) The main nerve-supply of the thyroid is derived from the cervical sympathetic branches being given off at various levels, in man chiefly from the second cardiac nerve and from the middle cervical ganglion. The branches form, especially round the inferior thyroid artery, periarterial plexuses, which it is easy to demonstrate in the fœtus by ordinary dissection. A subsidiary supply is constantly derived from the recurrent and inferior laryngeal nerves, each of which sends two or three filaments to the gland. No thyroïdal branches from the glosso-pharyngeal

or hypoglossal were found. (2) Histologically his results are in complete accordance with those previously obtained by Anderson. In the interior of the gland "vascular" and "glandular" nerves were found, the former ramifying in the peri-vascular connective tissue, and terminating in the vascular walls in an undetermined manner, the latter forming anastomoses around the gland follicles and terminating close to the outer surface of the epithelium without actually penetrating between the cells. No ganglionic nerve-cells were found in the substance of the gland, though artificial deposits might simulate their appearance.

II. *Physiological Results*.—(1) A long and inconclusive section is devoted to a discussion of the results of stimulating the various cervical nerves with the view of investigating their influence on the thyroid secretion. The author reviews various histological evidences of the secretory activity of the thyroid, and finally declines to accept any of them as reliable. It does not seem to have occurred to him that there are criteria of increased thyroid activity other than merely histological changes, and he makes no reference to such physiological conditions as variations in the body temperature, or in the general nutrition, which might have afforded a guide. (2) By means of a specially designed and delicate plethysmographic apparatus he investigated the vaso-motor influence of the various cervical nerves, and found that the sympathetic alone produced any result on the thyroids vaso-constriction when stimulated above, vaso-dilatation when stimulated below the inferior cervical ganglion. He concludes by stating that in these experiments may be found the reason for the improvement which has been said to follow division or excision of the cervical sympathetic in cases of exophthalmic goitre. He does not, however, explain by what process of thought he can correlate two such dissimilar conditions as that of the thyroid in simple vascular dilatation, and that in exophthalmic goitre. In fact, as he states, it his inference is quite illogical.*

Hypnotism and its Application to Practical Medicine. By OTTO G. WETTERSTRAND, M.D. Authorised translation from the German edition by HENRIK G. PETERSEN, M.D. G. P. Putnam's Sons.

Dr. Petersen has done useful service in translating into English Wetterstrand's well-known work on "Hypnotism,"

* For inferior read superior laryngeal, p. 602, third line from bottom of page.

as applied to practical medicine. The original is in Swedish, the English translation being from the German. The translator has acquitted himself fairly, albeit his English is not always elegant. Such diction as "but this does not prevent, however," and "he has never had nose-bleed," does not commend itself.

We are gratified to find the author making frequent references to English writers, amongst others Braid, Austie, Broadbent, Douglas-Powell, Balfour, Bristowe, and Lionel Beale.

The work is essentially a practical one, and is commendably free from speculation. The author holds "that most people can be hypnotically influenced by a properly adapted method. Nevertheless both patience and perseverance are sometimes required. "For instance, I finally succeeded in hypnotising a lady of forty, after having endeavoured in vain seventy times to do so." His method is as follows:—"We tell the patient that sleep will most probably cure his disease, and that he will enjoy a quiet, refreshing slumber. . . We ask him to sit down and to concentrate all his thoughts upon sleep. Then, while fixing our eyes upon him, we suggest a heaviness in the lids and the limbs, and an increasing impossibility to move. Continuing to speak about sleep and its symptoms, which soon are to make their appearance, we finally say that they are already there. . . . He is then told that sleep, or even the slightest slumber, is beneficial, and if that state be not obtainable, we make him witness the result upon one or two who previously have proved good subjects."

The author gives a list of the disorders he has successfully treated by hypnosis, and appends numerous illustrative cases. With stutters he has had excellent results. The most inveterate stuttester, we are informed, speaks without the slightest stutter while in the hypnotic sleep. Hypnosis has also yielded good results in diseases, in which one would not *a priori* expect to get much good from it,—to wit, paralysis of organic origin, chlorosis, hæmorrhages, and heart disease (both organic and functional). Our own experience is in complete accord with the author's in regard to the beneficial effect of hypnosis in these diseases. Of chlorosis and allied anæmias he observes, "I can say with certainty that the condition improves after a few treatments, the appetite becomes better, the cold hands and feet grow warmer, the headaches disappear, and, most remarkable of all, the leucorrhœa ceases, and a desire to live and better spirits are

manifested. . . . Most cases of this class are very susceptible to hypnotic treatment. . . . It seems remarkable that a trouble as obstinate as leucorrhœa, and which defies all remedies, should disappear so quickly by hypnotic treatment."

The following case of uterine hæmorrhage successfully treated by hypnosis is as instructive as it is surprising.

"A woman of fifty-seven had suffered from uterine hæmorrhage for some time. I tried various remedies without success. . . . On examination it was found that the vaginal walls in places were as hard as wood and infiltrated. The lower uterine segment was a cartilaginous hard mass. . . . I had recourse to hypnotism, as I had no other means at my disposal, and obtained a sleep of third degree. The hæmorrhage stopped after the second treatment. . . . The discharge diminished perceptibly, and the pains in the back were less severe, so that she was able to sleep better."

After referring to the value of hypnosis in phthisis, the writer adds that he knows "no other remedy that soothes a dying person more than hypnotism, which so often produces a real euthanasia." One other case of successful treatment by hypnosis may be quoted, that of a girl of seventeen who had never menstruated. "I hypnotised her, as she had derived no benefit from iron previously taken. She received the suggestion that her menses should appear at 6 a.m. on September 20th, and continue for three days, without giving her the least pain. She remembered perfectly well what I had said upon awaking. She came on September 22nd, and told me the menses had appeared exactly as I had suggested; the same condition resulted on October 10th and November 19th, and the girl was very well after six treatments."

Sleep, its Physiology, Pathology, Hygiene, and Psychology.

By MARIE DE MANACÉINE (St. Petersburg). Walter Scott, London: Contemporary Science Series, 1897. Pp. 341. Price 3s. 6d.

We reviewed this work a year ago when it appeared as a French translation, and expressed our satisfaction that it was soon to appear in English. We now find that it has been presented in a readable form. The style is clear, and well calculated to attract the attention of the lay audience to whom it is specially addressed.

We are disappointed that no mention is made of Leonard Hill's striking experiments on the circulation of the brain,

and that the treatment of insomnia has been dealt with in a manner which is scarcely trustworthy. The chapter on the physiology of sleep is admirably put together, although the authoress's definition of sleep as "the resting time of consciousness" can scarcely be regarded as any advance on the explanation of that state.

The whole work bears evidence of great research and ability in the selection, condensation, and presentation of the points of interest and importance relating to the subject considered. It contains so much information and such an extensive bibliography that it is well worthy of a place on the alienist's bookshelf.

Methods of securing Health for Insane Convicts. By H. E. ALLISON, Medical Superintendent Matteawan State Hospital, Poshkell-on-Hudson, New York.

The author of this pamphlet treats his subject in a temperate, clear, and convincing style. He briefly sketches the conditions of prison life, reviews the various forms of insanity to which prisoners are usually liable, and classifies the factors which contribute, both outside and inside the prison walls, to foster the onset of mental disease. He describes the individuals who by some insane act break the law, and are afterwards improperly convicted. Such cases not unfrequently occur in this country, more especially in connection with minor offences. At the trial the insanity is either undetected or ignored. The author next portrays those criminals who become insane through conditions within the prison, and through regret and dwelling upon crime; and he states that this class constitutes a large proportion of the criminal insane. No doubt the prolonged anxiety and suspense endured while awaiting trial, the excitement of the legal proceedings, and the subsequent reaction are fruitful sources of danger, especially in the case of those who are predisposed to mental unsoundness. Dr. Allison's third category comprises the class of habitual criminals whose excesses and debaucheries while at large, combined with the effect of repeated imprisonments, sometimes undermine the mental health. These individuals, he considers, are unfit to associate with the inmates of an ordinary asylum, on account of their frequent dangerous and homicidal tendencies, and their propensities towards house-breaking and lock-picking, which necessitate constant vigilance on the part of those under whose care and

treatment they are. In conclusion he advocates the detention of the insane convict in an institution specially designed for the purpose, where he should have, as far as possible, all the benefits of treatment for his development and cure that are given to the free citizen in any well-regulated hospital for the insane, and wherein he should be kept until he is pronounced a fit subject for absolute release.

The Planning of Lunatic Asylums. By G. H. BIBBY, F.R.I.B.A., Bottesford. London, fol., pp. 132.

The Housing of Pauper Lunatics. By the same Author and Publisher. 8vo, pp. 113.

These two small works are a compilation of facts relating to lunatic asylums and their inmates. The facts are chiefly those which can be gleaned from asylum reports, &c., and a moderate acquaintance with a large institution, but it is difficult to imagine the class of readers whom they would interest or instruct.

There is nothing of novelty in the contents of these works, which consequently require no criticism—beyond the expression of wonder that they should have been printed.

PART III.—PSYCHOLOGICAL RETROSPECT.

RETROSPECT OF CRIMINAL ANTHROPOLOGY.

By Havelock Ellis.

The Stigmata of Degeneracy among American Criminals.—Dr. Eugene S. Talbot, of Chicago, whose work on the ætiology of osseous deformities of the head and face is now becoming widely known, has lately published a valuable study of such deformities among American criminals (E. S. Talbot, "A Study of the Stigmata of Degeneracy among the American Criminal Youth," *Journ. Amer. Med. Ass.*, April 9th, 1898). The observations were made during 1895–6 at the Illinois Reformatory at Pontiac, and the New York Reformatory at Elmira. The head and face were chiefly investigated. The object of the inquiry was to determine to what extent youthful criminals come from the ranks of the degenerate. The youngest inmates were excluded on account of immature face and jaw development. The total number examined was 414 at Pontiac and 1018 at Elmira, and the average ages (varying between 15 and 30) were at the former place a little over 19, and at the latter 21. Nationalities were numerous, and all those with an American parent were regarded as natives,

birthplace being ignored. Pontiac is more of a reform school than Elmira, which receives an older and graver class of criminals. The inmates of Elmira are consequently markedly inferior in general physique to those of Pontiac, who, indeed, compare very well with the average urban population. The author points out, moreover, that there are special causes producing an accumulation of the most defective classes in New York; not only has the charitable policy of that State induced an undue proportion of the defective and semi-criminal classes to remain there, but there is a general tendency for the more energetic immigrants to move westwards, while the incapables remain on the eastern seaboard where they were landed.

As regards cephalic index, there is a marked dolichocephalic tendency in both institutions; "as it contrasts with the marked mesocephaly of the population whence these criminals are drawn, it is clearly a stigma of degeneracy." Even the negroes were much more dolichocephalic than the ordinary negro population. As regards height of palatine vault, width of jaws, and distance between eyes—to which some investigators attach importance—Dr. Talbot got no very striking results.

His results as regards total number of stigmata of degeneracy in criminals are more interesting. In order to obtain a normal standard of comparison, he took at random a series of forty-two respectable urban residents, and noted their stigmata of degeneracy, especially in head and face. Not one of these normal persons was found to possess more than twelve stigmata (quite a sufficiently high figure, no doubt), and the average for each individual was only eight. But the number of stigmata of the average reformatory inmate was nearly double that of the average normal individual. The native Americans in Elmira presented an average of sixteen stigmata each, those in Pontiac of fourteen.

While stigmata other than those of the head and face were not systematically investigated, the author notes that bodily asymmetries, flat feet, &c., were more common than in the ordinary population. In this connection he refers to the investigation of an American army surgeon, Dr. Woodruff, who examined 138 young criminals in an Illinois reformatory (excluding boys and negroes) precisely in the same way as he would recruits, but omitting subjective tests where untruthful answers might come in. He found that they could be divided into five classes: (1) fourteen who might have been passed, though a careful surgeon would have rejected at least ten; (2) thirty who would only be passed if known to possess some special qualification; (3) thirty-seven who could only be passed in emergency by special authority; (4) thirty-three who could only be passed in time of war, and then only as messengers, &c.; (5) twenty-four totally unfit for any service. It must be remembered that these men belonged to the best grades of criminality. An examination of an ordinary prison (Joliet) led Wood-

ruff to believe that very few of the men were capable of military service.

Dr. Talbot made no attempt to obtain systematic craniometric data; the most notable peculiarity was the large proportion of cases of high bregma, approaching true oxycephaly. There was also tendency to excess of occipital development. Both these tendencies were more marked at Elmira.

The face tended more towards arrested than excessive development. There was no predominance of unusually large orbits, diminished orbital capacity being the rule, and (especially at Elmira) deep sunken eyes. Normal jaws were decidedly in the minority, abnormalities being excessive at both reformatories (63 per cent. at Pontiac and 60 at Elmira). Regularity of dentition, on the other hand, was rather above the average.

The percentage of deformities of ear was rather under that observed in the non-criminal population. Size of ears was not extraordinary; but the ear grows throughout life, and bearing this in mind, Talbot considers that the proportion of very long ears was large. The chief peculiarity was the number of ears set at an obtuse angle to the head.

The general conclusion is that these young criminals, in the vast majority, belong to the degenerate class. At the same time there is no such predominance of one or more features as would justify the creation of a criminal type.

The Jaws among the Degenerate Classes.—Dr. Talbot took advantage of a visit to the Moscow Congress to cover nearly all the countries of Europe. In all the chief cities he made special observations of the degenerates in the various institutions for the defective classes—prisons, asylums, schools for idiots, reformatories, &c. He has lately published a summary of his results as regards the jaws and teeth. The institutions included in the inquiry were at Athens, Constantinople, Vienna, Moscow, Stockholm, Hamburg, Amsterdam, and Paris, together with six of the chief English idiot asylums. Figures are given with more or less fulness for each of these institutions. (“A Study of the Deformities of the Jaws among the Degenerate Classes of Europe,” *Journ. Amer. Med. Assoc.*, February, 1898.)

The general result is to show a gradual increase in degeneracy from the examinations made in Greece to those in England, deformities being, further, more numerous in the private institutions for the better classes than in the public institutions. Previous examinations made by Dr. Talbot in Spain, Italy, and Switzerland had shown a very small percentage of deformities of the jaws and teeth. “These observations have proved to me,” he concludes, “what I long ago suspected from my studies of the degenerate classes which have come to America, and which fill our public charitable institutions as well as our prisons, that the higher the intellectuality the greater the degeneracy of the jaws and teeth.”

Criminality in Russia.—It appears to be very difficult to examine criminals in Russia, on account of official regulations, imperfect data, and, not least, the extreme unwillingness of prisoners to give assistance, any attempt at investigation being regarded as made with hostile object. Professor J. Orchansky, of Kharkoff, has, however, lately published an interesting medico-psychological study of certain general aspects of Russian criminality (Orchansky, "Les Criminels Russes," *Archives de Psychiatria*, vol. xix, fasc. 1, 1898).

A striking and interesting point brought forward is the very small incidence of insanity among Russian criminals. The proportion of insane and idiots found among Russian recruits is four per thousand; including women, we may say, according to Russian alienists, that the proportion for the country generally is three per thousand. But among 90,000 criminals at trial, there are only 304 examinations into the mental condition, and many of these are not insane; so that we reach, says Orchansky, the bizarre conclusion that the proportion of insane persons among criminals is not greater than among the general population, *i. e.* 3 per 1000. The evidence scarcely seems conclusive, but Orchansky adds that it is confirmed by the evidence of prison surgeons. He points out also that, as compared to Western Europe, Russian criminals come chiefly from the country, which furnishes a smaller proportion of mental diseases than the cities.

Orchansky finds that the size of the head is the same both among the worst criminals, and among soldiers punished for petty offences against discipline. The circumference of the head, both for criminals and the ordinary population, varies between 50 and 55 centimetres. In appearance also, he remarks, Russian criminals resemble the ordinary population. (Twenty-five photographs of Russian women criminals accompany the paper.) We seldom meet the deformed face so common among criminals in the rest of Europe. (This impression, it may be added, thus confirms Talbot, who found stigmata of degeneracy very rare among Russian criminals.) Orchansky does not deny the reality of the portraits drawn in so masterly a manner by Dostoievsky, but regards them as a small minority.

The maximum of Russian criminality is to be found in the neighbourhood of Odessa and along the rivers Ural and Volga, and then around Moscow. It is in these districts that the population is most shifting.

Drunkenness, especially in what the author calls its epidemic and communal forms, is the chief exciting cause of Russian criminality. Such drunkenness indicates a race scarcely emerged from barbarism; "the primitiveness of the civilisation is the basis of our criminality."

The psychology of Russian criminals has been little studied. A leading trait is the unwillingness to confess, even at any stage; only

37 per cent. confess their crimes. Another trait is the marked contentment of the prisoners. Only the criminals from the Caucasus suffer from home-sickness, the others laugh and sing, and show every sign of happiness. "As things are, our prisons present to the majority of their inmates an amelioration of their ordinary existence." We must also remember the cheerful fatalism of Russians. As a rule Russian murderers have an unstained past up to the date of their crime, which may have been produced by a most futile cause; it cannot even be said that they drank more or oftener than others of their class. There is no criminal "class" in Russia; it can only be said that we have to do with "a primitive psychic organisation, lacking the elements of maturity and solidity acquired by historical development and transmitted by heredity." The superficiality of the criminal taint is further shown by the fact that in Siberian towns, inhabited mainly by old criminals, it is possible to live in even greater security than in many Russian towns.

The Physical Development of Criminals.—A French army surgeon, Dr. J. Marty, has lately published the results of his investigations of criminality among 4500 French soldiers, usually only guilty of somewhat petty offences. He compares the results throughout with the measurements obtained among 10,000 non-criminal French soldiers ("Recherches statistiques sur le Développement physique des Délinquants," *Archives d'Anthropologie criminelle*, March 15th, 1898).

As regards height, he finds that there is an excess among the criminals both of short statures and low statures, the medium statures being deficient. The general average is a few millimetres below the normal. As regards weight, he confirms those observers (Lombroso, Franchini, Bischoff, &c.) who found that criminals are somewhat heavier. As regards chest circumference the same result is reached as regards height; large and small circumferences are unusually frequent, medium circumferences unusually defective. Somewhat the same result is reached as regards general health and constitution; "very good constitutions" are only 11 per cent. of the normal corps, as against 19 per cent. of the criminal battalion; the "good" also are 49 per cent. of the first, as against 62 of the second; while the fairly good, on the other hand, are 30 per cent. of the normal corps, and only 14 per cent. of the criminal battalion, while the feeblest class are 1·5 of the normal, and 2·5 of the criminal men. The author endeavours to account for this result by the theory that in the bad social conditions which produce criminals only the strongest can survive.

He has also noted the temperament, and finds that all the simple temperaments (except the sanguine, which is equal) are defective among the criminals, while mixed temperaments predominate. The explanation offered is that "a good condition of

life to avoid disorders is the possession of an organism which tends always to impress on the individual an identical line of action."

Insanity among Criminals.—Dr. Allison, the experienced superintendent of the Matteawan State Hospital of New York, has lately been discussing the forms of insanity among the criminals which his position brings him in contact with (H. E. Allison, "What constitutes an Insane Criminal?" *Albany Medical Annals*, December, 1897; "Method of securing Health of Insane Convicts," *Journal of Social Science*, December, 1897). The number of insane in custody in the State of New York is about 20,000. Of these nearly 700 may be classed as insane criminals. Insanity is very prevalent among the convicts. The three chief New York prisons have a total population of about 4700, and the average yearly commitments to Matteawan are 54, showing that 1 in 87 becomes insane annually. (A small percentage of these were insane before the crime.)

All varieties of insanity are found, though very strongly modified by criminal habits, so that, as is found elsewhere, insane criminals are an intractable and dangerous class. With regard to causation, insane criminals are here divided into three groups: (1) causes arising outside prison life; (2) causes mainly due to conditions within prison—confinement, reflection, &c.; (3) mixed causes. The first class are benefited by removal to asylums; they are dangerous, but not really criminal. The second class have often been confined in small, dark, insanitary cells, and are also greatly improved by removal to the asylum. Dr. Allison speaks strongly against the custom of using dark cells for purposes of punishment, and also refers to the prevalence of insanity among long-term prisoners. "Twenty-three per cent. of the life-men in the prisons of the State are inmates of this hospital to-day. Most of them are hopelessly insane." The author agrees with those observers who assert the intellectual and moral superiority of murderers over other criminals. The third class is made up of degenerates, mostly recidivists and often imbeciles. The individual of this class is never quite sane; "his insanity may be regarded simply as an exacerbation of his natural condition."

It is interesting to compare the average length of confinement in Matteawan with that in an ordinary prison. Allowing the usual deduction for good conduct, and excluding life and execution sentences, the average sentence served in Sing Sing is three years nine months and twenty-four days; at Matteawan, including deaths and transfers, it is five years and one month. "The popular idea that the asylum is a shield, under cover of which many guilty persons escape the penalty of crime, is not, I think, borne out by facts." Dr. Allison recommends reformatory methods for the young and the indeterminate sentence. The chief point to be decided, he concludes, before degenerate and insane individuals are released, is

whether it is safe for the community to permit such persons to be at large.

The Elmira Reformatory.—The Twenty-first Year-book of the New York State Reformatory (for 1896)—“editing, typography, illustration, and binding, the product solely of prisoners’ labour”—is as usual an attractive and instructive volume, and is furnished with some forty process illustrations. There are no strikingly new features to record, either in the volume itself or in the work of the Reformatory, and in the case of an institution which has been so widely misunderstood and attacked nothing is more to be desired than uneventfulness. Two points may, however, be mentioned. In accordance with a new law passed by the State (not actually in operation during the period covered by this report), the prisoners must be constantly employed without producing any commodities of value. At present thirty-four trades are being taught in the Reformatory; how far it will be necessary to discontinue these trades, which have an enormous influence, direct and indirect, in preventing crime (less than 2 per cent. of the prisoners know any trade on admission) is not clear from the report, but the managers are working in the direction of the new law, and have specially developed the Sloyd system and similar methods of manual training, which appear to work very satisfactorily. Another point is the unusually high insanity rate during the year. In a population of 1400, not less than twenty-three were transferred to the Matteawan State Asylum. In partial explanation of the high ratio, we are told that “there has been a more liberal interpretation of mental alienation in the past year, and ‘insanity of conduct’ has, in certain cases, been referred to lesions of the mind. Of those committed to Matteawan as insane, and prior to being so adjudged, nine were instances of crankism, ‘borderland dwellers,’ and might properly be termed mattoids; eight were psychopaths, deficient in inhibitory power, and subject to recurring nervous explosions; and seven gave a faulty family history of alcoholism in the father and epilepsy or insanity of brother or sister.” It should be added that, according to a recent law of New York State, no direct transfer to the asylum can be made by the Reformatory officials; application must be made to a judge, who appoints a commission of two physicians who are qualified examiners in lunacy; these report to the judge, who, in the event of the case being declared on oath to be one of insanity, issues the order of transfer to Matteawan. Coincidentally with this increase in insanity there has been an accompanying increase in the attempts to feign insanity, sixteen cases (equal to the aggregate of over three preceding years) being reported.

The work of the gymnasium has been extended on account of its beneficial results, the plan of subjecting all new arrivals to it for a season having been found specially satisfactory. As the gymnastic system has now been operating side by side with the

military system in the institution for seven years, it has been possible to reach valuable conclusions concerning the relative value of the two systems. The comparison is here worked out in some detail, and it is stated that while military discipline and exercises show certain advantages, the more scientific and thorough methods of gymnastics are, on the whole, to be preferred.

Special training, partly in connection with the new manual training department, is devoted to three groups, differently organised according to their special requirements: (1) mathematical dullards; (2) those lacking in self-control; (3) stupid or mattoids. (It may be here pointed out that to identify the "mattoid," as is here apparently done, with the "all-round defective," is a loose and unjustifiable misuse of terms, and should not be sanctioned.) The first group were almost or quite incapable of solving the most elementary problem in mental arithmetic, and were sluggish, sleepy, and dreamy, whether at work or repose. They suggested arrest of mental growth. They received five hours' special exercise per week, half an hour at a time, with daily rain-bath and rubbing down; the exercises include light calisthenics with loud counting and simultaneous movements, the laying out of geometrical fields for athletic events, jumping, and target-throwing, each feat being measured and recorded by the performer. The second group are superior both physically and mentally to the other groups, though they sometimes show the deteriorating effects of sexual abnormality, and their exercises are specially devoted to the cultivation of self-control and self-reliance; it has been found possible to greatly increase their will power. The third group of all-round defectives are not far above the standard of feeble-mindedness, and it is a great object to arouse them from the lethargic state into which they periodically relapse. The bath has here been found very useful. Physical defects of many kinds are common in this class, and such conditions are met by special exercises. "After a general *résumé* of the work accomplished, it can be safely asserted that outdoor athletics and gymnastics have proven to be, in a measure, a prophylactic for a number of ills to which these three groups of defectives are subject."

The volume concludes—in pursuance of a method initiated in the previous Year-book—with nineteen tables giving the age height, age weight, age lung capacity, height lung capacity, weight lung capacity, weight height, age strength of chest, &c. Of the 538 prisoners committed during 1896 the averages are almost the same as for the previous year, the age being twenty years ten months, weight 135½ lbs., height 5 feet 5 $\frac{1}{16}$ inches, lung capacity 210 cubic inches, strength of chest 60 lbs., &c.

The Idea of Responsibility.—Professor Hamon, of Brussels, who has devoted considerable study to the development of the modern conception of criminality, has lately discussed at some length the question of responsibility. The question may seem an academical

one to many, but a review of it, especially when effected with Professor Hamon's vigour and lucidity, will be found not uninteresting. (A. Hamon, "La Responsabilité," *Archives d'Anthropologie criminelle*, November, 1897.)

He starts with the statement that the biological root of the ideas of law and justice is to be found in the reflex instincts of defence. That is the immediate basis of the most primitive of laws, the *lex talionis*. To the reflex action of pure defence succeeds the reaction at a long interval. This delayed reaction or vengeance may co-exist with immediate reaction, but it appears at a much later date. The responsibility is no longer regarded as individual; it becomes familial, communal, tribal. The law of retaliation is developed and codified, but, slowly though unceasingly, at the same time the idea of responsibility becomes restricted. At first inanimate things, then animals, finally corpses, were regarded as irresponsible. This evolution has only been completed lately; in the seventeenth century animals and corpses were still solemnly tried and executed. Thus while responsibility was being socially extended, it was being individually restricted. It began to be held that to be really the author of an act the individual must be *compos mentis*. But no one had yet asserted that the insane were not *compos mentis*. Before 1789 insanity appears to have been practically unknown to French law; (a seventeenth century rule prescribed that no one in a state of insensate fury should be punished, but this rule was of no effect); one eighteenth century magistrate, indeed, Serpillon, raised his voice against the custom and law, but jurists firmly resisted any meddling with solidly established traditions. Even the French Revolution failed to bring any recognition of insanity into legal codes; it was only through the influence exerted by Pinel that, in a grudging and restricted manner, the irresponsibility of the insane began to be recognised. How much progress was left to make Professor Hamon shows by bringing forward incidents which have taken place down to the present, and by the quotation of the uncertain and conflicting opinions of authorities.

By the constant efforts of men of science the field of irresponsibility has thus constantly grown larger, and the author proceeds to discuss various contemporary attempts to state the matter scientifically. Thus, dealing with M. Tarde, who admits all degrees between complete responsibility and absolute irresponsibility, he remarks that "responsibility is not a state of consciousness," and that while there can indeed be all degrees of consciousness, there cannot be all degrees of responsibility, responsibility being merely a human conception, "a purely social relationship without real existence." This confusion between responsibility and state of consciousness Hamon regards as very common, and as therefore very necessary to bear in mind.

It must further be remembered, Hamon points out, that the idea

of responsibility was formulated by lawyers who accepted the doctrine of free will. Now at the present day the doctrine of free will has almost everywhere among thinking persons given place to the more scientific doctrine of determinism. Thus with the disappearance of the doctrine of free will the idea of responsibility is left with nothing to rest on. Responsibility, as Schopenhauer long since said, supposes that an individual could have acted differently from the way he actually did act.

Having thus cleared the ground, and shown that the various new attempts to find a metaphysical basis for responsibility have not succeeded, Hamon briefly and simply states the modern scientific doctrine. The individual and society feel the need to react against a nuisance by suppressing the criminal or preventing his acts. The only real responsibility is social responsibility. So long as we retain that we may, if we like, retain the old doctrine of a free will. "Society has the right to defend itself and to preserve itself. Man is responsible because he lives in society, and only because of that social existence." We are thus brought, Hamon points out, to the acceptance of the old English legal maxim, that every one, whatever his state of consciousness, always acts at his own risk and peril. The insane and abnormal are, *socially*, necessarily responsible.

Since the continued use of the words "responsibility" and "penalty" thus leads to an apparent contradiction, it would be much better, the author concludes, if we finally abandoned them. Every individual who commits dissonant acts in the society he belongs to necessarily provokes a reaction. We should replace the term "social responsibility" by "social reaction." Such social reaction manifests itself in preventive treatment, and in social hygiene and prophylaxis, applied not only to the agent, but to the causes which produced his acts.

AMERICAN RETROSPECT.

By C. Hubert Bond, M.D., B.Sc.

The After-care of the Insane.—The Committee of the American Neurological Association upon the After-care of the Insane have published their report (*Journ. of Nerv. and Ment. Disease*, November, 1897). Their method of inquiry was to issue a circular letter to about fifty-six leading alienists and neurologists. Fifty replies were received, the large majority of which were decidedly favourable to the principle. Only six were doubtful or positively opposed to it: and the chief objections of these were the paucity of the cases likely to be benefited by such aid; the inexpediency of the project, though admitting its possible desirability; and that, while excellent

in theory, it would be impossible in practice. Eighty-eight per cent. of those who were consulted and who replied are of opinion, and some of them very strongly so, that great good would be likely to accrue from a properly organised system of after-care for convalescent or improved cases of mental disease. The majority seem to think that such a system should at first be the outcome of private organisation, and that a successful issue of such would be all the more likely to make out a good case for State aid and recognition at a later date. The number of patients, for whom such provision would be likely to be fruitful of good results, the various superintendents are as yet unable to fix with any certainty, as hitherto it has, of course, not been the custom to inquire into the circumstances and future surroundings of each patient on his discharge from the asylum. The following is a summary of the Committee's conclusions:—“(i) It is the general and well-nigh unanimous sentiment of those who are the most conversant with the needs of the insane in this country that measures should speedily be inaugurated for the temporary relief of discharged, recovered, convalescent, and improved insane patients of the dependent class by organised outside assistance. (ii) As a preliminary step, inquiry should be made of all such patients before they leave the hospital regarding the mode of life, surroundings, and occupation to which they are returning, and appropriate advice given by a medical officer of the hospital. This precautionary measure is, we believe, too often neglected in large institutions for the insane. (iii) The legal provision whereby an allowance of money and clothing is made in some States to each patient on his discharge should be adopted by all. And (iv) that outside assistance can best be provided, we believe, through the medium of an after-care association, which, until its utility be proven, should be entirely a private undertaking, and should be organised like most existing charitable associations depending upon voluntary contributions. Obviously a large city offers the best field for starting and developing such a system.”

The Psychological Mechanism of Delusions is the title of a paper read by Dr. W. Hirsch before the New York Academy of Medicine (*Journ. of Nerv. and Ment. Disease*, March, 1898). It contains a thoughtful, able, and suggestive exposition of the writer's views upon this much vexed psychological problem; and even should the reader be unable to agree with the theory hazarded therein he will probably feel that a perusal of the article has not been in vain, for it sets forth in addition, clearly and shortly, the various explanations that have from time to time been offered of the subject in question. These have been chiefly six, the first of which was that the mind was only partly affected, and that the abnormality was limited to the individual delusions; in this originated the doctrine of monomanias. It is a view that has been generally discarded, owing to the fact being realised that the prominent delusive state is only a part of a general mental disease. A second theory sought to show a relation

between delusions and imperative ideas, on the supposition that the former are often the outcome of the latter; but such is not supported by clinical facts. A more modern explanation, and one that has found not a few supporters, suggests a primary disturbance in the process of association resulting in the formation of a new and morbid *ego*, which gradually predominates over and actuates the normal *ego*. Such compulsory associations are more probably, however, the explanation of certain imperative ideas than of delusions. A fourth theory—and one which, if carried to its logical outcome, would lead us to practically adopt the first-mentioned one—endeavours to trace delusions to a disproportion between the intensity of the emotional tonus of the various ideas one to another. A very favourite doctrine teaches that delusions always depend upon intellectual weakness, the defect in the patient's reasoning power leading him to misinterpret his environment; thus not a single paranoiac could be said to have a normal amount of reasoning power. Hirsch combats this view at some length, and cites the existence of the power of dissimulation, so often observed among paranoiacs, as directly opposed to such a view being tenable. And in close relation to this theory, he says, are all attempts to explain delusions by comparing the mental process of paranoiacs with that of children or savages. He believes much obscurity has accrued by the delusions themselves being considered a pathological entity, and their psychical mechanism necessarily the same, no matter of what nature they are or under what circumstances they occur. He admits, however, that there are certain delusions which may be explained by one or other of the above theories.

The view that Hirsch would prefer to adopt he bases upon a consideration of the nervous system as a whole. Modern investigation, he says, shows that the psychical organ—the brain—is made up of precisely the same material as the peripheral part of the nervous system, and we are therefore entitled to look on psychical disturbances as being caused by the same disorders which are seen in the peripheral nervous system. Thus, for instance, he argues that as the two principal symptoms, spasm and paralysis, produce in the motor nerves convulsions and loss of motion, and in the sensory system hyperæsthesia and anæsthesia, so in the psychical realm paresis of the inhibitory apparatus will cause a condition of exhilaration, while its spasm might cause a retardation of association, as in certain cases of melancholia. Again, pain may be produced in the peripheral end-organ, or in the course of the nerve, or even in the brain itself. The last case is well illustrated by the production of hypochondriacal complaints, and points to a centrifugal instead of the normal centripetal action of the sensory tract—in other words, a retro-action. And it is from this point of view that the writer endeavours to consider primary delusions.

A psychical process may be analysed into its component stages in the following sequence:—Sensations of sense,—perceptions,—

conceptions,—thoughts and ideas (conclusions), emotions and moods. Apply the principle of retro-action to this, and the ready-formed idea, either produced by some emotional state or some other internal cause, such as fancy, dreams, &c., is now the first stage in the psychological mechanism, and, by a process of centripetal analysis, it is transformed into various conceptions, which may go on to produce real perceptions—that is, hallucinations. Delusions and hallucinations are closely related; they both almost invariably have reference to the *ego*—in fact a delusion might be not inaptly termed an hallucinatory idea. The above reversed mechanism would apply to the delusion as to certain hallucinations. The morbid condition is not the formation of the idea or perhaps a primary emotional state as such—for such may occur under perfectly normal conditions—but it is this retro-active mechanism by which the baseless conclusions take the character of reality, just as endogenic perceptions are transformed into real images—that is, into hallucinations.

Headache with Visual Hallucination.—A curious case illustrative of this point is described by Dr. J. K. Mitchell (*Journ. of Nerv. and Mental Disease*, October, 1897). It occurred in a man (age not stated) who came of a healthy stock, and who had no direct neurotic heredity. It is stated that he had indulged in excessive smoking. His complaint, which extended over three years and was increasing, was that of recurrent headache, accompanied by a very curious apparition, followed then by blindness, and finally by loss of consciousness with violent convulsions. Commencing loss of vision always heralded in each attack. The sequence of events was then the appearance of a minute dwarf at a great distance; he would gradually approach, and at the same time would increase in size, till finally he assumed the form of a gigantic gladiator, with bare limbs and armed with a club. During his approach the pain in the head would constantly grow worse. Finally the monster seemed to strike the patient repeatedly on the head with his club, causing excruciating pain, culminating in loss of consciousness, and usually followed by violent convulsions; during the latter there was generally marked opisthotonos. The duration of the attack was formerly about twenty-four hours, but it has gradually diminished to eight hours—that is, between the appearance of the dwarf and his striking the patient's head. The intense pain and convulsions usually last fifteen to forty minutes, and afterwards the patient feels a general sense of soreness, while, in addition, his teeth feel on edge. The eyes were examined, and considerable error of refraction and accommodation in the right eye was discovered. This was fully corrected, but with negative results as regards the headache. It is noteworthy that the attacks only occur between the months of May and December, and that their frequency has increased to one every five days or so, while at first there would be an interval of five months between them. The patient stated that on only one occasion was he able to con-

verse with the giant; and that the reason the latter then gave on being asked why he so tortured the patient was that "he had been ordered to do so, and would continue while patient remained in the country."

Other human apparitions in connection with headaches have been recorded before, the earliest in 1887, but the writer believes that this case is unique in the causal relation between the spectral hallucination and the pain. He is of opinion that this cycle of symptoms is an expression of that multifarious disease migraine, founding this view upon the order of the events in the cycle, upon the periodicity of the attack (malaria having been excluded), upon the progressively increasing severity of the disorder, and from the fact that epileptoid convulsions do sometimes accompany migraine.

Neurasthenia.—An admirably defined picture of this disease is given (*Alienist and Neurologist*, October, 1897) by Professor Dercum. He points out the confused and hazy conception there is concerning this affection even among neurologists, and especially, he says, among alienists; and in support of this he cites Binswanger's new treatise on neurasthenia, where it is taught that all neuropathic appearances, based on a general functional disease of the nervous system, are to be classed under neurasthenia if they do not fall under the fully developed psychoses and neuroses.

A careful distinction is to be made between the application of the word neurasthenic to nervous symptoms associated with general organic visceral diseases and true neurasthenia. For the former spurious variety Dercum propounds the term "neurasthenia symptomatica," in contradistinction to "neurasthenia simplex" or "essentialis."

The fundamental conception of true neurasthenia should be that it is a *fatigue neurosis*, and that its symptoms may be divided into primary and secondary. The former, essential ones, are those directly expressive of fatigue, are prominent, and bear well-defined relations to each other; while the secondary ones are mere outgrowths of these, though it is to be remembered that they too are sometimes pronounced and striking, and are then a possible source of fallacy to the clinician. Charcot's cardinal symptoms were—(1) neurasthenic headache; (2) sleep disturbances; (3) rachialgia and spinal hyperæsthesia; (4) muscular weakness; (5) digestive, and (6) sexual disturbances; and lastly, (7) mental symptoms; the remaining secondary group included all those symptoms not essential to the diagnosis of neurasthenia. Weakness and irritability expressive of fatigue are the essential characteristics of the affection. Thus among sensory disturbances, there may be a general sense of weariness, usually, however, accentuated in one particular spot or another—this spot often being determined according to the nature of the patient's occupation; and it is characteristic of this fatigue and these various aches that rest always relieves, and exertion always increases them. These

symptoms are to be considered as primary. As an instance of secondary ones, the headache of neurasthenia may be accompanied by a sense of pressure or constriction, obviously adventitious, and probably depending on disturbances of the circulation. Again, the spinal tenderness, often distributed in patches down the spinal gutter, is an outgrowth of and secondary to the simple feeling of fatigue referred to the lumbar region. Among visual defects, a common primary symptom is an inability to read for more than a few consecutive minutes owing to a certain amount of pain, and to the letters becoming blurred; irritability is also shown by the presence of distinct photophobia. Should objects look either exceedingly dull or unusually bright, or as though they were either far distant or very large, would be clearly secondary symptoms. To the primary slight impairment of hearing, coupled with great irritability to noises, secondary paræsthesiæ are often added, such as varieties of tinnitus. On the motor side, muscular weakness is so prominent a symptom that Charcot, in grouping it among his neurasthenic stigmata, reserved for it the term *amyosthenia*. Secondary to it tremors may manifest themselves, either as a fine intention-tremor, best seen in the extended hands, or as a fibrillary one, most frequently observed in the muscles of expression. Disturbances of digestion, of circulation, of secretion, and of sexual functions may be similarly considered and divided.

The psychical side of the patient may furnish numerous manifestations of neurasthenia. Of these, a foremost position must be given to a diminution in the capacity for study or for intellectual work, any attempt in this direction being soon followed by signs of exhaustion. Next comes loss of the power of concentrating the attention, which the patient then often mistakes for loss of memory. A lack of spontaneity of thought and of volition, and a general indecision, with mental and emotional irritability, are additional primary psychical symptoms. Secondary ones, however, usually also appear, such as an apparently causeless general sense of fear; this may be a vague general feeling of anxiety, or oftener it is more defined. The latter specialised fears may take most aberrant forms, among which agorophobia and claustrophobia find a place.

Finally, Dercum alludes to a condition which he has termed "Neurasthenia terminalis." Under this he includes terminal cases of neurasthenia, in which simple and uncomplicated functional derangement has continued for so long a time as to result in actual tissue change; such cases are largely intractable to treatment.

Melancholia—an *Analysis of 3000 Cases*, is the basis of a paper by Dr. S. Weir Mitchell (*Journ. of Nerv. and Ment. Disease*, December, 1897). Frank admission is made that certain of the tables compiled from these statistics are largely open to fallacy, and in fact the writer disclaims any attempt at dogmatic infer-

ences from any of his eight tables. The following are probably the most interesting points in the inquiry; they are clearly brought out, and are gathered from tables into which error does not so easily enter. It would appear that there is an entire absence of anything like a "seasonal melancholia." For, while it is true that it was during April and December that the largest number of cases of melancholia originated, yet the differences were small, 6·7 and 9·4 being the minimum and maximum percentages that any individual month yielded. The tables of ages were more productive of results. They are classified according to decades, but somewhat unfortunately, in that the influence of the menopause might have been made clearer. The correspondence in the ages of the two sexes is very striking in each of the six decades after the age of twenty; and the figures denoting the average age of the total cases for males and females respectively approximate as closely as 37·2 and 36·25. Of the entire series of cases, the oldest male was seventy-six, the oldest female seventy-eight, while ten and twelve were the ages of the youngest male and female respectively. The age table, as a whole, would seem to show that the time of greatest liability is between twenty and sixty for both sexes, but that under twenty it falls upon girls nearly twice as heavily as on boys. In order to arrive at the influence of the menopause, the decades between forty to fifty and fifty to sixty are specially considered; in the former decade the percentage for men is 20·2 and 21·4 for women, while in the latter the corresponding figures are 15 and 14·2. These two sets of figures, in Weir Mitchell's opinion, seem to dispose of the idea that women are more liable to melancholia at or about this critical period. However, in order to be more accurate, he subsequently calculated the percentages for the years forty-five to fifty-five from a series of 289 males and 354 females, and arrived at a like result, the percentages working out at 20·25 and 19·8 respectively. No mention is, however, made of the fact that climacteric changes may and probably do exert their influence among men as well as women. He further is of opinion, and is supported in it by comments from Dr. Chapin, that there is no special tendency for women to recover from insanity at the climacteric period.

Xerostomia, or "dry mouth," is a very rare condition, and until recently there were on record but little more than a dozen cases. Dr. Thomas Harris describes (*American Journal of Medical Sciences*, March, 1898) a well-marked example occurring in a woman aged 30. She complained of intense dryness of the mouth with the resulting great discomfort; and, associated with the arrest of the buccal and salivary secretions, was an enlargement of both parotid glands. Each gland felt firm and dense, and on firm pressure a little glairy tenacious secretion could be squeezed from their ducts, both of which were patent. The senses of taste and smell were greatly interfered with, and any acid food or drink, or glycerine prepara-

tions caused much pain, while plain cold water was found, after numerous methods of treatment, to afford the greatest—in fact, the only—relief. The condition had existed for three years, and was preceded by a febrile attack, believed to be influenza. Both jaws were quite edentulous, and, as far as the patient could recall, the crumbling away of the teeth had occurred within these three years. In addition she was extremely anæmic and suffered from palpitation. The family history was obtained fairly completely, but yielded no facts bearing on the case. She herself was of an extremely nervous disposition. With the view that the parotid enlargement might be reflexly dependent upon some pelvic affection, the necessary examination was made, but with negative results. Dr. Harris supplements his paper with a brief outline of twelve other cases described by other observers. Parotid enlargement by no means accompanies them all, and in some it has been relapsing in character, and, since the secretion of not one only but of all the salivary glands is arrested, the parotid enlargement and the “dry mouth” are most probably due to a common cause. It is highly probable that xerostomia is the result of a functional derangement of the nervous system. Most of the cases have occurred in people advanced in years, and with two exceptions all in the female sex; the condition had usually existed many years, and was very unamenable to treatment.

A Brief for the Cigarette is held by Mr. W. H. Garrison in an article appearing in last December's number of the *Medico-Legal Journal*. An editorial in the same number states that the paper in question may be regarded as an opening of the discussion against the present popular prejudice regarding the cigarette, and reproduces a letter of inquiry, which has been sent to the various boards of health, superintendents of insane hospitals, &c., with a view of eliciting the opinion of those to whom the subject must have considerable importance.

Mr. Garrison brings out clearly the great prejudice in which the cigarette is held by the public, and mentions two State legislatures and two cities that have even forbidden the sale of the article within their borders. He gives an entertaining history of the cigarette, dated from 1842. At the present day, according to the chief chemist of the U.S. Department of Agriculture, the commodity in question has an annual consumption of four thousand millions, and, selecting the brand which comprises more than half this number, a sample may be said to contain 1.0926 grms. of tobacco, enveloped in a paper wrapper weighing 0.038 gm. The purity of these two ingredients remained unchallenged until the year 1888, when it was asserted in a London daily paper that the tobacco contained a large amount of opium and an unclassified alkaloid, while in the paper either arsenic, copper, or chlorine was to be found. No scientific evidence or authoritative analysis accompanied these assertions; nevertheless the whisper, handed on from

writer to writer, has grown in magnitude and become an accepted fact. The anti-cigarette crusade culminated in 1892 in a petition to Congress for a heavy tax on the article, the petitioners alleging that for the deaths of "100" boys under sixteen in the previous year, and for the presence of "100" men in the lunatic asylums, the cigarette was responsible. The writer comments upon the attractiveness which such round numbers have to those only superficially informed, and goes to considerable pains to demonstrate the entire lack of any scientific investigation in support of these vehement endeavours to place the cigarette into a prominent place in the domain of toxicology. Science, he says, as a matter of fact finds a unanimous verdict in favour of the luxury. In corroboration of this he quotes the findings of men of repute both in America and this country, which show that the fillings of samples purchased in the open market contain no morphine, strychnine, or other drug foreign to tobacco; that the latter is of "bright Virginia," which contains only from 1 to 1½ per cent. of nicotine, while 8½ per cent. may be found in the best brands of domestic cigars; and that the wrappers yield no trace of arsenic, white-lead, or other poison. The writer disclaims any wish to assert that tobacco is innocuous; he only claims that science has proved that cigarettes are made of good tobacco.

ENGLISH RETROSPECT.

By Dr. Fleming.

The Therapeutic Value of Spleen Extract. By A. Campbell Clark, M.D. (*Edin. Med. Journ.*, February, 1898).—Dr. Clark gives the results of an investigation at Lanark County Asylum extending over a period of two years. The object aimed at was the cure or alleviation of mental disease, and was suggested by the frequency of splenic deficiency noted in asylum post-mortem records. Three classes of cases were submitted to treatment: 1. Those of an intractable character, *e. g.* chronic inertia. 2. Recent cases of insanity due to physical weakness, *e. g.* puerperal cases. 3. Selected cases suggested by treatment of the first two classes. He quotes the result of six out of thirty cases, and arrived at the following conclusions:—That splenic treatment (1) increases nutritive activity by aiding digestion and stimulating the glandular activity of the skin; (2) gives rise to striking mental changes, sometimes of an abnormal character—exhibition of temper in stuporose cases; elevation in shy and stupid cases, &c. Contrasted with thyroid treatment, spleen treatment was more phenomenal in its effects, more lasting and sure in its results, and exceedingly safe. He strongly recommended a preparatory course of spleen in any case where thyroid treatment was proposed.

Hypnotism and Crime. By A. Stoddart Walker, M.B., F.R.C.P.E. (*Edin. Med. Journ.*, January, 1898).—Criticising a paper by Dr. Milne Bramwell "On the Evolution of the Hypnotic Theory," Dr. Walker discusses at some length the important question of the suggestion of crime. The results in his opinion depend on whether the suggestion involves the safety of the individual or not. He found that the hypnotised subject refused to commit an experimental crime without reason; but that, as a means of self-defence, the suggestion proved perfectly successful. He cites the example of a patient who doubted the suggestion when only warned that a certain person disliked him, but when told next day that the same person only waited for an opportunity to poison him, immediately acted on the suggestion.

Remarks on a Case of Porencephaly. By G. A. Gibson, M.D., F.R.C.S.Ed., and W. Aldren Turner, M.D., F.R.C.P.Lond. (*Edin. Med. Journ.*, February, 1898).—The following case is reported from an ætiological as well as pathological point of view. The patient, aged 22, was admitted into hospital in a status epilepticus, and died next morning. The history showed that the illness dated from birth. The labour had been tedious and difficult, and had required instruments, leading to injury of the patient's head. Three days after birth she had left-sided convulsions which passed off, but shortly it was found that she was paralysed in the left hand, and that there was asymmetry of the head. She was backward at school, and never learnt to write. While at school she developed convulsions, the fits increased in number and frequency, and after them she was almost insane. At the post-mortem the extremities were of equal length, but the circumference of the left was less than that of the right. The left half of the skull was much larger than the right. The frontal sinuses were large, and the skull itself thin. The middle and posterior fossæ on the left side were larger than those on the right. The right hemisphere of the brain weighed $5\frac{1}{2}$ ounces, and was partly cystic. The cyst consisted of the occipital lobe, the convolutions round the posterior end of the fissure of Sylvius, and the ventral part of the temporo-sphenoidal lobe. The gyri over the cystic portion, with the exception of the gyrus fornicatus, the tip of the temporo-sphenoidal lobe, and the paracentral lobule, were atrophied and replaced by fibrous tissue. The basal ganglia were also atrophied. As the cystic portion corresponded to the distribution of the posterior cerebral artery, the authors concluded that the primary lesion was probably thrombosis of that artery. The left half of the cerebellum was atrophied, showing a crossed cerebello-cerebral connection by way of the superior and middle peduncles. Sections of the pons and medulla showed partial atrophy of the mesial fillet on the right side, the internal fibres being least affected, supporting the view that the mesial fillet ends partly in the optic thalamus, and is partly continued direct to the cortex cerebri. There was partial

atrophy of the right pyramidal tract. The paper was further illustrated by three excellent plates.

ITALY.

By W. Ford Robertson, M.D.

Bacteriological Researches in Acute Delirium.—The question of the relation of certain forms of acute mania to bacterial infection is one that has lately been brought prominently forward in this country. A recent paper by Ceni (*Rivista Sperimentale di Freniatria*, 1897, Fasc. iv, p. 796), in which the observations that have been made upon the subject on the Continent are somewhat fully reviewed, may therefore merit notice here at some length.

For some time, he says, there has been an inclination to regard acute delirium as determined by either auto-intoxication or infection. Briand in 1881 was the first to observe organisms in the blood in such cases, and to contend that the condition was infective in origin. In 1884 Rezzonico described a case in which the vessels of the brain contained emboli of micrococci. In 1892 Buchholz observed bacilli and micrococci in preparations from one case, although cultures made from the blood remained sterile. About a year later Bianchi and Piccinino asserted that they had demonstrated experimentally the infective nature of acute delirium. They isolated from the blood and cerebro-spinal fluid of patients who died from the disease what they believed to be a specific form of bacillus. In some forms of acute mania they were unable to find this organism, and they concluded that among the forms of mental disease attended by acute delirium there is one to which we are entitled to give the name of "acute bacillary delirium." This form was distinguished from all others, according to the authors, not only bacteriologically, but also "by the greater intensity of the symptoms, by the adynamic phase which quickly follows that of excitement, by its very rapid course, and its fatal termination." Rasori shortly afterwards described another form of pathogenic bacillus which he found in the blood and cerebro-spinal fluid in a similar case. In 1895 Martinotti stated that he had been able to isolate from the blood and cerebro-spinal fluid of cases of acute delirium only some common organisms, staphylococci and micrococci, which, on the other hand, Bianchi and Piccinino had only been able to obtain from allied forms of mania. In 1896 Cabitto made a bacteriological examination of five cases which were clearly of the nature of acute primary delirium. He was unable to find any organism in the blood. In one case, however, he found in the liver and spleen an organism identical with that of Bianchi, and also the *Staphylococcus pyogenes albus*. It is thus evident that the observers who have investigated the

subject of the relation of acute delirium to bacterial infection are by no means in accord with regard to it.

Ceni has made an examination of the blood and cerebral tissues from two cases of typical acute delirium. He was unable to find the bacillus of Bianchi. On the other hand, he obtained from the blood in both cases pure cultures of the *Staphylococcus pyogenes albus*. He observed the same organisms in microscopic preparations of the brain. These observations Ceni regards as having demonstrated that in acute primary delirium the presence of the specific bacillus described by Bianchi and Piccinino is not constant, while, on the other hand, it is possible to find other organisms in the blood in such cases. The presence of these organisms must, he thinks, be looked upon as the result of a secondary invasion from the natural cavities of the body. It cannot be regarded as having any direct ætiological importance in acute delirium. While, owing to insufficiency of contrary proof, he is unable to deny the existence of a specific bacillary agent in acute delirium, he suggests the possibility of a mixed infection, such as has recently been demonstrated by Sanarelli to occur in certain cases of yellow fever, resulting in the complete disappearance of the specific bacillus in consequence of a rapid invasion of common organisms from the intestine. There are not, however, as yet sufficient data to allow of this hypothesis being accepted. For the present he thinks it is preferable to admit a simple auto-infection by germs which, owing to some special bodily conditions attending acute delirium and the other psychopathic forms in which these organisms have been found, invade the tissues from the intestine, complicating and aggravating the primary disease. This view is supported by various observations in experimental pathology which show that auto-infection of intestinal origin can occur in consequence of powerful disturbance of the animal organism from various causes.

Auto-infection in the Insane.—Some further light on the questions discussed in the paper noticed in the preceding section is afforded by a preliminary note more recently published by Ceni and G. C. Ferrari (*Rivista Sperimentale di Frenatria*, 1898, fasc. i, p. 182). These observers have made a bacteriological examination of the blood of eighteen lunatics suffering either from acute maniacal excitement clinically analogous to that of acute delirium, or from the mental confusion associated with repeated epileptic seizures. In each case cultures were made from the blood from day to day so long as the severe mental symptoms lasted. Growths of bacteria were obtained from seven of the cases (one being an epileptic), while in the remaining eleven the results of the examination were quite negative. In the former group there had been in each case noteworthy elevation of temperature; in the latter there had been none. In the positive cases pure growths of germs were obtained in each instance, and the form remained constant for each individual throughout the period of examination.

These forms were in one case the *Staphylococcus pyogenes aureus*, in another the *Staphylococcus pyogenes albus*, and in the remaining five streptococci. In two of the cases which terminated fatally, the organisms which were isolated were in the one case the *Staphylococcus pyogenes aureus* and in the other streptococci. Although the organisms present were the same in some of the cases, their virulence, as tested upon rabbits, varied greatly. Thus in the two cases which terminated fatally the organisms showed a high degree of virulence, while those from the other cases produced no reaction either local or general.

The authors conclude that, as a rule, in the class of cases under investigation, germs are present in the blood only when there is fever; and that the presence of the fever, and the course and result of the illness, do not depend so much upon the kind of germ as upon the degree of its virulence. The germs have no ætiological relationship to the mental disease. They represent merely a complication, the determining causes of which are at present unknown, but which is probably essentially related to severe disturbance and exhaustion of the bodily forces.

The Parathyroid Glands.—Since the great importance of the parathyroid glands was established two years ago by Vassale and Generali (see *Journal of Mental Science*, July, 1897, p. 611), much labour has been expended upon their further experimental and histological study by several workers on the Continent and in this country. The conclusions formulated in 1896 by the observers just named have been confirmed by the experimental work of several others, among whom may be specially mentioned Gley in France and Welsh in this country. Vassale has recently (*Rivista Sperimentale di Freniatria*, 1897, fasc. iv, p. 915) given a very full account of some remarkable observations made in the course of his own more recent experimental work. The subject of the experiment was a bitch, upon which partial parathyroidectomy was performed, the left internal gland being alone allowed to remain. A few days later the animal presented in a mild form symptoms which are now recognised as those of parathyroid insufficiency, and which may or may not follow partial parathyroidectomy. From these she soon recovered, although for some weeks afterwards there were occasional slight returns. Eighteen months after the operation she gave birth to eight pups, seven of which she suckled. All went well until the fifth day, when the mother was suddenly seized with violent tetany (*tetania*),—the name which the author applies to the group of symptoms produced by ablation of the parathyroids. The illness was so severe that it was feared that the animal was about to die. As indicated by the results of previous experimental observations, very large doses of thyroid gland were at once administered, both subcutaneously and by the mouth. In about three hours the animal had completely recovered, and was suckling her pups. The experiment was subsequently varied in

numerous particulars, into which it is impossible to enter here. Suffice it to say that it was found that further attacks of severe tetany could always be rapidly overcome by large doses of thyroid gland; that, on the other hand, an attack could be induced by stopping a small daily dose of thyroid, and that attacks could be entirely prevented and the animal kept in good health by the daily administration of very large doses of the gland. After lactation had ceased all thyroid treatment was suspended, and the animal still remained well.

In this paper Vassale does not make clear to the reader his own views as to why the tetany of parathyroid insufficiency should be curable by very large doses of thyroid gland. Unfortunately the later papers upon the parathyroid glands by himself and Generali have been published, not in the neurological journal in which their earlier work was recorded, but in the *Riforma Medica*, to the particular issues of which containing the articles in question we have been unable to get access. Vassale, in the paper under review, seems almost to imply that he attributes the potency of the thyroid gland in the tetany of parathyroid insufficiency to the fact that it contains, or has attached to it, the internal parathyroids. But the experiments of Welsh in this country have shown that the ingestion of parathyroids has no influence in overcoming the effects of parathyroidectomy.

A point of much interest in the above experiment is that this animal suffering from parathyroid insufficiency could take enormous doses of thyroid substance without apparently suffering any of the usual toxic effects of such doses. From 60 to 100 grammes of the dried gland of the pig were given daily for a considerable period.

Vassale points out that this experiment proves that the function of the parathyroids is not only one indispensable to the economy, but one that cannot be replaced by other glands. The early symptoms of parathyroid insufficiency disappeared owing to compensatory action of the remaining internal parathyroid; but rather than a complete functional compensation on the part of the one existing parathyroid, there was probably an adaptation of the organism. This was suddenly disturbed when there arose a cause which acted more or less profoundly on metabolism, the cause in this instance being excessive lactation. Eighteen months after the operation, therefore, the condition of parathyroid functional insufficiency remained in a latent state. The author draws a parallel (without suggesting any identity) between this latent condition in his experiment, and a neuropathic constitution in cases of lactational insanity.

A New Journal.—Still another neurological journal has been started in Italy under the name of the *Rivista Quindicinale di Psicologia, Psichiatria, Neuropatologia ad uso dei Medici e dei Giuristi*. The first number appeared in May, 1897. Each fasci-

culus, of which twenty-four are published yearly, is composed of sixteen pages, and contains, in addition to original articles, digests of current neurological literature and reviews of books. The journal is the organ of the Psychiatric Clinic of the Royal University of Rome, and is edited by Dr. E. Sciamana, Director of the Clinic, and by Professor G. Sergi, who fills the chair of anthropology and experimental psychology. From its commencement it has been conducted with great ability. Many original papers of much interest have appeared in its columns, and the digests of contemporary literature have been numerous, and evidently most carefully written. The journal, the annual subscription to which is only six lire, may be safely recommended to those in this country who may desire to keep abreast of the more important neurological work which is being done in Italy.

Changes produced in the Central Nervous System by Want of Sleep.
—Two Italian neurologists, independently of each other, have recently made some experimental observations upon this subject which furnish a new anatomical basis for clinical phenomena of the first importance in mental diseases.

L. Daddi (*Rivista di patologia nervosa e mentale*, 1898, fasc. i, p. 1) describes the microscopic changes in the nervous system of three dogs, which he compelled to keep continuously awake until they died. One of them was at the same time deprived of food. This animal lived for seventeen days, the other two for eight and thirteen days. Large numbers of the cortical and other nerve-cells showed more or less advanced chromatolysis, swelling of the cell body, and vacuolation of the protoplasm. The method of Golgi revealed also varicose atrophy of the protoplasmic prolongations and disintegration of the cell body. The nucleus presented marked structural changes, and was in many instances displaced to the periphery of the protoplasm. These alterations the author regards as the expression of a process of atrophy of the nerve-cell. He thinks they are not due to an inflammatory process, as the vessels and neuroglia were always normal. In all three cases they were most marked in the frontal lobes, next in the sphenoidal and occipital lobes, parietal lobes, cerebellum, and spinal ganglia. The medulla and cord seemed unaffected. He thinks that these morbid changes in the nerve-cells may be in part due to the modification in the general nutrition which Tarozzi has proved to result from insomnia, but that there are reasons for believing that they are also caused by a special action of insomnia and over-exertion. They are not characteristic of insomnia, but correspond essentially with those found by other observers to result from prolonged electrical stimulation and fatigue, as well as with the changes that have been described in mental diseases, in various forms of poisoning, &c. But although the nature of the lesions is not characteristic, their distribution, and notably their special implication of the frontal lobes, are, the author claims, almost so. He

regards the results of his researches as confirmatory of the theory of Pflüger, according to which during consciousness there is a consumption of the component substances of the nerve-cells, and a restitution of them during sleep. The need of sleep depends upon modifications produced during the conscious state in the elements of the nervous system, and more especially in those regions which he has found affected in his experiments, although the finer modifications corresponding to the purely physiological degrees of this need cannot be demonstrated by any of the histological methods yet devised.

Agostini (*Rivista Sperimentale di Freniatria*, 1898, fasc. i, p. 113) has carried out two very similar experiments upon dogs, and has found changes in the nerve-cells corresponding to those described by Daddi. He gives a minute description of the morbid phenomena presented by the animals during life, and concludes that continuous insomnia induces a state of progressive blunting of the mental faculties, of the sensory perceptions, and of the cutaneous and other reflexes. The clinical picture is one with many resemblances to general paralysis of the insane.

He also relates two cases—one that of a man of forty-five and the other that of a young woman—in which several days of enforced deprivation of sleep resulted in attacks of insanity of sudden onset and characterised by excitement, mental confusion, delusions and hallucinations. Both patients recovered after a prolonged sleep. He also refers to the case of the cyclists who manifested symptoms of serious mental derangement in the course of a six days contest at New York, and relates an experience of his own in an Alpine excursion, when he as well as other members of his party, after walking for three days without any proper rest, suffered in the night-time from various remarkable hallucinations of sight.

Agostini maintains that these cases of mental disorder produced by want of sleep should be included in the group of acute transitory psychoses from exhaustion or from intoxication. The most probable cause of the morbid phenomena is, he thinks, an auto-intoxication of the cortical nerve-cells from excessive production of waste materials or defective elimination of them. Similar changes are produced in nerve-cells by various known toxic agents. These may cause permanent and irreparable alterations in the cells, but more often they cause merely transitory disturbances with subsequent complete *restitutio ad integrum*. He urges that the results of these experimental observations should emphasise the great importance of combating insomnia in the various forms of mental disease especially in their early stages, in order to save the nervous elements from so grave a cause of exhaustion and degeneration.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

GENERAL MEETING.

A General Meeting was held at 11, Chandos Street, Cavendish Square, on the 12th May, 1898, under the Presidency of Dr. T. W. McDowall.

The Council Meeting was attended by Drs. T. W. McDowall, Richard Legge, C. Mercier, E. B. Whitcombe, J. B. Spence, Ernest W. White, E. Goodall, P. W. MacDonald, Harry A. Benham, W. Julius Mickle, H. Hayes Newington, Walter S. Kay, S. Rutherford MacPhail, David Bower, H. Rayner, W. R. Watson, J. M. Moody, and Robert Jones.

Members present at General Meeting:—Drs. W. Julius Mickle, S. Rutherford MacPhail, T. W. McDowall (President), Richard Legge, P. W. MacDonald, David Bower, Walter S. Kay, E. Goodall, J. B. Spence (Registrar), E. B. Whitcombe, Charles Mercier, Ernest W. White, Harry A. Benham, Evan Powell, W. R. Watson, James M. Moody, H. Gardiner Hill, C. Percy Smith, Strangman Grubb, Robert Jones (General Secretary), H. Hayes Newington (Treasurer), H. Rayner, Frank A. Elkins, C. Hubert Bond, A. H. Boys, E. S. Pasmore, John Shaw, G. E. Mould, James R. Whitwell, G. Stanley Elliot, H. C. MacBryan, G. H. Savage, A. E. Patterson, Athelstane Nobbs, Theo. B. Hyslop, C. T. Ewart, T. Outterson Wood, Herbert Smalley, A. W. Campbell, Elizabeth J. Moffett, G. E. Shuttleworth, John Baker, Francis H. Edwards, H. J. Macevoy, H. A. Kidd, A. W. Boycott, Cecil F. Beadles, James Chambers.

Letters of regret for non-attendance were received from Drs. Urquhart, Oscar Woods, A. Turner, and Savage, the last tendering his resignation from the Council, which was accepted with regret.

The following were elected Ordinary Members:—Thomas Aldous Clinch, M.D. Edin., Pathologist, Durham County Asylum. Francis Graham Crookshank, M.D.Lond., M.R.C.S., L.R.C.P., Assistant Medical Officer, County Asylum, Berrywood, Northampton. Robert Vincent Donnellan, L.R.C.P., L.R.C.S. Edin., Assistant Medical Officer, Barnwood House, Gloucester. Henry Byam Ellerton, M.R.C.S., L.R.C.P., Assistant Medical Officer, County Asylum, Nottingham. R. Taaffe Finn, L.R.C.P. & S. Edin., P.F.P.S. Glas., Assistant Medical Officer, Isle of Wight County Asylum. Norah Kemp, M.B., C.M. Glas., Assistant Medical Officer, The Retreat, York. Julius Labey, M.R.C.S., L.R.C.P., L.S.A., Medical Superintendent of the Jersey Public Lunatic Asylum, The Homestead, Gronville, Jersey. Norman Lavers, M.R.C.S., L.R.C.P., Assistant Medical Officer, Camberwell House, London, S.E. John R. Lord, M.B., C.M. Edin., Assistant Medical Officer, Hanwell Asylum, London, W. George William Falconer MacNaughton, M.D., F.R.C.S. Edin., 2, Broadway Buildings, Walham Green, London, S.W. David John Sherrard, A.B., M.B., M.Ch. Dubl., The Laurels, Hailsham, Sussex. William St. John Skeen, M.B., C.M. Aberd., Deputy Medical Superintendent, County Asylum, Winterton Ferryhill, Durham. Robert Hunter Steen, M.D. Lond., Senior Assistant Medical Officer, West Sussex County Asylum, Chichester. John Sutcliffe, M.R.C.S., L.R.C.P. Ed., Assistant Medical Officer, Royal Asylum, near Manchester. William R. K. Watson, M.A., M.B., C.M. Glas., H.M. Prison, Holloway. Thomas Yeates, M.B., C.M., Assistant Medical Officer, Borough Asylum, Sunderland, Durham.

Dr. Robert Jones exhibited a model of a bedstead adapted for fixing to the floors of single rooms, and manufactured by Wilson Brothers, Ledsam Street, Birmingham.

Papers were read by A. W. Campbell, M.D., Pathologist, County Asylum, Rainhill, Lanes, on "Colitis" (with microscopic and lantern demonstrations); by

Dr. J. Turner, M.B., C.M., County Asylum, Brentwood, Essex, "Remarks on Giant-cells in Brains of the Insane, examined in a fresh state, with microscopic demonstrations;" and by E. S. Pasmore, M.D.Lond., M.R.C.P.Lond., London County Asylum, Banstead, on "Observations on the Classification of Insanity."

The members dined together after the meeting at the Café Royal, Regent Street, at 6.30 p.m.

SOUTH-WESTERN DIVISION.

The Spring Meeting of the South-Western Division was held on 19th April, 1898, at Littlemore Asylum, Oxford. Present, Drs. Urquhart (President Elect), Brain Hartnell (Worcester), Iles (Fairford), Sankey (Littlemore), Good (Littlemore), Bower (Bedford), Noot (Broadmoor), Mumby (Portsmouth), Aveline (Taunton), Benham (Bristol), P. W. MacDonald (Hon. Secretary, Dorchester), R. Sankey, jun. (visitor, Littlemore), Blachford (Bristol), Scott (Warneford), and Stewart (Bristol). On the motion of Mr. Sankey, seconded by Dr. Benham, Dr. Urquhart was voted to the chair.

The minutes of the last meeting having been read and confirmed, the Hon. Secretary said the President of the Association (Dr. McDowall) had written to express his regret at being unable to attend, owing to the examinations at Durham University being in progress this week. Dr. Wade and Dr. Richards had also sent letters of regret at being unable to attend.

ELECTION OF NEW MEMBERS.

The following new members were elected:—Davison, James, M.D., M.R.C.P. Lond., &c., Streate Place, Bath Road, Bournemouth. Proposed by P. W. MacDonald, A. Davidson, A. Law Wade. Embleton, Dennis Cawood, M.R.C.S., L.R.C.P., St. Wilfrid's, St. Michael's Road, Bournemouth. Proposed by P. W. MacDonald, A. Davidson, A. Law Wade. English, Evelyn A. V., M.B., C.M.Edin., Resident Medical Officer Eastern Dispensary, Bath. Proposed by L. Weatherley, P. W. MacDonald, A. Davidson. Jobson, Thomas Battersby, M.D., B.Ch., B.A.O.Dub., Assistant Medical Officer Somerset and Bath Asylum, Wells. Proposed by A. Law Wade, E. B. Whitcombe, George A. Watson. Middlemist, Edwin George, M.B., Assistant Medical Officer County Asylum, Dorchester. Proposed by P. W. Macdonald, A. Law Wade, A. Davidson. Sproat, James Hugh, M.B., L.R.C.P., M.R.C.S., &c., Assistant Medical Officer Somerset and Bath Asylum, Wells. Proposed by A. Law Wade, E. B. Whitcombe, Geo. A. Watson. Astbury, Thomas, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer Wonford House, Exeter. Proposed by P. Maury Deas, P. W. MacDonald, A. Davidson.

ELECTION OF HONORARY SECRETARY.

The CHAIRMAN said the next business was the election of the Hon. Secretary. He did not think that would occupy the meeting, except by some one making a complimentary speech, which he thought was very well deserved. (Hear, hear.)

Dr. BENHAM said those who attended the meetings of the South-Western Division knew the time and attention that Dr. MacDonald gave to the work, and he had great pleasure in proposing his re-election. He was sure they could not do better than reappoint him.

Mr. ILES seconded the proposition, which was carried *und voce*.

The HON. SECRETARY thanked the meeting for asking him to continue the work; and while he agreed to do so for another year, he would take this opportunity of saying that perhaps before long it might be as well for the Division to think of somebody else. Not that the work had been other than a pleasure to him, but he did not see why he should go on holding the office, so to speak, for an indefinite time. There were other men—young men—in the division who, he was quite sure, would be willing to do the work, and do it as well, perhaps better ("No")

than he had done it. He wished to thank in a special degree those members who had assisted him by contributing papers. One of the anxieties of an honorary secretary was to get useful contributions, and he thought the South-Western Division would be recognised as having done good work in this direction. (Applause.)

VACANCIES ON THE COUNCIL AT ANNUAL MEETING.

The HON. SECRETARY proposed and Dr. HARTNELL seconded that Dr. Wade's name be nominated for one of the vacancies.

COMMITTEE OF MANAGEMENT.

The following were appointed a Committee of Management for 1898-9:—
Drs. Deas, Benham, Soutar, Morton, Aldridge, and Goodall.

THE NURSING CERTIFICATE.

The CHAIRMAN said they had now to consider "proposed amended Regulations for the Examination for the Nursing Certificate." This was a question of some difficulty. He knew that in Scotland it occupied two or three meetings, and it was a question on which the division must be guided in great measure by Dr. MacDonald's formulating propositions which they could accept, or amend, or refuse. Unless there was anybody present who had given a great deal of personal attention to this matter of the nursing certificate, he thought it would be better for Dr. MacDonald to make a statement to them.

The HON. SECRETARY explained that the first proposition they had to consider was whether they approved of the amendment, that the term of training be extended from two to three years. The second proposition was whether they approved of two examiners being appointed for the whole of England, Scotland, and Ireland. The third proposition was whether they approved of the entrance fee being raised from 2s. 6d. to 5s. These were the three propositions which he thought need only take up any time in discussing. The Chairman had informed them that the Scottish members took up two or three meetings; certainly they took up the greater part of two. The result of their deliberations would assist gentlemen present, though they did not bind them. They voted against three years' training; they suggested that ten examiners should be appointed instead of two, and they approved of the 5s. subscription. He wished to point out that by a resolution passed at the last annual meeting they had that day to take definite steps to instruct their Secretary what to report to the next annual meeting. Whatever resolution they came to that day he was bound to report as the deliberate opinion of this division on these points. He believed Dr. Benham held some strong views on the subject, and he would pass the matter on to him.

Dr. BENHAM said he did not know the Hon. Secretary was correct in saying that he held strong views on these points, but he certainly did hold a strong view that the term of training should not be increased from two to three years. His opinion, based upon the experience he had gained by seeing the training of nurses in the past, was to the effect that if they could not adequately train their nurses in two years' time to pass an examination which was quite within the limits of their capacity, or what he thought they should be taught, the time they spent in asylums was of little use. With regard to appointing two members from each division, it would be nice if one could be in two places at the same time; but if it was expected that he should go round and examine the various candidates, he would say frankly that he should not have the time. If there were members who expressed an opinion in favour of it, or were prepared to accept such an appointment, he had nothing to say. As regarded the raising of the fee from 2s. 6d. to 5s., he did not know why it was proposed to increase the fee. (A voice: "To pay the Examiners.") To pay the Examiners. That was a proposition which so far had not been made to them, and he was not prepared without consideration to express a definite opinion upon the subject.

Dr. BOWER—Do I understand that it is proposed to appoint two Examiners for each division?

The HON. SECRETARY—That is the proposition of the Scottish Division, so as to lessen the labours of the examiners. The amended regulation you are asked to approve or disapprove of is that there be only two examiners. The Scottish Division think this impracticable unless you pay men an actual salary, more than the mere out-of-pocket expenses. I am of opinion, and I think most men will agree with the view of the Scottish Division, that it cannot be done.

Dr. BENHAM—If two men are to visit the whole of England you must appoint paid examiners.

The HON. SECRETARY—You are not supposed to visit the asylums. The *vide voce* will go on as before; this refers to written papers.

Mr. SANKEY said he did not see the good of appointing examiners in the written examination, because there was nothing whatever to do. The Council set the questions that were placed before the candidates. What object could there be in the appointment of public examiners, so to say? The work was done by a committee already appointed. With regard to the question of two or three years' training, he agreed with Dr. Benham that two years was enough. If it was not he did not think the nurses were worth much. He was sure he could not get female attendants to stay three years to undertake it; they would go away, as there would be no inducement for them to stay. As regarded the proposal to raise the subscription from 2s. 6d. to 5s., he thought if these public examiners were not appointed, that would not be necessary; 5s. was rather a heavy sum to ask persons going in for the examination to pay for such a trifling bit of paper as they received to show for it.

Dr. NOOTT said he had had experience of training classes for five or six years past, and although agreeing with the general principle of the examination, there were several things which he thought might be improved. The Medico-Psychological Association having once started a course of this kind, it was a great pity that, instead of encouraging, they should seem, as it appeared to him these new regulations would do, to discourage attendants and nurses from going up for it. It was very difficult in many places for nurses and attendants to appear for examination; but where they did so he thought it was of great benefit to themselves and the institution. Two years was, to his mind, the absolute limit, and he agreed with what Mr. Sankey had said, that if they asked them to come up year after year they would lose all interest in the work. So far as the examination was concerned, it was very important in itself, but it was of very much less importance than the teaching the attendants and nurses had to undergo. He thought the book was far too elaborate in one part, and not sufficiently elaborate in another. That was to say, the anatomy and physiology went beyond what the nurses should do; but when it came to the practical knowledge of their work in the wards, their attention to patients, the method of dealing with classes of patients, suicidal and homicidal, dirty patients, and the nursing part of asylum routine, there was little in the book that might not be improved and enlarged upon, and they might with advantage cut half the first part out and double the second part. (Hear, hear.) As regarded the examiners he had not a word to say, but with respect to fees he thought it was preposterous to ask people in this position in life to pay 5s., and if they happened to fail, 2s. 6d. for each subsequent examination. He did not see how they were going to compel them to do that unless the asylum committee were willing to pay the examination fees, and he supposed there were few asylum committees who would see their way to do that.

Mr. SANKEY—The auditor would surcharge.

Dr. NOOTT said the only way he could see was that asylum committees might be inclined to subscribe to the Medico-Psychological Association in this matter, and relieve the nurses and attendants of all fees. Whenever he had asked members of a class to send in their half-crowns he had done it very shamefacedly; he had not liked it, because he thought it was hard lines on them to be asked to pay at all. At Broadmoor they were fourteen hours in the wards, and

then they came to him for an hour and a half for instruction. He repeated, therefore, that he considered it hard lines to ask them to pay any fees at all.

Dr. GOOD said he did not think they would get the nurses to go in for a three years' training, he found it hard enough to get them up for two years. They attended the first six months, and the next year they were told to attend again, and they said they did not see their way to give up so much of their spare time. They could not do it in asylum time; they had to give up a couple of hours a week, and it was conceivable the lecture came on what they called their half-day. They did not like coming back at half past seven, or at whatever time the lecture was fixed; they went to see their friends, and they did not present themselves at the lecture. If the time of training was lengthened he was certain they would not get nurses to go in for the examination. As regarded the fees, he agreed with Dr. NOOTT that it was very hard lines to make the attendants and nurses pay, and if they increased the amount he thought it would be very few who would do so. As to the examiners, he had nothing to say on that part of the question.

Dr. BENHAM remarked with regard to fees, some of his committee had solved the difficulty by paying the money themselves.

Dr. BOWER said, as to the reason for the appointment of special examiners for various parts, the Association had complaints that the passes in the different asylums were unequal. In some asylums there were no "pluckings" at all, and in other asylums comparatively few passes. It was plainly hinted that this was because each superintendent was able to choose his own examiners, which on the face of it seemed rather an unusual proceeding. The suggestion to appoint special examiners to examine at least the papers of all asylums arose from this fact, and there was no doubt a certain amount of ground for it. Then the difficulty of getting examiners to do so much work without pay or without their expenses being paid raised the next question, and though only two examiners for the whole country, probably it would be an impossible task for them to do the work unless they were men of great leisure. He thought there was a general consensus of opinion that two years' training was quite long enough. As to the payment of the fees, there was a great deal to be said. It could hardly be expected that the members of the Medico-Psychological Association should burden themselves with the expense of this, which was really for the benefit of the nurses, and the county asylum committees could not pay the fees. Asylums like those where Dr. Benham was superintendent were able to do a great deal in the way of gratuities because they had no auditor.

Dr. BENHAM—I beg your pardon. We have an auditor, like every one else.

Dr. BOWER—A city auditor. You do not have a Local Government Board auditor, which is very different indeed. Your auditor is appointed by yourselves, like the examiners at present are.

Dr. BENHAM—He is appointed by Act of Parliament. One is appointed under the Municipal Corporations Act, and the other under the County Councils Act.

Dr. B. HAETNELL said he was also of opinion that a period of three years' training was too long; two years was ample. As to fees, he considered 2s. 6d. quite sufficient. He agreed with Dr. Noott that it was trying to stop a good thing by asking another 2s. 6d. whenever the candidates failed. To ask the nurses to attend a certain number of lectures, and unless they did so they would not be "signed" for, was a retrograde step. As regarded the number of examiners, that was a matter he was not qualified to speak about. They taught and certificated their own, as at Dorchester.

The CHAIRMAN gave a brief *résumé* of the evolution of this question, in reference to the production of the Handbook and the granting of the Nursing Certificate by the Association. He referred to the fact that the Handbook had been a great success, although it represented very diverse opinions and attempted to reconcile opposing views. He held that no question should be asked in the examinations which could not be answered from the Handbook, for that would moderate in some measure the erratic course sometimes steered by examiners,

and ensure fairness for all. They ought to have an authoritative and comprehensive work. For his part, he thought it as good as could be reasonably expected. No doubt it might be held that it was too full here and too restricted there, as it might be looked at individually. He himself was strongly of opinion that nurses ought not to be aborted doctors, but that they should be trained to care for the sick and insane in an intelligent manner. That necessarily meant some anatomy and some physiology, yet not to the detriment of their knowledge how to place a draw-sheet or apply a fomentation. Every nurse should pass some time in attending the sick. That should be compulsory before entering for the certificate. As to the period of training, three years had been proposed in order to bring them into line with general hospitals, but there was considerable difference of opinion as to this point. Scotland had declared for the *status quo* in a very evenly divided meeting. Referring to the proposal to appoint only two examiners, and stating the reasons, the Chairman doubted if two men could deal with the large number of papers sent in without undue sacrifice of time. He concluded by asking the Hon. Secretary to put his resolution.

The HON. SECRETARY—I shall ask the meeting for its opinion as to whether the period of training shall be two or three years.

The CHAIRMAN then put the question, and declared that the meeting was practically unanimous in favour of two years.

Dr. NOOTT proposed—(a) That the meeting disapproves of the proposal to appoint two examiners. (b) That the present system be continued, but that the assessor, who shall in future be known as the local examiner, be not suggested by the superintendent of the asylum, but be directly appointed by the Association.

Mr. B. HARTNELL seconded the resolutions, which were agreed to *nem. con.*

Dr. BENHAM moved, and Mr. SANKEY seconded, that the fee be not increased from 2s. 6d. to 5s.

The proposition was adopted.

COMPULSORY PENSIONS.

The HON. SECRETARY said, as secretary of the sub-committee appointed at their last meeting to report on the question of Compulsory Pensions, he had a short statement to make. With the agenda of this meeting was circulated a report of the sub-committee. Ten days after the report was sent out, viz. on the 25th of March, the Lord Chancellor introduced into the House of Lords a Bill entitled "An Act to amend the Lunacy Acts." Clauses 20 and 21 of the Bill dealt most effectively, and he was glad to say most satisfactorily, with the question of pensions and also gratuities to injured people. He now begged to move that the report of the sub-committee, so to speak, lapse, and that instead they consider Clauses 20 and 21 of the Lunacy Bill, on which he believed Dr. Benham would move a definite resolution.

Dr. BOWER said he thought they might receive the report of the committee, who had taken considerable trouble in the matter, and thank them for it. (Hear, hear.)

The CHAIRMAN—Certainly. Will you take that as read? ("Yes.")

Dr. BENHAM moved—"That the South-Western Division of the Medico-Psychological Association approves of and supports the Pension clauses (Clauses 20 and 21) of the Lunacy Bill Amendment Act, now before Parliament." He said he was a member of the Parliamentary Bills Committee, and about a fortnight ago they met in London, and spent about three and a half hours in considering the new Lunacy Bill. They were unanimously of opinion that they would not get anything more favourable from the Government than these clauses as they now stood. Shortly stated, they were to the effect that every committee should make provision for every servant in the employ of an asylum, which should not be less than that granted on the present scale of the Local Government Board. That was to say, they could go up to two thirds, but on no account was it to be less than was paid to Poor Law servants. They thought that was

the most they were likely to get, and he would propose the resolution which he had read.

Dr. MACDONALD seconded the resolution. He hoped the Government would stick to their guns, and carry the Bill through.

Dr. BOWER—Is it clear that the allowance will be granted without any contribution?

Dr. BENHAM—Certainly. That was one reason why we were so unanimous in supporting the Bill.

The resolution was carried unanimously.

THE NEXT MEETING.

The HON. SECRETARY said the date of the next meeting, according to the present arrangement, would be Tuesday, October 18th. As to the place of meeting, he would suggest that it be referred to the Committee of Management.

The suggestion was adopted.

PAPERS READ.

Dr. NOOTT read a paper on "Points of Similarity between Epileptic and Alcoholic Insanity" (see p. 492), and Dr. BLACHFORD communicated an "Analysis of the Causes of Insanity in One thousand Patients" (see p. 500).

VOTE OF THANKS.

The CHAIRMAN proposed a hearty vote of thanks to Mr. Sankey for his kindness to the members of the division that day. (Applause.) To him it was especially gratifying to meet Mr. Sankey after so many years, and to find him in such excellent health and spirits. He was sure it was as much a pleasure to Mr. Sankey to meet his colleagues of the specialty that day as it was in the days of long ago. This was an anniversary season with Mr. Sankey, for on the following day it would be forty-four years since he was appointed to this important institution. They were also very much indebted to Mr. Sankey for his presentation to the Association library of the *Journal of Mental Science* from the beginning, and now accessible to all the members. (Applause.)

The proposition was carried by acclamation.

Mr. SANKEY, in acknowledging the compliment, said it was exactly forty-three years ago since the last meeting of the Association at Littlemore, and the only gentleman living that he could call to recollection who was present beside himself was their late consulting surgeon, Mr. Hussey, who was now in his eighty-third year. In conclusion he proposed a vote of thanks to Dr. Urquhart for presiding. (Applause.)

The proposition was carried *unâ voce*, and duly acknowledged.

In the evening the members and several visitors dined together at the Mitre Hotel, and a most pleasant evening was spent.

SOUTH-EASTERN DIVISION.

The Spring Meeting of the South-Eastern Division of the Medico-Psychological Association was held at the Middlesex County Asylum, Wandsworth, S.W., on April 20th. From 11.30 a.m. to 1.30 p.m. members were shown round the main asylum, annexe and grounds by Drs. Hill, Rolleston, Ewbank, and Worth. From 1.30 to 2.30 p.m. members partook of light refreshments, at 2.30 p.m. the Divisional Committee of Management met, and at 3 p.m. the General Meeting took place. Present: Drs. Fletcher Beach, J. M. Moody, C. H. Bond, E. W. White, H. Gardiner Hill, C. Rolleston, G. E. Mould, A. Maclean, A. F. Stocker, H. Rayner, W. J. H. Hasted, F. H. Edwards, G. E. Shuttleworth, J. S. Tuke, A. G. Ewbank, A. S. Newington, D. Bower, D. J. Thomson, H. A. Kidd, A. N. Boycott, and Stilwell. Dr. Hill was voted to the chair. The minutes of the last meeting were read and confirmed.

The CHAIRMAN said the next duty was the nomination of Honorary Divisional Secretary for the year 1898-9. It was proposed that Dr. White be re-elected, and reference was made to the fact that this branch of the Association had been most prosperous during his tenure of office, and also to the admirable way in which he had performed his work. The proposal was carried unanimously.

Dr. WHITE thanked the members for re-electing him, and promised that he would do his duty in the future as he had endeavoured to do it in the past.

The question of retiring members of the Divisional Committee was next considered.

Dr. RAYNER expressed his wish to be permitted to retire.

An election took place by ballot, and Drs. Moody and Beach were appointed scrutineers.

The result of the election was that the following members of committees continued in office: Drs. Bower, Boycott, Newington, Moody, Swain, and Thomson; while the retiring members were Mr. Bayley, and Drs. Rayner and Turner.

ELECTION OF THREE MEMBERS OF DIVISIONAL COMMITTEE.

The election of three members of Divisional Committee to fill the vacancies created by ballot then took place.

The HON. SEC. said it was necessary to replace those members who left, by electing members with similar interests. With regard to registered hospitals, Dr. Percy Smith would be very pleased to succeed Mr. Bayley. As regards the other vacancies he had no suggestions to make, as he had not heard the wishes of members.

Dr. BOWER proposed, in the place of Dr. Rayner, Dr. Outterson Wood, who had taken great interest in the Association.

Dr. BEACH seconded.

The HON. SEC. explained that the third must be an assistant medical officer.

Dr. MOODY proposed, and Dr. TUKE seconded, Dr. Bond of Banstead Asylum. As no other names were suggested for election, the chairman put these to the meeting, and they were carried unanimously.

NOMINATIONS FOR COUNCIL.

The HON. SECRETARY said the two names submitted to the Council last year for nomination to fill vacancies upon that body at the Annual Meeting were Dr. Moody and Mr. Bayley, with the result that Dr. Moody had been elected on the Council.

Dr. THOMSON proposed that the names of Mr. Bayley and Dr. Chambers be submitted at the next Annual Meeting to fill vacancies on the Council.

Dr. TUKE seconded, and it was carried.

REGULATIONS FOR NURSING CERTIFICATE.

The HON. SECRETARY said with regard to the proposed amended regulations for the Nursing Certificate, the principal alterations were the extension of the time of service from two to three years, and the increase of fee from 2s. 6d. to 5s.; and it was for the meeting to decide whether to discuss them in detail or to appoint a sub-committee.

Dr. BOWER stated that the South-Western Division, and also the Scottish Division, had come to a definite conclusion, and thought it desirable that the South-Eastern Division should do so.

The HON. SECRETARY then read to the meeting the Schedule of proposed new regulations.

After some discussion the Chairman said, in order to clear the way, it would be best to decide whether to discuss the matter now, or to refer it to a sub-committee.

It was proposed by Dr. MOULD, and seconded by Dr. SHUTTLEWORTH, that the matter be discussed at the present time.

An amendment was moved by Dr. HAZLETT, and seconded by Dr. S. STILWELL, that the matter be referred to a sub-committee, with power to act.

The amendment was lost, and the discussion took place.

The HON. SECRETARY said that with regard to the two or three years, he was in favour of three years, and he could speak with experience, as his asylum was one of the first to take up training, to hold examinations, and to issue certificates of its own before the Association started its certificate. He thought two years an insufficient time. Nurses and attendants who obtained the certificates and medals received extra pay, in many asylums as much as £2 a year extra. They could get employment in public work, and in private cases, and as these certificates were so valuable, it was desirable that the examination should be of a high standard, and he would speak in the strongest terms possible in favour of three years.

It was proposed by Dr. BEACH, and seconded by Dr. THOMSON, that the time be extended to three years.

An amendment that it be two years was moved by Dr. RAYNER, and seconded by Dr. BOWER, and lost.

The members voted as follows:

In favour of time being increased from two to three years, 10; against, 6; the resolution being carried.

The CHAIRMAN said the next point was whether examiners should be appointed by the Council for the special purpose.

Some discussion arose as to whether two examiners would be sufficient for the whole of England.

Dr. SHUTTLEWORTH explained that the desire of appointing two examiners was to obtain a standard of uniformity.

After further discussion the HON. SECRETARY spoke of the varying standards of excellence which existed under the present system, where those who prepared the candidates provided their own examiner. If two General Examiners were appointed by the Association their fees would have to be paid.

After further discussion it was proposed by Dr. SHUTTLEWORTH, and seconded by Dr. WHITE, that the suggested amended regulation on this point be approved and submitted to the Council.

Dr. BOWER moved and Dr. HALSTED seconded an amendment that the Division approves of the present regulations, with the exception that the assessors be in future appointed by the Council, instead of by the Medical Superintendent presenting candidates.

The amendment was lost, and the resolution was then put to the meeting and carried.

The next point considered was the proposed increase of the fee for examination to 5s.

Dr. SHUTTLEWORTH proposed and Dr. BOWER seconded that the fee be increased from 2s. 6d. to 5s.

Dr. MOULD moved an amendment that it stand as at present, but there being no seconder the amendment was not put.

The HON. SECRETARY said the fee should be commensurate with the labour involved, and he thought it should be increased to 5s.

The motion was put and carried.

The HON. SECRETARY asked the Chairman to put the whole of the resolutions with regard to the Nursing Certificate to the meeting *en bloc*.

It was then proposed by Dr. GARDINER HILL that these drafted amended regulations be approved *en bloc*, and submitted to Council.

Dr. TUKE seconded, and the motion was carried.

Dr. TUKE said he understood that this would all be again discussed in July, when the opinions of the other divisions had been given.

THE LUNACY BILL, 1898.

The CHAIRMAN said the next business was the consideration of the Lunacy Bill, 1898, and the Pensions question.

The HON. SECRETARY said the Bill had now appeared as the Lunacy Bill, 1898,

and was introduced by the Lord Chancellor. It was for them to consider whether it was necessary to send any report on the matter, but anything they wished to do must be done to-day.

Dr. BOWER asked for the conclusions of the Parliamentary Committee.

Dr. BEACH said the Committee had come to the conclusion that they would approve the Pension clause, and that with reference to injury. They did not agree that the urgency order should be reduced from seven days to four, because in the country there was great difficulty in getting magistrates to sign petitions. Two ways that might obviate the difficulty, if the Bill were introduced, were for all Justices to sign orders, or for a list of the authorised Justices to be kept at the Commissioners' office, but they strongly objected to the time being reduced. As to the paying of patients, he had sent out to all asylums questions as to the opinion of superintendents on the matter, and of the replies already received far more were against paying than in favour of it. He said the Act also stipulated that no superintendent of an asylum should be permitted to move patients from one part of the asylum to another without the permission of the Commissioners in Lunacy. This he characterised as absurd, as, in the event of an epidemic breaking out, the patients could not be removed to the infirmary.

The HON. SECRETARY, in reply to question, said payment for work done was optional in the Bill, but it would create great difficulty with patients who at present work well if the money were granted to those who do but little. Working patients are now remunerated by luncheons, tobacco, picnics, and other privileges.

Dr. RAYNER spoke of the difficulty of scheduling the work done.

The HON. SECRETARY said he had spoken very strongly against the clause, as the only member from this Division of the County and Borough Asylums on the Parliamentary Committee. Dr. Benham and he stood very firmly against it, and believed in doing so they were representing the opinion of medical superintendents throughout the country.

Dr. RAYNER said the proposal of payment should be approached from a wide point of view, and thought members should be very careful before giving it a direct negative.

The HON. SECRETARY thought it very desirable that the meeting should express an opinion on the matter. He himself was in favour of remuneration by going out to picnics, luncheons, tobacco, &c., as more suitable than money payments, which would cause dissatisfaction and jealousy amongst patients generally, and even aid escape.

Dr. MOODY was opposed to remuneration, as, on account of the size of his asylum, the matter would have to be trusted to subordinates, which he did not consider desirable.

The CHAIRMAN stated that he agreed with Dr. Moody, but thought it would be very desirable that the Parliamentary Committee should recommend an amendment to the clause to enable the Visiting Committee to be empowered to remunerate patients on discharge out of the County Maintenance Fund on the recommendation of the Medical Superintendent. This he said would not be ignoring the liberal tendency that the Bill indicated, but would be making some use of it. He mentioned that the Middlesex County Asylum had the advantage of a large benevolent fund called the Queen Adelaide Fund, which had been of great benefit to patients on discharge.

The HON. SECRETARY seconded this proposal, and spoke of the benefit rendered to patients by a benevolent fund at his asylum.

The resolution that the Visiting Committee be empowered to remunerate patients for their labour on discharge, on the recommendation of the Medical Superintendent, was put to the meeting and carried unanimously.

The HON. SECRETARY said it is taken that the present clause be not agreeable to the division. This was carried.

A discussion took place with regard to the clause of the Bill shortening the period of an urgency order from seven to four days, and several members drew attention to the great inconvenience it would cause.

The HON. SECRETARY stated that he was led to believe the Lord Chancellor was very decided on this matter, as he thought the urgency order had been used in some cases where it should not have been, and his idea seemed to be to reduce the number of urgency orders.

Dr. BOWER thought the action of the Lord Chancellor need not prejudice the meeting expressing its opinion. He drew attention to the difference between English and Scottish law, and thought that what might work well in Scotland might work very badly in England.

Dr. NEWINGTON described the difficulty that often existed in a country district in finding a magistrate, it frequently being necessary to come into a London district to secure one. Dr. Bower proposed and Dr. Rayner seconded, that the Parliamentary Committee be informed that the opinion of this division is against the reduction of the urgency order from seven to four days. The motion was carried.

The CHAIRMAN asked if any gentleman had anything to say about any other clause save that dealing with the pensions. No other point was brought forward.

The HON. SEC. then spoke of the Pension scheme in the Bill. He drew attention to the similarity of the clause to a proposal of his made ten years ago. He stated that it fixes the minimum, leaves a sliding scale for merit in the hands of committees, does not interfere with vested interests in county and borough asylums like his own, and stated he was very strongly in favour of it. He added that it remained for the meeting to discuss the matter, and for him to report upon it to the Parliamentary Committee. He further stated that no deduction would be made from salaries, and that pensions would not be calculated from aggregate service, as is the case under the Poor Law Officers' Superannuation Act, 1896.

Dr. BEACH, in reply to a question, said he understood from the general body of the Parliamentary Committee, that no deductions would be made.

The CHAIRMAN asked if it was the feeling of the meeting that they approved of Clause 20 referring to pensions. The feeling of the meeting was that it was approved of. Clause 21 referring to injuries was also considered, and approved with the following amendment.

Dr. MOODY drew attention to the word "may" in the injury clause of the Pension scheme, and asked whether it should not be "shall."

The CHAIRMAN thought that as it was a small remuneration they might ask for "shall," Dr. Moody then proposed and Dr. Bower seconded that the word "shall" be substituted for the word "may," the clause to read "The Visiting Committee shall grant out of the County and Borough Fund." The motion was carried.

NEXT MEETING.

The HON. SECRETARY said it was considered desirable by the Divisional Committee of Management that visits should be made north and south of the Thames alternately. It would be necessary to go north this time, and it was thought advisable if there was an offer, to visit a private asylum. Dr. Bower, acting on this suggestion, had invited the division to Bedford on the 10th October, the second Monday in the month. The day was changed from Wednesday to Monday, as some members had found the former inconvenient.

Dr. MOODY proposed and Dr. SHUTTLEWORTH seconded, that the division accept Dr. Bowers' kind invitation to Bedford. Carried.

Dr. SHUTTLEWORTH read a paper on "Industrial Training of Imbeciles" (see page 531).

Dr. ALLAN-MACLEAN'S paper was postponed until the next meeting of the Division, from want of time.

Dr. THOMSON proposed a vote of thanks to Dr. Hill, and spoke of the excellent condition of the Middlesex County Asylum.

Dr. BEACH seconded, and remarked that the present state of the building showed the effect of a good administrator who was always at work.

Dr. HILL thanked the members for their kind expression of feeling, and said that he considered it an honour to be visited by the South-Eastern Division of the Association. In the evening the members dined together at the Café Monico, Piccadilly Circus, W.

NORTHERN AND MIDLAND DIVISION.

The Spring Meeting of this division was held at the Lunatic Hospital, Cheadle, near Manchester, May 25th, 1898.

Members present: G. W. Mould, Henry J. Mackenzie, C. K. Hitchcock, C. H. Gwynn, W. H. B. Stoddart, David Nicolson, J. Sutcliffe, W. S. Kay, G. E. Mould, H. C. Halstead, P. G. Mould, Crochley Clapham, and two visitors—Frank A. Gill and D. C. M. Lunt.

Dr. G. W. Mould was voted to the chair.

The minutes of the last meeting having been confirmed, it was explained by the SECRETARY that owing to the late fixture of the present divisional meeting the Council of the Association had been obliged to proceed with the selection of members to represent the division on the Council, and of a member to act as Hon. Sec. to the Northern and Midland Division for the coming year, viz. T. S. Sheldon, M. Macclesfield, and A. W. Campbell, M.D., Rainhill, for the Council, and Crochley Clapham, M.D., Rotherham, as Hon. Sec. These selections were approved by the meeting.

Proposed by the HON. SEC., seconded by Dr. W. SMITH KAY, and carried unanimously, "that future Spring Meetings of the Division be held in April instead of May."

Lunch was kindly provided by Dr. Mould before the meeting, and afterwards members were shown round the hospital and associated residences by the staff. In the evening the members dined together, at Dr. Mould's invitation, in the ball-room of the hospital.

REGULATIONS FOR NURSING CERTIFICATE.

Dr. CLAPHAM having opened the discussion by a *résumé* of the alterations proposed—

Dr. GILBERT MOULD said that, so far as the appointment of two examiners for the papers for the whole of the country was concerned, it was an excellent alteration, for it insured uniformity of judgment. At present the papers were set by one set of examiners, and examined by persons of different systems, probably taking different views of what the questions meant, and to what standard they should conform. It was still proposed to leave the *vis à voce* examination in the same state,—that was to say, that the superintendent of the asylum, together with an assessor, should conduct it as heretofore. It was quite obvious that was also perfectly reasonable. They could not appoint two examiners to examine *vis à voce* all the candidates in the kingdom, but two could quite easily examine all the papers. He thought the number of candidates was greater than 600—that was only, he believed, for a single examination. He thought the number of candidates who passed during the year amounted to several thousands, but, however that might be, that was comparatively a small number. He thought that 2s. 6d. was quite sufficient for the fees. Five shillings was more than those people might care to pay. Of course the argument for the increase in the fees was that they would be necessary in order to remunerate the examiners for their time and labour. That might or might not be so. On the whole, he would say that 2s. 6d. was quite enough for the fee,

and that two years was quite sufficient time for the attendants to have been in an asylum. The amended regulations, so far as the examinations were concerned, were well worthy of being adopted. (Hear, hear.)

Dr. KAY quite agreed that a period of two years was sufficient, and he also agreed with what the previous speaker said about the 2s. 6d. fee. Amongst his attendants he had a few who had gone in for the examination, but he found some difficulty in persuading them to do so as it was, without raising the fee to 5s. The principle of having two examiners for all the papers was certainly an excellent one, if it could be carried out; but, as Dr. Clapham said, he should not like to be an examiner. The principle certainly was good, for the difficulty was always to know what was the exact answer to the question which the examiner put. For instance, set a question, and then ask a colleague what is the exact answer. He probably would differ from you; and if he did, how much more would persons of that class who were examined differ in their ideas of what was the answer! The whole difficulty would be got over by having two examiners only for all the papers. He perfectly agreed with the principle, but it was in practice that he felt there would be difficulty.

Dr. NICOLSON said that he had a general notion, from what had been said on the question, as to the desirability of having two examiners; he did not see why there should be any considerable difficulty in having them if individuals could be found who would take up the work. As to the fees, before he (Dr. Nicolson) would throw in his vote against the five shillings he would be glad to know the reasons outside the question of the difficulty of finding the money on the part of the nurses—the reasons on their part why they should not be willing to pay an increased sum for the object of ultimately improving their own position in life, for there was no doubt that those nurses and attendants who went in for the examination did so with the object of getting some benefit from the certificate. He personally would be glad if it could be done for the 2s. 6d. as heretofore, but if there were sound reasons why the higher sum should be fixed, he should, in the face of that, be glad to support the suggestion made to them. On the other question, that of the three years instead of two, he felt that the two years would suffice, and he had no feeling that it would be at all necessary to extend the period, for by adding another year it would make it a very long time for them to maintain their book education; it was very largely a book education upon which the written papers had to be settled. He considered that at present two years was a sufficient period, in the absence of some cogent reasons in the proposal for extending it to three years. Regarding the number of lectures, that, he thought, would be included in the question of the three years period. "That they should attend nine out of twelve;" this, too, was a matter of detail which would stand or fall in the decision of the two or three years as it happened. "The two final examiners"—that would be a most desirable thing if they could get them.

Dr. MOULD then asked if there was any question as to the *vis à voce* examiners—the superintendent and an outside assessor.

Dr. KAY said that in certain cases the senior assistant ought to be allowed to take the position of the superintendent, for it sometimes happened that the latter was not able to take the examination. Such a case happened quite recently, and the assistant was allowed to take the part of his superintendent. The examination had been fixed to take place, when unfortunately the superintendent fell ill, and if the assistant had not been allowed to take the examination it would have been postponed—a considerable hardship to those about to be examined. The registrar took the case into his own hands, and gave the authority for this. A good senior assistant would be quite qualified to conduct the examination, and the speaker agreed with the proposal that, under certain conditions, he should be allowed to replace the superintendent.

The CHAIRMAN—Would you propose the conditions of this?

Dr. NICOLSON opposed the idea. He said that he did not agree with his friend Dr. Kay, because if they already had the power to relieve the superin-

tendent, and allow the senior medical officer to do what was required, that was all that was necessary if they could do it authoritatively. He thought if they put in the senior assistant as a possible substitute for the superintendent, the tendency would be rather for the latter to allow the senior assistant to do the work, and in that case the tone of the examination and the general status of the certificate would be liable to suffer. He thought that if there was power to sanction it under exceptional circumstances, that would meet all the requirements of the case, and all the difficulties arising from the superintendent being unfit to undertake the duty. It would be a mistake to go any further when the registrar had done it, and it was found to hold good. He considered that it would be dangerous to interfere with the present wording of the section which dealt with that particular point when they had power to do what was wanted.

Dr. HALSTED thought the appointment of two examiners, as proposed, would be very desirable, but it scarcely appeared to be practicable. He should say that if the framers of set papers could only signify what answers they wanted, it would relieve much of the difficulty. The candidates were examined upon the text-book of the Association, he thought, and in marking they went by the book, but if to a certain extent they would answer the questions, that would relieve them from sending all the papers up to headquarters to be examined.

Question—Supply the answers, or sketch them?—Yes.

The CHAIRMAN was quite sure that each superintendent knew his own nurses and their capabilities as no one else could, as each teacher knew his own students on such points as the way of expressing themselves.

Dr. KAY.—That is *riid roce*.

The CHAIRMAN continued that it might be in writing too. They would know men who attended lectures, excellent men all round, but with a bad way of expressing themselves in writing. On the other hand, he knew that a man might in examination write a good paper, and get a number of marks for facility of expression rather than actual knowledge of what he was expressing. The superintendent of an asylum would be able to give a helping hand to a deserving nurse that an outside man would not consider, simply on account of expression. He spoke from what he knew of the University of London, Victoria University, and Oxford University examinations, and certainly what did for higher examinations would do in a lower. He (the Chairman) then referred to the first question:—"Is it your opinion that it should be necessary for nurses to be in attendance at lectures for three years before examination?"

On being put to the meeting it was carried that *two* years was a sufficient length of time, opinion being against an extension to three years.

The CHAIRMAN—Of course that carries with it the number of lectures.

The CHAIRMAN then put the question:—"Whether the nurses pay 5s. in the future or 2s. 6d. as at present?" The voting of those present was in favour of 2s. 6d. being the fee.

Dr. STODDART suggested that the other question be put first:—"Whether there should be two examiners for the whole kingdom, or the present system be adhered to?"

The CHAIRMAN—The question now before you is whether there should be two examiners for each, as superintendent of asylum and outside assessor, or two gentlemen for the whole. I shall put the amendment first, "That there shall be two gentlemen for the whole of the kingdom."

Dr. GILBERT MOULD—This only applies to the papers. The *riid roce* examination is to remain as at present.

The CHAIRMAN then put the amendment (as above).

Five were in favour of *two for the whole*. Three were against.

Amendment carried.

The CHAIRMAN—Now, gentlemen, the fees. I shall put first of all that the fee shall be 5s. for each nurse, and if rejected she pays 2s. 6d. for re-examination.

Dr. KAY presumed that if there were two examiners appointed for all the papers, there would be some fees attached to it.

Five were in favour of 5s. fee. Five were against.

The CHAIRMAN gave his casting vote for 2s. 6d.

Carried that 2s. 6d. be more suitable.

THE LUNACY BILL.

Dr. MOULD (Cheadle) said that he rose with some diffidence in the matter, because it really was not one upon which a person could read a paper—only upon which one could express one's own views. In expressing their views upon it they could quietly discuss the far-reaching effect of propositions in the Bill, as they bore grave consequences to those who had the administration of asylum work and to the patients under their care. The first question came: What was it? It was the new Lunacy Bill as introduced, which had passed the first and second reading in the House of Lords, and had gone into committee. It had thus practically passed the House of Lords, and would come before the House of Commons some time next month. He understood from very high authority that if there was any very strong opposition afforded to any of those points—clauses absolutely necessary in the Bill—the Bill would be dropped. Therefore, before they offered any very strong opposition to the Bill, they should carefully consider the risk they ran. It was a great matter to offer opposition to what was proposed in excellent faith by able men in the government of asylums. The first clause of the Bill dealt with "Urgency Orders," and was a proposition to reduce the time for which they should hold good to a period of some two days less than in the previous Bill. So far as asylum assistants and officers were concerned it really did not matter very much, but in the interest of the patients it was a serious matter, because what were called urgency orders could be abused. It was necessary that they should be carried out with the least irritation to the patient and the least degradation. They knew that the certificate carried with it a degradation, and there was a very large amount of opposition for the examination at the patient's own house. The Urgency Order, as at present used, allowed a patient to come in at once, and within seven days they got another certificate, and they had fourteen days in which the patient was absolutely under the control of the asylum authorities. It was now proposed to shorten that time very considerably. So far as the working of the asylum was concerned he did not think it mattered very much, but for the patient it did matter, because an Urgency Order was given in cases of great emergency, and if they had an examination taking place within three or four days, they would be pretty certain to have the same condition of things prevailing as when the patient was admitted. If they had more than that the patient had time to recuperate, and remedy somewhat his state, as in cases he (the speaker) had known. He said emphatically that so far from helping the liberty of the subject, or, in other words, the patient, it was going exactly in the opposite direction. Clause 4 dealt with the "Suspension of Summary Reception Orders." Clause 6 related to the "Disqualification for Signing Medical Certificates."

"(6) Whereas it is expedient to extend the disqualification for signing medical certificates in support of a petition for a reception order, there shall be added at the end of sub-section 1 of Section 32 of the principal Act the words (c) 'The person who makes the reception order,' and at the end of sub-section 3 of the same section the words 'or any officer or servant in the employment of that committee, or in a licensed house under an order made on the application of or under the certificate signed by a licensee of that licensed house, or any person in the employment of such licensee.'"

They put higher penalties, and, so far as he could see, it did not require the sanction of the Public Prosecutor or judge in chambers to order prosecution. He could only say that he had always signed certificates for patients' admission to any asylum. They said, "No, you can't do that, because you are paid for it, and

you have no right to have private practice." He saw a great number of patients in his private and consultation practice, but was not to be able to sign any certificate of admission to any asylum. That, he thought, was a small matter. Clause 7 related to "particulars to be specified in case of absence for ill-health."

"(7) The manager of a hospital or of a house licensed by justices shall, within two clear days after sending or taking any patient to any place for the benefit of health under sub-section 3 of Section 55 of the principal Act, send notice to the Commissioners stating the name of the patient, and the address to which," &c.

That, the speaker considered, was very inquisitive. All particulars had to be stated; he often wanted to send a patient to an outside branch, and here it stated that they must further specify what were the reasons and other matters, almost entirely unnecessary, and a detail they should not be called upon to do.

On the next clause, he remarked that he should be very much more pleased at all times to see one Commissioner instead of two together.

"Special Inquiries with Regard to Lunatics, Clause 11.

"(11) If any person . . . fails to comply with the order, he shall be liable on summary conviction to a fine not exceeding £10, and on conviction or indictment pay a fine not exceeding £50, or an imprisonment for a term not exceeding two years."

That, he must confess, he did not quite understand, because here there were some grave penalties indeed attached to it. He did not think that any Commissioners or anybody appointed by the Lord Chancellor should have such terrible summary power as to inflict such grave penalties.

Clause 12 related to the "Reception of Boarders"—

"(12) The power under Section 222 of the principal Act of receiving a person and lodging him as a boarder may be exercised also by the manager of an asylum or hospital with the consent of two members of the visiting committee or managing committee, as the case may be, and sub-sections 1, 4, 5, and 6 of that section shall be construed accordingly.

(2) The consent required . . . to be given by two of the Commissioners may be given by one.

(3) The application under that section by the intending boarder must be made personally, or in his own handwriting.

(4) For sub-section 3 of that section shall be substituted (3) "The total number of patients and boarders in a licensed house, and all the patients absent therefrom on trial or for health, shall at no time exceed the number of patients for which the house is licensed,"—

and applied, Dr. Mould said, much more to hospitals and to the private asylums than to county asylums. He had had a very long experience, and he might say a very uncomfortable experience, in the admission of boarders. He maintained, and the Commissioners accepted it, that if you explained to a patient that he was here in an asylum voluntarily, and that he could leave at twenty-four hours' notice by giving that notice, he would be a voluntary boarder, unless certified by Visiting Commissioners. The doctor might say, "Do you understand that you are here as a voluntary patient? Do you further understand that you can give notice, and can leave after twenty-four hours?" It used to be customary to go further into the matter, and further say, "What is the reason you are here?" unless they saw on the face of it that the person was manifestly, so to speak, in need of it. If they must treat insanity in the incipient stage, Dr. Mould said, they must do it through boarders, through the voluntary system or none. They could not treat it through a certificate—that would be monstrous. There were patients who came to the hospitals, and were treated, who were undoubtedly insane, and yet one would hesitate to put in an asylum. If a person went to Dr. Clapham, and was advised to go to Cheadle or York, as the case might be, what could be a better method of treatment than that? There was no keeping this under a bushel at all. They sent at once a statement as to admission of patients, the condition in which he or she was in, and there was the book in which they

recorded the condition. So he said that a boarder was guarded just as much as a certified patient, so far as concerned being under the jurisdiction of the Commissioners of Lunacy. He spoke strongly upon the restrictions upon boarders, as that "they shall sign in their own handwriting;" to ask some poor, miserable, nervous creature to write what he was suffering from, and that he wished to put himself under care; many a poor voluntary boarder could not do it. He, however, did not see any objection whatever if they had to sign a printed paper to that effect, but that they should have to write it all in their own handwriting was too much. That would be like the Drunkards' Retreats, which were the most miserable failures in the world. These were his objections to the alteration. They would do away with the incipient treatment of insanity in its highest, best, and most skilled form.

Then there was "the number of patients received into the hospital, the management of the hospital, &c.;" he would briefly show his objections to what was proposed under those sections. As to the number of patients received, he did not see much objection to that. He did not think the Commissioners would differ much from the authorities in the hospital; it was a grandmotherly way of doing things—that the committee of the hospital and the medical officer should not be able to say and to carry out what number of patients they should put in a room, just as much as the Commissioners, who must be guided by the report of the cubical space they received in the hospital.

"Rules and regulations:"—

"(14) The Commissioners may by notice require the Committee of Management of any hospital to make such alterations in, and additions to, the rules and regulations of the hospital as the Commissioners may consider expedient, and if the Committee do not . . . the Commissioners may make a report to the Secretary of State, who may . . . determine the question as to alterations." This, he held, was an arbitrary power which should be most strenuously opposed.

"Power to require amendment of regulations of hospitals, management of hospitals, and branch establishments," Clauses 14, 15, and 16. On the question of branch establishments he would speak very feelingly. For instance, they had here (Cheadle Royal), in round numbers, accommodation for more than 200 patients—that was in the main building. Also they had 150 or more patients outside, in the houses, and in cottages, which were rented by the Asylum authorities. If those were, as it was stated, to be made "branches of the hospital," they must be the property of the hospital; or the owners of them must allow such alterations to be made in accordance with the ideas of the Commissioners which would be absolutely wrong and uncomfortable in an ordinary dwelling-place. They (Cheadle Royal) had had ordinary houses, large ones and small ones, for the last thirty years, and they had not made any alterations, except those required in ordinary social life. He felt very strongly upon the question. If it was not somewhat egotistical, he should like to read the report of the State Commission of Illinois, U.S.A., sent over to specially examine the State asylums of England, Germany, France, Sweden, &c. They had found that asylums had been started in every part of the world on the same plan, and they had received, over and over again, almost fulsome praise for what they had dared to do in Cheadle.

"At Cheadle, in England, is an institution not attracting the attention at this side of the world it deserves, an interesting experiment is in progress. Of 200 patients, 140 are in the main building, 60 in cottages."

Returning to the report, he read:—"I visited every one of these cottages. I saw no restraint upon the freedom of any patient occupying them. The doctor and his assistants visit them daily on foot, on horseback, or in carriages, just as ordinary patients are visited. . . . The result of this experiment is entirely satisfactory."

Dr. Mould pointed out that the registration of these branch establishments, and the compulsory purchase of the branch establishments would stop them

from doing what they had done so successfully for so many years. Take, for instance, a house which they rented for the small sum of £100 a year; to purchase it, what would they have to pay? Again, if they should also have to do, as it was said in the clause,—“that any patient who left should have his bed left open,”—they would have 150 beds out of 200 always vacant; 150 on leave, and 50 occupied, on the possibility of their return. The speaker went on to remark, that what he had said above would be his very strong objection to the registration of these branch establishments: in the first place, the initial cost would be enormous; and in the second place, the question of vacant beds. He also remarked on the disinclination of those from whom the houses were rented to have them termed an asylum, instancing a case in point of a lady. Next came the—

“Allowance (superannuation) to officers and servants of asylums” (Clause 20), and also for “injuries” (Clause 21).

“(20) It shall be the duty of the visiting committee of every asylum to grant superannuation allowances to their officers and servants, under Section 280 of the principal Act, and the allowance to be granted . . . shall not be less than would be granted if he were an officer or servant to whom the Poor Law Officers’ Superannuation Act, 1896, applies.”

“(21) Where any officer of an asylum is injured in the actual discharge of his duty, without his own default, and by some injury specifically attributable to the nature of his duty, the visiting committee may grant him out of the county or borough fund, as the case may be, such annual allowance, or if he dies from the injury, to his widow, or mother, and to children such allowance as the visiting committee,” &c.

That really affected the county asylums more, he remarked. There was no doubt all hospitals took a liberal view of the matter, but he should leave the question of pensions to be spoken of by those who could speak with more authority than he. He would only point out that in the clause in which the pensions were mentioned, it was proposed that no one should be allowed this, unless he had fifteen years’ service; then in sub-section further on, it was put that “where any officer of asylum is injured,” that was, if he had only been in a day, he should be allowed something. He (speaker) should say that was not necessary to be put in at all. Under the ordinary Workmen’s Compensation Act, there was no doubt that any attendant receiving an injury in the discharge of his duty would have compensation. In conclusion he said that he objected to the urgency orders, to the disqualification of signing medical orders; with regard to the reception of boarders he thought it most disastrous, and on the point of branch establishments, management, &c., he and those connected with him would most strenuously oppose what they believed to be truly unnecessary and unwarrantable interference with what had been ably and well done in all the hospitals of the kingdom with one single exception, and that a transitory one, which ought not to carry any weight.

Dr. HITCHCOCK—I think the shortening of the period of urgency orders would not be any detriment to the patient or to the superintendent whatever. As you say in your speech, the urgency cases are modified considerably before the seven days elapse. So far as one’s own practice goes, I invariably get the urgency order made permanent in three or four days. I don’t think it would make the slightest difference.

“Disqualification of signing Medical certificates.”

Dr. CLAPHAM—I think that disqualification, as applying to superintendents of private asylums, is a rather invidious matter.

The CHAIRMAN—Yes.

Dr. CLAPHAM—“The certificate must not be signed by the licensee of a licensed house, or any other person in the employment of the licensee.” That would disqualify me as superintendent from signing any medical certificate whatever. It is a distinct interference with private practice.

Dr. G. MOULD—I was told at the meeting of the South-Eastern Division that

that clause had been dropped out of the Bill this year; that it was in last year but not this.

The CHAIRMAN—It is in this year's Bill. I have got the copy here.

Dr. G. MOULD—In that case it is an unjustifiable interference with the rights of those interested, and an insult to the whole medical profession, that because a man is in the service of a licensed house, that therefore he must be disqualified from signing a medical certificate.

The CHAIRMAN (quoting)—“The manager of a hospital or of a house licensed by justices, shall within two clear days after sending or taking any patient to any place for the benefit of health. . . . send notice to the Commissioners.” (Clause 7.) Why they should be sent to the Commissioners, except as a matter of form, I can't see at all.

Dr. NICOLSON—It is only a matter of form, I suppose.

The CHAIRMAN—But supposing, as might often happen, a patient from one of the outside houses is not very well in the morning, is sent in, and towards night gets better, and is sent back again. Look at the trouble of notice being sent in on each occasion.

Dr. NICOLSON—If, for the purpose of the Act, those are part of the asylum, it would not be necessary.

The CHAIRMAN—There it comes in—all these places we rent now would have to be registered, and bought by this institution.

Dr. NICOLSON spoke of the carrying out of sub-section 16, which would alter the case.

The CHAIRMAN—That would simply ruin us. These country people will now let us their houses, but would not allow them to be called an asylum. One lady I know who takes a great interest in the patients, and lets the house, but would strongly object to its being called an asylum. The house alone would cost about £60,000. We have thirty of these houses, you know.

The CHAIRMAN then referred to “Visits to Licensed Houses.” No one, he said, would object to one Commissioner instead of two. “Special Inquiries as to Lunatics. Clause 11.” As a matter of discussion it seemed that the pains and penalties which they could inflict without a judge were very grave, but perhaps he might have misread that. For any infraction of that sort, they might have a “term of imprisonment not exceeding two years.” That was not inflicted by a judge, but by a Commissioner. He considered the gravity of the situation would come in when it was seen that the accuser would also be the judge. The accuser would be the Commissioner, and the Commissioner would be the judge.

Dr. NICOLSON supposed that they would be only acting for the State. He knew nothing about it himself.

The CHAIRMAN—It may be that after finding a *prima facie* case against him, he should be brought before a judge.

Dr. NICOLSON—They might have to indict them.

The CHAIRMAN—If they have to indict them it is a simple matter.

The CHAIRMAN then continued—“The reception of boarders,” and “The treatment of incipient insanity.” I have already spoken on these matters. On the first I say again that you would not get one in ten to write in their own handwriting what is required here.

Dr. CLAPHAM—I think this clause is merely putting the lunatic hospitals under the same conditions as private asylums are now. We can't take a boarder in the same way as a lunatic hospital can. They are obliged to “present themselves before two visiting magistrates, or obtain their consent in writing, to come in as voluntary boarders for a certain time.”

The CHAIRMAN—What can be more disastrous?

Dr. CLAPHAM—I think with Dr. Mould that this is very absurd.

The CHAIRMAN—I quite agree with this—that we receive boarders who are not of sound mind and should have to be certified, sometimes in a short period, but I maintain that we have them certified at once, if we think it is necessary.

After a pause the CHAIRMAN said—May I take it for granted that what I have said, and what Dr. Clapham has said on this, would be the sense of the meeting—that to place these grave restrictions on the treatment of incipient insanity would be hurtful? I should propose that the power which at present exists should be given to private asylums, and should not be abrogated in the case of hospitals. (Hear, hear.)

The CHAIRMAN further referred to the examination of a boarder by the Commissioners, who when he was in the asylum had to be taken outside formerly; now the Commissioners allowed the examination in the asylum itself, and it had acted successfully. There was no doubt that there were cases in which they took a boarder in when he ought to be certified. The objection held, of course, was that they had got him under their thumb.

Dr. MOULD remarked—You might as well say that the men who come to certify are so venal that they simply do what you say.

The CHAIRMAN, continuing—Could it be put to the meeting that by the proposals of Section 12 it would at once interfere very materially in the early treatment of incipient insanity in its less developed form, but when that form is developed then the boarder ought to be certified; that in the first instance we ought to be able to receive a man for a certain definite period as above.

Dr. NICOLSON—Why not put it that we regret that any further restrictions should be placed, such as that in sub-section 3? Send it up as the positive expression of the views of the meeting. Don't compare with inebriate homes or anything else.

The CHAIRMAN—Yes. I only mentioned inebriates' refuges as an instance.

The CHAIRMAN—Then we have the "Management of Hospitals and Branch Establishments," the outcome of which we shall have to find for ourselves. They do not propose to do this with regard to county asylums, managed by men at any rate no more intelligent than those in charge of hospitals. They insult the management of the hospitals, because one hospital has been directed with some stupidity.

Dr. HITCHCOCK asked to what this referred.

The CHAIRMAN said that he was speaking of the clauses relating to the rules and management of hospitals. Why should they take in the management of hospitals what they did not take in the county asylums, when they were not conducted for private gain, and conducted by the same class of men, or superior?

Dr. HITCHCOCK remarked that he had not seen a copy of the Bill before he came to the meeting, and was hardly able to express an opinion.

The CHAIRMAN—You know the serious restrictions there are now upon the management of hospitals. What I want to know is whether hospital men would wish these restrictions, which I think are very unnecessary, to be infinitely increased. I think you would not say they should be?

Dr. HITCHCOCK—No.

The CHAIRMAN—Now the Commissioners propose to take the power themselves, and impose certain pains and penalties.

Dr. HITCHCOCK—I should not express any opinion upon it. The Commissioners would take a just and proper view of their powers if this was given them, I think.

Dr. HALSTEAD—I should be sorry to see any further restrictions imposed.

The CHAIRMAN then read Clauses 20 and 21, "Relating to Pensions," given above.

Dr. NICOLSON remarked that it was only a question of a compulsory pension instead of being as at present.

Dr. KAY—The conditions of getting the pension are the same as have been existing, except that it gives you a minimum, and says it is compulsory. I think they are recognised if having been under the service of the same committee.

Dr. NICOLSON said—Dr. Newington wrote to me about a fortnight ago in a confidential sense, saying that the Parliamentary Bills Committee seemed to be

in a difficulty with regard to Section 18, which has reference to the accommodation originally given on a plan for any asylum, and approved by the Secretary of State, that with reference to such accommodation it shall not be appropriated or used for other purposes than those shown in the plan without the approval of the Secretary of State. There was a feeling amongst the county asylum officers and the representatives on the Committee that this rather put them out of count in making those necessary alterations in the location of the inmates of asylums that happen to be necessary from time to time, arising from painting and cleaning, over-crowding, or from any other temporary difficulty which came up for them to deal with. Their feeling was that it was not a desirable section for them to put in. That was the first one. I went up to Mr. Mackenzie about this, and he said that they had perfectly open minds upon the matter, and the Lord Chancellor would only be too glad to receive any recommendations from the Parliamentary Bills Committee, and that they themselves were not satisfied as to the desirability of this particular section. The other section upon which they were not agreed was Section 23, that having reference to the payment of pauper inmates for work done by them. That opens out a very big question, and I told Mr. Mackenzie what appeared to me to be the difficulties, although, so far as I saw from experience as Superintendent of Broadmoor in the old days, it was a most excellent thing, for we had in Broadmoor a great many inmates who could not by reason of their recovery be kept in county asylums. We had to encourage them to work by giving them some small payment, the work being for their own good, as well as an advantage to the State, and doing away with the necessity of paying so many artisans and labourers about the asylum. This point did not hold fully with regard to the inmates of pauper asylums, because when they recovered they got rid of them. He (Mr. Mackenzie) said he himself was not clear as to the desirability of this. Speaking to me personally, he said he was not assured that they were desirable things to have settled on statutory authority as at present. I afterwards went to the Home Office to speak to them about the special question, and I found the whole matter rather misrepresented there, and they had come to the conclusion that the medical superintendents were not anxious to have this section. I assured them I was perfectly satisfied that the medical officers were anxious to have the compulsory retirement scheme, although in a few individual instances they would prefer to take the chance of their own committee for the time being, some knowing that they would be well treated, and having served for a long time, but the feeling of the Association was clearly in favour of compulsory superannuation allowance and pensions.

The CHAIRMAN.—As proposed in this new Bill ?

Dr. NICOLSON.—Yes, as proposed. Then I saw Mr. Digby (?), and I said I should like to write to Dr. Newington, and this morning I got from him this sketched-out scheme, rather too long to read perhaps. He wants this division to be made acquainted with the present position of the work done by the Parliamentary Bills Committee, and assuring the Home Office that the feeling was entirely in favour of compulsory pensions. He wants the meeting here to clearly understand the points of the work they have been doing with regard to it.

Dr. NICOLSON here read the statement mentioned.

He then continued—I told them the officers would be only too glad to have their pension assured. If it was not assured it was not to be expected that the right stamp of man would go in for the work, if he did not see his future was to be considered. That seemed to be an idea which caught on with the Under Secretary. I assured them that if the compulsory pension was granted it would be the means of assuring that a good class of men would join the asylum service. If this meeting endorses that statement it would be a help to the Parliamentary Bills Committee in urging it forward and sending in their memorandum, strengthening their hands.

Dr. KAY—Is that a statement to the Home Secretary ?

Dr. NICOLSON—That is a statement which will go before the Home Secretary,

and if it will be approved by this meeting it can be sent to him with that approval.

The CHAIRMAN—You have heard the *statement* sent to Dr. Nicolson by Dr. Newington, the secretary of the Parliamentary Bills Committee? Are you of opinion that it *should be sent with approval*?

Agreed to unanimously.

The CHAIRMAN—Could you not add a rider to it that hospitals should be included?

Dr. NICOLSON—These points the Bills Committee think cannot be taken up now. If you write to them after, it might do good. They are only too glad to know the opinion of persons interested.

The CHAIRMAN—Then they could not take this on now?

Dr. NICOLSON—I don't know how far the Committee have got by this.

Dr. HITCHCOCK—Can we add anything to the effect that if possible some conditions should be added, so as to make the present permissive clauses with reference to hospitals compulsory?

After some discussion the Chairman suggested that this meeting send a request to the Parliamentary Bills Committee to add to their request on Section 20, that the hospitals should be treated in the same manner as the public asylums, so far as pensions and allowances for servants are concerned.

Dr. NICOLSON—That would be all right so far as it goes, but I don't think they would be on the same footing as regards payment, &c.

The CHAIRMAN—I think you will know that there are hospitals which are generous, as there are County Councils which are generous, and hospitals which are very ungenerous.

Dr. NICOLSON—The question is, whether the request of this particular thing might not do more risk of harm than if you waited till after this was accepted.

The CHAIRMAN—Then you would have to wait for another Lunacy Act.

Dr. NICOLSON—Oh no, not exactly.

The CHAIRMAN—This will come before the House of Commons as a proposition in any case. The question is whether it would not come with better force if it had been before the Parliamentary Committee.

Dr. NICOLSON—But you might damn it altogether. It may be desirable, but I think it would be a pity to tack it on. The compulsory idea is the first idea; if we could get that through, a good many things might follow.

The CHAIRMAN—Will you propose that it is desirable that hospital officers and servants should be treated in the same way with regard to pensions as is proposed under Section 20 of the new Act? We can send it to the Parliamentary Committee to do what they like with it, and we can send it up by ourselves.

Dr. NICOLSON—I don't see the meeting would do any harm in asking the Parliamentary Committee to deal with it, but not to ask that it be tacked on.

The CHAIRMAN again read his suggested proposition. Every hospital, he said, had pensioned its superintendent on retirement, and they only asked that it should be a necessity, not simply a rule.

Dr. KAY—It is a recognised thing in the West Riding of Yorkshire that all officials engaged now sign a paper on the distinct understanding that they receive no pensions.

Dr. NICOLSON—At Middlesbrough, so far as I understand, at one asylum they undertake that there should be no pensions.

Dr. KAY—In the West Riding all officers accept office on the distinct understanding that there is no pension.

The CHAIRMAN (in conclusion)—Perhaps this is too debatable a subject to continue. (Hear, hear.)

Regarding the clause respecting the "Master in Lunacy," the Chairman said he thought that every one would approve most strongly of all that was there proposed to be done.

This concluded the meeting.

MEETING OF THE IRISH DIVISION.

Members present at the meeting on April 12, 1898: William Graham, George R. Lawless, M. T. Nolan, E. L. Fleury, John Mills, Samuel Graham, G. J. West, J. A. Oakshott, Daniel F. Rambaut, J. M. Redington, R. Lockhart Donaldson, Bagenal C. Harvey, W. S. Gordon, H. M. Cullinan, J. A. C. Donelan, Conolly Norman, Dr. Charles Hetherington in the Chair; Arthur Finigan, Oscar Woods, G. J. Rivington.

After considerable discussion the following resolutions were passed:

LOCAL GOVERNMENT (IRELAND) BILL, 1898.

Resolved—That we, the members of this Association, protest in the strongest manner against the transfer of lunatics and lunacy administration to the jurisdiction of the Local Government Board, or any legislation that would associate insanity with voluntary pauperism; and are further of opinion that such important matters as the care and treatment of the insane should be completely independent of any other Board dealing with public charities. We consider that in any legislative changes the Lunacy Laws of this country should be assimilated to those in England, where a separate body exists for the supervision and protection of the insane; or adopt the findings and recommendations of the committee appointed by the Lord Lieutenant on Lunacy administration, known as the Mitchell Report of 1891.

We consider the existing and beneficial jurisdiction of the Lord Chancellor in lunacy should be preserved.

We recommend that every resident medical superintendent appointed to an asylum should have served for not less than five years as a medical officer or assistant medical officer in an asylum for the treatment of the insane, and that the power of appointment to the office of resident medical superintendent shall be retained, as at present, by the Lord Lieutenant of Ireland for the period of five years after the passing of this Act.

We deem it right that the existing resident medical superintendents of district asylums, having been appointed by the Lord Lieutenant, shall not be removable from the office without the consent of the Lord Lieutenant.

We recommend that the Lord Lieutenant have power to direct that assistant medical officers shall be examined and their qualifications certified by such persons as his Excellency may direct.

We request that the following clauses in the Lunacy Bill now before the House of Lords may be added to the Local Government (Ireland) Bill. It shall be the duty of the visiting committee of every asylum to grant superannuation allowances to their servants and officers under Pauper Lunatic Asylum (Ireland) (Superannuation) Act, 1890, and the allowance to be granted to an officer or servant under that section shall not be less than would be granted if he were an officer or servant to whom Poor Law Officers Superannuation Act, 1896, applies.

Extract from the Report of the Parliamentary Bills Committee of the Medico-Psychological Association.

The Committee support the recommendation of the Irish Asylum Medical Officers' Association, that a resident medical superintendent should have at least five years' experience as an assistant medical officer in an asylum.

The Committee also endorse the protest of the Irish Asylum Medical Officers' Association, against the proposition to transfer lunacy administration from the Lord Lieutenant to the Local Government Board, being firmly of the opinion that such administration should be independent; and the committee fully endorse the findings of the committee appointed by the Lord Lieutenant of Ireland on lunacy administration in the year 1891. "The Committee are of the opinion that if any change is made in the provisions for giving pensions and allowances in case of injury to asylum officers in Ireland, the provisions of the

law now relating to the granting of pensions and similar allowances to asylum officers in England, as proposed to be amended by the Bill now before Parliament, should be applied.

SIR EDMUND DU CANE ON CRIMINAL TREATMENT.

In the May number of the *Nineteenth Century* Sir Edmund du Cane's article on the Prisons Bill and Progress in Criminal Treatment will be read with much interest. He shows that, under the proposals of the Bill, a complete change of fundamental principles will be possible at the will of the Secretary of State.

The Act of 1865 was designed to remedy pre-existing evils, and specially to provide for separate treatment. This is in all countries acknowledged to be the best system, and it was attained in England after much discussion and great expense. As crime has so markedly decreased, it may be inferred that some credit is due to the Prisons Acts.

Sir Edmund du Cane insists on the necessity for uniformity of regulations, and doubts if there will be found a more efficacious means of reform than punishment for misdeeds. He is strongly of opinion that reform requires time, and states that the average period of detention of boys in reformatories is necessarily some three years, while some of them turn out to be the most incorrigible convicts.

If, as many now think, the reformatory principle should have fair trial, it will be requisite to change the criminal law, so that longer sentences may be inflicted. Sir Edmund du Cane thinks that the worst cases would not really be detained longer than they are under the present system of short sentences. We are glad to note that he states that reformatory and industrial schools are probably chief among the causes of the decrease of crime, and that he advocates a special prison for young criminals, as the most mischievous years are from sixteen to twenty-two.

THE REPORT OF THE DEPARTMENTAL COMMITTEE ON DEFECTIVE AND EPILEPTIC CHILDREN.

The appointment of the Commission in December, 1896, the Report tells us, arose from the application, of the London School Board to the Education Department, for increased grants in aid of the special classes for defective children which had been formed on the recommendation of the Royal Commission on the Blind, the Deaf and Dumb, &c.

The Committee reports that it has visited all the special classes with the exception of Nottingham, also the Darent Schools for Imbecile Children and the Epileptic Colony at Chalfont. Witnesses connected with these institutions have been examined, as well as medical men of special experience, in addition to Mr. Knollys, of the Local Government Board; Miss Cooper, Secretary to the Association for Promoting the Welfare of the Feeble-minded; Mr. Loch, Sir Douglas Galton, and others. Much written information from cognate sources has been also received and considered. The Committee, indeed, seems to have neglected no source of information, and the voluminous appendix to the Report, compiled from the evidence given and information received, is a mine of instruction for all interested in arriving at the best methods of treating these classes.

"Feeble-minded" the Committee interprets as "excluding idiots and imbeciles," and as denoting "only those children who cannot be properly taught in ordinary elementary schools by ordinary methods." The term is used throughout the Report, having been employed in the referendum to the Committee, who, however, recommend that in dealing with these children the term "feeble-minded" shall not be used, but that they shall be designated as "special classes."

The *recognition* of these children the Committee insists must be based on the

history, habits, conduct, and power of learning, as well as on the co-existence of malformations and peculiarities of function; but it recognises the fact that they are physically defective (suffering, *e.g.*, from low nutrition, neurosis, struma, epilepsy, syphilis, &c.), and that their "proper treatment in school depends to a great extent upon medical considerations."

The *proportion* of children requiring special class treatment the Report estimates at 1 per cent.

The physically defective children, unable to attend school from that reason, the Committee estimates at from 1 to 2 per thousand, but has no evidence of the proportion of these who would be capable of attending school if the means of conveyance were provided.

The feeble-minded, the Report points out, are at present under the same law as the normal in regard to school attendance, and there is no direct power to enforce attendance at a special class. Whether this can be accomplished indirectly, by first refusing admission to the ordinary school and then prosecuting for non-attendance, has yet to be tested.

The *powers of guardians* in regard to the feeble-minded are probably the same, the Committee considers, as those exercised in relation to the blind and deaf under 25 and 26 Vict., c. 43, and are therefore of very wide application.

The *initial age* at which the "feeble-minded" are to be dealt with the Committee fixes at seven years, and considers that under that age the ordinary infant school, with its kindergarten exercises, is sufficient.

The *discrimination* of the special classes the Committee recommends should be provided for by the appointment of a medical officer, who should examine and give a certificate (in all cases of non-attendance on the ground of physical or mental defect) as to whether the child is capable of being educated in special classes or is not (and consequently imbecile), and suggests that in the latter case this certificate might be used as a basis of admission to the Imbecile Schools.

Admission to the special classes, it is suggested, should be the result of an examination, at which there should be present the child's past teacher (who presents a written report in scheduled form), the special class teacher, a parent if possible, her Majesty's Inspector, and the Medical Officer of the school authority. The medical officer, after receiving a prescribed form (filled up by the teacher who presents the child), and conferring with the two teachers and the inspector, should make a recommendation to the school authority. The recommendation should state that the child is not imbecile, but from physical defect (which should be stated) or mental defect, is incapable of deriving benefit from the instruction in ordinary schools, but might be benefited by instruction in the special classes. If rejected, the medical officer should state the reason of his rejection. Appeal against the decision should be to the Education Department, who should have at their service a medical adviser. The Committee has with great care drawn up recommendations for the records to be made; of the examination of the special case, of the family history, and of the progress in the special class; it advises a yearly medical examination of such classes, or, if necessary, individual examinations, which should be recorded, and that the teacher should be guided by the medical advice in dealing with the child.

Retention in the class until the age of fourteen is recommended, with power to retain until sixteen on the advice of the medical officer, and it is suggested that the school authority should have a discretionary power of compelling attendance up to that age. The mixture of the sexes in the special class is not objected to if suitable provision is made for those over fourteen years.

The *size* of the special class the Report advises should be limited to twenty (on the roll) for each teacher, except where there are three or more teachers, when the third, fourth, &c., may have thirty.

The *special training* of teachers is rightly insisted on, and a sketch given of a suitable course. No system of training being yet available, the Committee recommends that certificated teachers should only be recognised as head teachers

of a special class after two months' experience in a class approved by the Department.

The Committee makes careful recommendations in regard to school hours, time-tables, subjects of instruction, elementary manual instruction, physical exercises and games.

Corporal punishment the Committee dismisses with the brief comment that it requires great care in this class of children.

Special classes, the Report considers, would almost certainly be required in towns of over 20,000, and would not be necessary in those under 10,000, and prefers the concentration of two or three classes, where practicable, to isolated classes.

The constitution of school authorities, the structure, &c., of schools, their inspection and returns to the Educational Department, are all provided for, as well as the assistance to be derived from voluntary agencies.

The "*conveyance or guidance*" to the special classes in cases where it is needed, and the "*boarding out*" near special classes of children whose homes are not within reach of them, involve questions of expenditure in which additional powers are recommended.

"*Physically defective*" children, who cannot benefit by the ordinary schools, are recommended by the Report for admission to the special class, while those who are unable to attend any class are regarded as affording a fair field for voluntary assistance. The "blind and deaf" feeble-minded should have special arrangements made, the Committee think, in institutions for these classes. Epileptic children of normal intellect are recommended to be left in ordinary schools, whose teachers should have some general instructions in regard to them; the "feeble-minded" epileptic should attend the special class, whilst severe epilepsy should be treated in homes provided for that purpose, in regard to which full details are given.

The Report concludes with a sketch of the legislation required to carry out the various recommendations, and insists on the importance of their becoming law at the earliest possible date.

THE BOARDING OUT OF HARMLESS LUNATICS.

A Conference was held at Larbert, the 17th February last, in connection with the question of boarding out of harmless lunatics, the subject having been brought to the front by the District Lunacy Board with the object, if possible, of rendering further additions to the asylum unnecessary at the present time. Major Dobbie, Chairman of the Stirling Lunacy Board, presided. Representatives were present from each of the counties and burghs in the Stirling Lunacy District, and also representatives from nearly all the parishes in the district—about fifty in number.

The CHAIRMAN, in opening the proceedings, referred to the fact that since the asylum had come under the control of the County Councils a very large sum of money had been expended in extending the buildings, the sum borrowed up to the present being close upon £74,000. The extraordinary rise in the number of annual admissions was again making it necessary to consider the question of additional accommodation.

Dr. MACPHERSON stated that although the increase in the numbers of the insane in the district had within recent years attracted a good deal of attention, yet the increase had been steadily going on all along, and had only now reached such proportions as to make it necessary to deal with it in as practical a manner as possible. While this increase was in one sense regrettable, in quite another sense it might be regarded as representing an increased amount of prosperity within the four counties which formed the district, as the actual increase of insanity depended entirely upon an increasing population, and consequently upon an increase in financial and industrial prosperity.

The proper functions of an asylum, he considered, were to treat new and recent cases of insanity with a view to their recovery, or to the alleviation of their malady, to nurse and care for the weak and helpless insane, and, while rendering their existence as endurable as possible, to confine those persons who, through no fault of their own, were obnoxious to their fellow-men, and unfit to live in their society; and that the chronic, harmless, and inoffensive lunatic was therefore out of place in the costly and complicated organisation of a modern asylum, because he did not require asylum treatment, because it was in his case an unnecessary extravagance, and because he would be happier under other and more natural conditions of life.

Scotland, he said, stood in the very first rank of civilised nations so far as the care and the treatment of the insane were concerned; its asylums were among the best in the world; the public attitude towards the insane was one of solicitude and almost unbounded generosity, and the administration of the lunacy system was characterised by a minute attention to detail and great discrimination in the classifying of the patients. There were in Scotland on the 1st of January, 1897, 12,221 pauper lunatics, of which number 2667, or 22 per cent., were placed in private dwellings throughout the country.

Referring to the Scottish Lunacy Blue-book for 1897, Dr. Macpherson observed that the assessments for lunacy purposes on the landward parts of the counties and burghs of each district for the year ending 15th May, 1896, amounted to £58,995, and that the number of patients in district asylums at 1st January, 1897, was 4673, thus giving an expenditure per patient for land, building, and up-keep of building of £12 12s. 6d. This may be taken as representing the sum which the ratepayers have to pay annually for lodging each patient in this or any other district asylum, and this will be found to be about the average expenditure over a number of years.

Taking the average maintenance account, as it was last year in the district asylums of Scotland, at £23 3s. 8d. per patient, and adding to that the average providing account of £12 12s. 6d. per patient, each lunatic in a Scottish district asylum at present cost the country £35 14s. 2d. per annum. The great financial argument in favour of boarding out was that it cost nothing to the ratepayers for buildings, these being already provided, whereby, at the present rate for the provision of building, as had already been mentioned, each patient boarded out was an absolute saving to the ratepayers of from £12 to £13 per annum. Not only so, but the maintenance of the patients cost less in private dwellings than in asylums. The average cost in the district asylums of Scotland for the year ending 15th May, 1896, was £23 3s. 8d. per patient, of which the Imperial Government paid the proportion of £11 1s. per patient, so that the actual cost to the ratepayers was £12 2s. 8d. per patient. The average cost of boarding out for the same year was £16 12s. 11d.; but this sum was somewhat misleading, as it included imbeciles living with relatives, who only received a nominal sum for their keep, as low as 6d. per week in some cases. The real average cost of boarding out pauper lunatics with *strangers* over all Scotland was £22 per annum. Of this sum the Imperial Government last year paid the proportion of £11 1s., leaving a balance in favour of boarding out, as against asylum treatment, of £1 3s. 8d. per patient. In short, to sum up the whole financial argument upon the basis of the Scottish average already given, each patient kept in an asylum cost the country £13 16s. 2d. more than a patient boarded out.

With regard to the moral and social objections to the system, Dr. Macpherson thought them more sentimental and imaginary than real, his own experience leading him to consider the general condemnation of the system to be unjust, although at the same time he did not deny that it was not without blemishes, like any other human institution. He also quoted from the experience of the Inspectors of Poor for the Barony and Edinburgh parishes, who represented the care of over 500 boarded-out patients, and who averred that in their long and extensive experience no authentic case of ill-usage had ever come under their notice.

In conclusion, what was wanted was to get the parish councils in the district to admit the principle of placing chronic harmless lunatics in private dwellings. Once the principle was admitted, the ways and means of working and perfecting the system could be afterwards considered. The continued detention, moreover, in asylums of patients for whom asylum treatment was unnecessary was contrary to the spirit of the Lunacy Act (Section 17, 25 & 26 Vict., cap. 54).

A large number of the representatives present afterwards expressed their opinions on the question, the great majority of the speakers favouring the principle of boarding out.

THE CLAUSE FOR PROVIDING TEMPORARY CARE FOR INCIPIENT MENTAL DISEASE.

The joint committee of the British Medical and Medico-Psychological Associations have drafted the following clause and certificate :

DRAFT CLAUSE FOR PROVIDING TEMPORARY CARE.

(1) Where a medical practitioner certifies that a person is suffering from mental disease, but that the disease is not confirmed, and that it is expedient, with a view to his recovery, that the patient should be placed under the care of the person whose name and address are stated in the certificate, for the period also therein stated not exceeding six months, then during that period the provisions of Section 315 of the Lunacy Act, 1890, shall not apply.

(2) A medical practitioner who signs such certificate shall within three days after signing the same send a copy thereof to the Commissioners, and it shall be lawful for any Commissioner to visit the patient. The person under whose care the patient is placed shall not be the person who signs the certificate.

(3) The person who receives a patient under such certificate shall within ten days after the expiration of the period mentioned in the certificate, or if he ceases to have the care of the patient under the certificate at an earlier date, then within ten days after such earlier date send a report to the Commissioners, stating whether the patient recovered, and if not in what manner he was dealt with when the person making the report ceased to have the care of him under the certificate.

CERTIFICATE.

I [*insert full name and address*], a duly registered medical practitioner, certify that [*insert name, address, and description of the patient*] is afflicted [*state the nature of the disease*], but that the disease is not confirmed, and that I consider that it is expedient with a view to his [*or her*] recovery that he [*or she*] should be placed under the care of [*insert full name and description*] at [*insert full address of the place where the patient is to be received*] for a temporary residence for a period of [*specify a period not exceeding six months*] from the day of 18 .

Dated

Signed

RELIEVING OFFICERS AND ALLEGED LUNATICS.

THE HACKNEY CASE IN THE COURT OF APPEAL.

The case of *Harward v. the Guardians of the Hackney Union* on March 22nd came before the Court of Appeal, composed of Lords Justices A. L. Smith, Chitty, and Collins, on the application of the defendant, J. B. Frost, for judgment or new trial, on the appeal from the verdict and judgment, dated January 22nd last, at a trial before Mr. Justice Hawkins and a special jury in the Queen's Bench Division. The action was brought by Mr. Theodore Bulmer Harward, who formerly practised as a dentist, to recover damages from the Guardians of the

Poor of the Hackney Union, and their general relieving officer, Julius Bernard Frost, for alleged false imprisonment in having forcibly removed him from his house to the workhouse infirmary, and having detained him there as a dangerous lunatic. The defendants pleaded that the steps taken with regard to the removal of the plaintiff were taken in good faith, and in discharge of their duties under the Lunacy Act, 1890. It was alleged that on October 14th, 1896, the plaintiff, who was then living with his wife in Hackney, quarrelled with her, and took down a picture from the wall and tore it up. The wife, who was very angry, said, "You are mad," and went out of the house and complained to the police, who referred her to Mr. Fenton, relieving officer of the district. It was said that she told Mr. Fenton that her husband was out of his mind, that he talked of committing suicide, and had threatened to kill her and the children. Fenton then sent for the defendant Frost, the relieving officer, and appointed under the Lunacy Act of 1891 to deal with lunacy cases. Section 20 of the Lunacy Act of 1890 gives authority to the relieving officer to remove dangerous lunatics to the workhouse, but provides that no such person shall be detained for more than three days, and "before the expiration of that time the constable, relieving officer, or overseer shall take such proceedings with regard to the alleged lunatic as are required by this Act." The plaintiff's case was that on October 14th, while he was sitting at supper, two men came to his house and forcibly removed him to the workhouse infirmary, where he was confined in the padded room, and made to put on workhouse clothing. He was detained at the workhouse till October 19th, when he was taken before a magistrate, who, on hearing the medical evidence, at once discharged him. The plaintiff's wife, when she was called as a witness, denied that she told Fenton that her husband was a lunatic, but that he was ill. She admitted, however, in cross-examination, that she told Fenton that her husband had threatened to commit suicide and to "do" for her and the children. Mr. Justice Hawkins held that there was no case against the guardians, and judgment was entered in their favour. The jury, however, found a verdict for the plaintiff for £25, as against Frost, on the ground that he did not exercise reasonable care to satisfy himself that the plaintiff was a dangerous lunatic, but they could not agree as to whether the defendant was "honestly satisfied" as to the truth of the information which he acted upon. Mr. Justice Hawkins, upon this finding of the jury, entered judgment for the plaintiff, but stayed execution until the parties had gone to the Court of Appeal.

After hearing arguments Lord Justice Smith, in giving judgment, said that in his opinion there was ample evidence communicated to Frost to lead him to the conclusion that the plaintiff was deemed to be a lunatic, or alleged to be a lunatic, at the time in question. He thought that the verdict of the jury must be set aside, and judgment entered for the defendant. The other Lords Justices concurred, and the appeal was accordingly allowed with costs.

THE CAIRO ASYLUM.

We are glad to observe, from Lord Cromer's report for last year, that Dr. Warnock's services will be retained in the interests of the insane at Cairo. The temporary appointment has been made permanent. A number of patients are now brought by their friends for treatment, whereas they were formerly brought by the police. Lord Cromer refers in detail to the difficulty of providing accommodation for the large number of patients requiring asylum care, and the financial burden imposed upon the State. He says that, although local taxation has been willingly borne, the purposes for which the money was raised were such as could be readily appreciated—*e. g.* the construction of roads. He doubts if this appreciation would extend to taxation for such objects as sanitation and the care of the insane.

Lord Cromer's report is a document reflecting the highest honour on the men

who have worked such a marvellous change in Egypt. Every department is emerging from the chaos which so long reigned supreme.

ASYLUM WORKERS' ASSOCIATION.

The Annual Meeting of this Association was held on the 28th March under the presidency of Sir James Crichton-Browne, M.D., LL.D., F.R.S., Lord Chancellor's Visitor. The audience, including (amongst others) Mrs. Creighton, wife of the Bishop of London, Mrs. Langdon-Down, Miss Honnor Morten, L.S.B., Dr. David Nicolson, C.B. (Lord Chancellor's Visitor), Mr. Bagot, Commissioner in Lunacy, Mr. F. D. Mocatta, the Rev. H. Hawkins, Drs. Alexander, Bower, Cassidy, Chambers, Elkins, Haslett, Gardiner Hill, P. Langdon-Down, Neil, Stilwell, Savage, and Outterson Wood. Miss Crouchley, Miss Warren, and other asylum matrons were present.

The President gave an eloquent and interesting address on the objects of the Association, especially dwelling on the misrepresentations recently made in regard to the training of asylum nurses.

The report of the Committee showed that the membership of the Association had risen from 2013 to 2534 during the past year (1897), and stated that an employment bureau (for male attendants only), under the auspices of the Association, had been established at 10, Thayer Street, Manchester Square, W.

The accounts showed a satisfactory balance at the end of the year.

MALE NURSES' (TEMPERANCE) CO-OPERATION.

The annual report of this co-operative society shows that it has continued to thrive during the present year.

The staff, it is reported, has considerably increased during the year, yet the average earnings per man, after paying all expenses, have been a little over £102.

The Sick Fund established last year has been drawn on only to the extent of 8½d. per member.

The report affirms that the tendency to employ male nurses for male cases is increasing, and that applications are being received from provincial hospitals for young men with asylum experience for employment in the male wards and about the hospital.

The co-operative principle is steadily growing in many directions, and it is satisfactory to note the success of it in this particular form.

THE UNFORTUNATE MIDDLE CLASSES.*

"Passing reference was made at the last meeting of the City Council to a deficiency in our lunatic asylum system which is deserving of much more attention than it has hitherto received. This is the provision of accommodation for lunatics of the middle or lower middle class, to form a connecting link between the existing pauper institutions and the private retreats where the fees are such as can only be paid by people in comparatively affluent circumstances. We are wont to indulge, not without reason, in a good deal of self-satisfaction at the reforms which the present century has wrought in the treatment of the insane. A hundred years ago the attitude of the community towards those of its members who were mentally infirm was one of wanton savagery; to-day local authorities are held responsible by the State for the proper care and efficient medical treatment of all such lunatics as cannot be satisfactorily provided for by their friends.

* From the *Birmingham Daily Post*, May 12th, 1898.

No one who has been through one of our public lunatic asylums, and noted the liberal and enlightened lines on which it is conducted, can doubt the sincerity of the change which has come over the national sentiment on this subject. It is the more surprising, therefore, that no general and systematic attempt has been made to meet the case of those who, being far removed from the pauper class in habit and instinct, can only find refuge in a pauper asylum should mental affliction overtake them. This is really a practical question for a middle-class community like that of Birmingham to address itself to. There are fourteen registered hospitals—that is to say, partially endowed private asylums—up and down the country, but Birmingham does not possess one. Nor is it an easy matter to obtain the benefits of these institutions for what seem the most worthy cases. There is a strong feeling that some of them are more concerned about adding to their wealth and magnificence by catering for profitable patients than they are in using their endowments in a manner more consistent with the compassionate intentions in which they originated. Thus these “registered hospitals,” as they are officially termed, do not by any means fill the gap between the public and the private asylums. It is true that any accommodation in our public asylums which is not needed for pauper cases may be utilised for paying patients. The law gives this power, and in times gone by advantage has been taken of it in Birmingham. But in recent experience it has been found that the claims on the available accommodation are so heavy that there is practically no chance of gaining admission save as a pauper. Strange as it seems, private patients at Winsor Green Asylum have actually had to be made paupers in order to qualify for continued treatment in the institution. Thus by a singular perversity the community in its corporate capacity taxes itself in order to thrust an abhorrent piece of patronage on some of its stricken members. Birmingham produces about four hundred lunatics annually, in addition to those who are treated in private establishments. It is computed that of these four hundred at least an eighth are in circumstances which would enable payment of something over and above the pauper rate. Particular cases might be mentioned in which people with incomes of over £100 a year have been humiliated to the position of paupers by the present anomalous arrangement. Imagine the case of a small tradesman, a well-to-do artisan, a clerk, or even a not too flourishing professional man, who loses his reason. There is, speaking practically, no alternative but to go through the formality of pauperising him, and consigning him to an institution erected and partly maintained at the public expense.

“The Poor Law authorities require a certain payment towards the cost of maintenance; but they may not accept more than the bare amount of that cost—fixed by the standard at 9s. per week, *plus* collector's commission of 10 per cent.—and by no ingenuity can the pauper brand be averted. The same thing happens should the man's wife or other relative become insane. While fulfilling its proper obligation to lunatics of the pauper class, is it not the plain duty of the community to give heed to the claims of those who value their independence, and would sacrifice a good deal rather than forfeit it? It is likewise the policy of the community, for more reasons than one, to give this latter class some alternative to a pauper asylum. There is good reason to believe that in many cases the friends of people seized with insanity are so reluctant to submit to what they regard as the indignity of accepting Poor Law relief that the administration of proper treatment to the unfortunate patient is delayed to the last possible moment, and the chances of an early or ultimate restoration are gravely imperilled. It is certainly not in the interests of society that this should continue.”

The article goes on to sketch a scheme for the provision of the accommodation required in connection with the projected new asylum at Hollymoor, and we have been informed that the weekly charges will be lower than those of any existing county asylum provided for non-pauper cases.

CORRESPONDENCE.

The following letter has been laid before the Council of the Medico-Psychological Association:

Hospital for Insane, Ararat, Victoria,
18th October, 1897.

Sir,—As Honorary Secretary of the Annual Conference of the Medical Staff of the Department of Hospitals for Insane, Victoria, I am empowered to address your Council.

For the better working medically of our various hospitals, of which there are six in the colony under Government, administered by an inspector of asylums, with the Under Secretary as permanent head of the Department under ministerial (Chief Secretary) control, the medical staff as a whole, three years ago, formed an association with a view to the exchange of medical opinions, and in hopes of arriving at some unity in the matter of higher administration and treatment, and reporting to the Minister the resolutions arrived at. In 1895 and 1896 matters administrative were largely dealt with, including such subjects as nursing lectures and examinations, uniform for nurses and attendants, the grading of the work of the nursing staff, the appointing of the nursing staff, &c.; in all of which matters medical superintendents laboured under disabilities, since all ranks of our department are under a Public Service Board, who, by order of Governor in Council, make all appointments and deal with all dismissals and punishments over five pounds (£5). Suffice it to say that without permission, as an officer of the Government, I cannot further particularise; however, many of our wants on behalf of the patients in the above particulars have been well ventilated, and, in part, acted upon. The probationary nursing and attendant staff must now attend lectures and pass examinations before approval of permanent appointment. The attendance on a senior course of lectures and examinations for certificate is still a matter of option unfortunately, though we hope to be permitted, by an arrangement of regrading the work and making the pay coincide, to largely overcome this defect without in any way bearing harshly on such members of the staff as may be old in the service and soon retiring, and to this matter we addressed ourselves at our third series of meetings this month—we have three days each year in October,—and passed resolutions urging (1) that in the interests of treatment and discipline uniforms be worn and provided at once after passing the probationary examination, which, with a small additional salary, would induce a better stamp of applicant to present him- or herself, and from whom more is now expected; (2) that the salaries of the junior medical officers are not sufficient to induce good men to join the service and remain with us (the superintendents magnanimously standing back for the present); and (3) that as superintendents are of opinion that existing arrangements do not give as much benefit to the patients as those existing elsewhere, they would beg to urge suggestions in order that the Victorian asylums may not be behind the advances of other countries.

These matters were placed before the Under Secretary by the Inspector of Asylums and a deputation from the Medical Superintendents, and well received, with promises to urge their recommendations on the Minister and the Public Service Board;—the Minister I may say is at present our very kind friend, but we are just over a General Election, and benefits to the attendants have not always gone hand in hand with benefits to the patients, and in this lies the crux of the whole matter. But to return to the meeting. This year we had papers from four asylums on “The Effects of Insanity on Bodily Disease,” “Delusions, &c., in their Relation to Complaints,” “Folie à Deux,” and “A Case of Traumatic Insanity relieved by Trephining.”

The final step of the meeting was one of distinct advance, the Inspector of Asylums, Dr. M'Creery, stating that on a recent visit to New South Wales, having talked over the matter of our meetings with Dr. Manning, the

Inspector there, he had now to propose—"That Dr. Norton Manning and the Medical Staff of the New South Wales Lunacy Department be invited to join us in forming a Medico-Psychological Association, the meetings to be held in each colony alternately, and that the first meeting be held in Melbourne, Victoria, in October of next year," and that as Hon. Secretary I be asked to communicate with the Medico-Psychological Association of Great Britain in order to ascertain how far, in the event of New South Wales joining us, it would be possible for us to be affiliated or become a branch of that Association; and I would ask your kind interest in this matter on behalf of alienists at the antipodes in time for me to prepare a statement for our next conference.

I would like to mention that in the event of New South Wales joining us we would then approach South Australia, Queensland, Tasmania, Western Australia, and New Zealand, the other colonies of Australasia, and that at the annual meetings each colony would have its representatives from superintendents and medical officers—a system we adopted from the first,—and that nothing of individual asylum administrative work would arise unless of general interest, this being the more to be desired since each colony has its own governmental methods.

The details, however, are still to be worked out when we hear from you.

At the moment I am sorry I have not material at hand to tabulate for you the extent of lunacy work in Australasia, but in New South Wales there are six large asylums with a staff of thirteen medical men; in Victoria there are six asylums with a staff of fourteen medical men; in South Australia there are two asylums with a staff of two medical men; in Tasmania one asylum with two men; in New Zealand at least three large asylums with two men each; in Queensland two asylums with three men, and of Western Australia I am not sure.

In putting these facts before you I may only be anticipating an inquiry which might strike your Council, and would finally state that without doubt many general practitioners would join our Society, and in this I speak confidently of Victoria.

You are at liberty to make journalistic use of this letter, and I trust you will understand my difficulty in making an article of it myself, though no such hindrance stands in the way of letter form to you professionally.

I have the honour to be, sir, your obedient servant,

W. BEATTIE SMITH,

Medical Superintendent.

Percy Smith, Esq., M.D.

COMPLIMENTARY.

DR. NORTON MANNING'S RETIREMENT.

We report, with much regret, that Dr. Frederick Norton Manning has resigned the office of Inspector-General of the Insane for the Colony of New South Wales, which he had held for many years with so much credit to himself, and so much benefit to the colony and its insane.

The resignation of a public official of the type of Dr. Manning cannot fail to be a great public loss, for although it is not difficult to find officials who will be certain to discharge complex duties with adequate efficiency, it is not so easy to ensure that the man and the office shall be in absolute and acknowledged harmony, and this is what, by a somewhat rare combination of qualities, Dr. Manning was able to secure in his own case.

Commencing his medical career at St. George's Hospital, receiving his first appointment at the York Dispensary, and subsequently entering the navy, in which he remained for several years, he left everywhere pleasant impressions behind him.

While serving in the navy he lost no opportunity of visiting the various public medical institutions which were to be found in the ports at which he

T. W. McDowall in the chair, it was unanimously resolved that a vote of condolence and sympathy be tendered through you to the sons of the late John A. Wallis, M.D., one of Her Majesty's Commissioners in Lunacy, and a member of the Association, in their recent sudden and sad bereavement by the death of their father.

The Medico-Psychological Association also desired to place on record the great loss it had sustained by the decease of one of its most valued and distinguished members.

Believe me to remain,
Dear Sir, yours very faithfully,
ROBERT JONES,
Honorary General Secretary.

John Merson, Esq., M.D.

NOTICES BY THE REGISTRAR.

EXAMINATION FOR THE NURSING CERTIFICATE.

Six hundred candidates applied for admission to the May examination for this certificate. Of this number 102 failed to satisfy the Examiners, 27 withdrew, and the following were successful.

ENGLAND.

WARWICK COUNTY ASYLUM, HATTON.

Females.—Margaret Baldock, Mary Jane Baldock, Lillian Cindery, Lucy Coles, Lily Mary Cross, Annie Holtham, Agnes Hadden, Maria Heffernan, Rose Knight, Elizabeth Moore, Alice M. Oldham, Ophelia F. Prout, Lillian Vale, Alice Watts, Ellen Jane Warth, Clara Kendle.

SUFFOLK COUNTY ASYLUM, MELTON.

Males.—Edward Bradbury, James Davis, Frederick S. French, James McCallum, John Payne, Arthur F. Philpott, Walter George Sharp, John Shill, David Turner.

Females.—Ethel Alexandra Dove, Lizzie Woolnough.

STAFFORD COUNTY ASYLUM, STAFFORD.

Females.—Rose Draper, Winifred Hall, Harriet Ruttly, Alice M. Tavernor, Mary E. Weaver.

KENT COUNTY ASYLUM, CHARTHAM.

Males.—Aaron Message, John Walker.

Females.—Maria Brannan, Isabel Crawford, Mary Dunn, Ellen Leaney, Matilda Newey, Annie Williams.

OXFORD COUNTY ASYLUM, LITTLEMORE.

Male.—Henry Nutt.

Females.—Gertrude Hickman, Annie Money.

DERBY COUNTY ASYLUM, MICKLEOVER.

Males.—George E. Bowins, Thomas Frankton, Bernard J. Green, Walter G. Hopper, William Henry Hartley, Herbert A. Hines, James William Swann, William Henry Sharpe.

Females.—Charlotte Barnett, Harriet Griffin, Lizzie Ann Hubbard, Louisa Stanley.

NOTTINGHAM COUNTY ASYLUM, SHENTON.

Males.—Thomas Chambers, Joseph William Caddick, Joseph Crosby, Robert Clarke Lord, William Wilkinson.

Female.—Emily Johnson.

Reuben Foster, William Headon, George Rogers, Walter Williams, Albert James Wensley.

Females.—Hetty Adamson, Jessie Draydon, Jane Holberry, Thirza Lowe, Emma Jane Johns, Sarah Kemble, Eliza Grace Musgrove, Bessie Pearse, Elizabeth Reed, Nellie Stadden, Sarah Thomas, Elizabeth Agnes Tudball.

MONMOUTH COUNTY ASYLUM, ABERGAVENNY.

Males.—Amos Best, Herbert Cole, William Cox, Charles Davies, Benjamin Evans, John Evans, George Hall, William Pitt, Thomas Prosser, George Savegar, James Turford.

Females.—Edith Church, Agnes Dickinson, Phœbe Giles, Mary Jane James, Mary Jane Long, Mary Elizabeth Long, Martha Elizabeth Robotham, Alice Sayce, Mary Smith, Blanche Gertrude Walby, Annie Williams.

DURHAM COUNTY ASYLUM, WINTERTON.

Males.—John Musgrave Foster, Robert Alexander Hayes, Sydney Hunt, Herbert Healey, Charles McKean, John Moore, George William Manning, Alexander Wiseman.

Females.—Lily Carter, Ada Maud Denning, Jane Ann Curry, Adelaide Sadler, Mildred Walker, Mary Waller.

WILTS COUNTY ASYLUM, DEVIZES.

Females.—Lilian Butler Bax, Ellen Barnard, Jane Hazell, Emma Pike, Ada Sarah Sims.

LONDON COUNTY ASYLUM, COLNEY HATCH.

Females.—Ida Cherry, Mary Elizabeth Cox, Lilly Louise Dodd, Annie Esther Dear, Sarah Gosborne, Florence Heselton, Alice May Greenaway, Kate Johnson, Maud Mary Moss, Ada Miles, Flora Glenden Warne, Bessie Woodroffe.

LONDON COUNTY ASYLUM, CANE HILL.

Males.—Arthur George Bulley, James Bamford, James Mitchell, Alexander Noble, Peter Russell, Henry John Spray, Thomas Oliver, Richard Watts.

Females.—Lucy Creemer, Emma Dennis, Sarah Denster, Ellen Florence Marshall, Mary Wyatt.

LONDON COUNTY ASYLUM, CLAYBURY.

Males.—Charles William Brown, Alfred Cottrell, Daniel Faubel, James Henry Finding, Nathaniel Thomas Jeffries, Lambert Edward Long, Frederick Orman, Robert Pullman, William Privett, Thomas Shannon, George Charles Stokes, John Sellar.

Females.—Emma Boosey, Elizabeth Canton, Ethelwynne Mary Geach, Mildred Hutton, Lillian List, Kate McNelly, Laura Alice White.

CITY ASYLUM, EXETER.

Males.—James Henry Bushin, William Robert Gunn.

Females.—Mary Ann Elliott, Annie Ellis, Eliza Ellis, Ellen Hurford, Thirza Annie Webber.

CITY ASYLUM, NOTTINGHAM.

Male.—John William Webster.

CITY ASYLUM, WINSON GREEN, BIRMINGHAM.

Males.—Frank Grosvenor, Thomas Hicks.

Females.—Ellen Buncl, Nellie Pearson, Rose G. Winterbottom.

CITY ASYLUM, HULL.

Males.—Thomas Dyer, David Higgins, William F. Mottley, Thomas Robinson, Frederick Solomon, Henry Spink, Walter Thompson.

Females.—Sarah Jane Ackrill, Mary Burton, Alice D. Credland, Mary Robson, Ellen Robinson.

CITY OF LONDON ASYLUM, STONE.

Males.—William Cross, John Hinton, Harry Beckett Robinson.

Females.—Florence Matilda Evans, Mary Louise Evans, Annie Dixon Paterson, Sarah Ellen Sides, Alice Anne Taylor.

CITY ASYLUM, BRISTOL.

Males.—William Thomas Hollis, John Willett, Allen Ashton, George Beazzer Jones.

Females.—Kate Abram, Annie Brown, Florence Bartlett, Catherine Jones.

CITY ASYLUM, NEWCASTLE.

Males.—Michael Joseph Burns, Thomas Dalrymple, George Duncan, John Elrick, George Gibson, John William Stainthorpe, Peter Wright, John William Wood.

Females.—Margaret Eliza Hutchinson, Isabella M. Johnstone, Isabella Johnson, Mary Lindsay.

BOROUGH ASYLUM, SUNDERLAND.

Females.—Mary Cameron, Margaret Hasker, Agnes King.

BOROUGH ASYLUM, PORTSMOUTH.

Males.—Henry Fuller, Arthur Himmens, William James Martin.

Females.—Louisa Gough, Annie Main, Maude McKeown, Alice McKeown, Nellie Shepard, Daisy E. Wild.

BOROUGH ASYLUM, PLYMOUTH.

Males.—Alfred James Barrett, Joseph Keily, Bertie Stockman.

Female.—Alice Maud Harper.

BOROUGH ASYLUM, DERBY.

Male.—Charles Cockerill.

BETHLEM HOSPITAL, LONDON.

Female.—Florence Letitia Dormer.

WARNEFORD ASYLUM, OXFORD.

Males.—Ernest John Croton, Frans Reinhold Strömback.

Females.—Kate Jones, Ida Dora, M. Packford.

NORTHUMBERLAND HOUSE ASYLUM, LONDON.

Male.—John Peters.

THE RETREAT, YORK.

Females.—Eveline Stansfield Collier, Pollie Crossley, Lilian Mary Sidney.

BROADMOOR ASYLUM, BERKS.

Males.—Herbert John Edwards, Joseph Woodley, George Downes.

CAMBERWELL HOUSE ASYLUM, LONDON.

Males.—Charles Hillier, Fred Hutley, Arthur Massey, Charles E. Mabbett, Louis Leon Owen.

Female.—Eva Rosannah Crook.

SCOTLAND.

STIRLING DISTRICT ASYLUM, LABBERT.

Males.—Alexander G. Beaton, John Hendrie, Alexander Robertson.

Females.—Annie Binnie, Maggie Macintyre, Annie Nicholson.

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

Male.—James Cairns.

ROXBURGH DISTRICT ASYLUM, MELROSE.

Males.—Andrew Eddie, Charles Rothaie.

Female.—Margaret Clapham.

PERTH DISTRICT ASYLUM, MURTHLY.

Male.—James Grant.

Female.—Phoebe E. Berwick.

ROYAL ASYLUM, GARTNAVEL, GLASGOW.

Males.—Charles Burness, Donald Chisholm, William T. McKie.

Females.—Mary Boyd Henderson, Helen Kemp, Agnes Keith Simpson.

ROYAL ASYLUM, MORNINGSIDE, EDINBURGH.

Males.—Alexander Keith, John Young.

Females.—Maggie Clark, May Grant, Isabella Grant, Jessie Grant, Isabella Haggarty, Nellie Haggarty, Margaret Lindsay Jamieson, Catherine Mackenzie, Annie Paton, Margaret J. O. Russell, Bessie West.

WOODILIE ASYLUM, LENZIE, GLASGOW.

Females.—Martha McDonald, Alice McGowan, Mary Mason, Annie Snodgrass.

ROYAL ASYLUM, DUNDEE.

Female.—Hannah McSweeney.

IRELAND.

RICHMOND ASYLUM, DUBLIN.

Males.—Edward S. Breen, Michael Higgins, Andrew Maagan, Patrick McEntee, James M. McCue, Michael O'Leary, Charles Rogan.

Females.—Mary Ellen Byrne, Jane Dunne, Mary Geraghty, Annie Hanna, Mary Anne Kelly, Kate McPartlin, Martha McKissick, Ellen Reddy.

DISTRICT ASYLUM, CARLOW.

Males.—Edward Doogue, Lawrence Gorman, William Hickson, Peter McEvoy.

Female.—Annie McDonnell.

DISTRICT ASYLUM, KILKENNY.

Males.—John Curran, Michael McDonnell, John Tynan, Michael Tyrrell.

Females.—Mary Butler, Mary McEvoy.

DISTRICT ASYLUM, MONAGHAN.

Males.—Felix Connolly, Patrick Kildea, Peter McGuigan, John G. McClean, John McArdle, Patrick McQuellin, William R. Steenson.

Females.—Mary A. Cahill, Mary A. Maguire, Jane Maxwell, Katie Stephenson, Marianne Treanor.

DISTRICT ASYLUM, LETTERKENNY.

Males.—Philip H. Hay, Charles McCafferty.

DISTRICT ASYLUM, OMAGH.

Males.—Philip McTeggart, Alexander Patterson, John Taylor, Thomas Ward.

Females.—Eliza Jane Beats, Margaret McGreed.

DISTRICT ASYLUM, CLONMEL.

Males.—Robert Bell, James Fahey (1891), James Fahey (1893), William Flaherty, Edward O'Brien.

Females.—Kate Barrett, Julia Nash.

The following is a list of the questions which appeared on the paper :

1. Describe the ankle-joint, naming the bones of which it consists, explaining its action, and stating to what order of joints it belongs. 2. Name the cavities of the trunk. State how they are separated and what they each contain. 3. Name the various parts of the body connected with the process of digestion. In cases of indigestion what precautions are necessary? if these are neglected what diseases may ensue? 4. Detail the special points requiring attention in the nursing of paralysed patients. 5. What is an hallucination? What is a delusion? How are hallucinations divided, and what are the chief general forms in which delusion appears? 6. What symptoms would make you say a patient suffered from dementia (*acquired* enfeeblement of mind)? 7. What symptoms would lead you to believe that a patient was suicidal? State fully the dangers to be looked for. 8. What are the chief points to be attended to in a case of poisoning, and what antidote would you give if a patient had taken carbolic acid? 9. Mention the different kinds of enemata, say for what purposes they are given, and the quantity of fluid usually ordered in each. 10. In dealing with patients what are the qualities that make an attendant most to be valued?

NEXT EXAMINATION FOR NURSING CERTIFICATE.

The next examination will be held on Monday, November 7th, 1898, and candidates are earnestly requested to send in their schedules, duly filled up, to the Registrar of the Association, not later than Monday, October 10th, 1898, as that will be the last day upon which, under the rules, applications for examination can be received.

NOTE.

As the names of some of the persons to whom the Nursing Certificate has been granted by the Association have been removed from the Register, employers are requested to refer to the Registrar in order to ascertain if a particular name is still on the Roll of the Association. In all inquiries the number of the certificate should be given.

For further particulars respecting the various examinations of the Association apply to the Registrar, Dr. Spence, Burntwood Asylum, Lichfield.

EXAMINATION.

The Examination for the Certificate in Psychological Medicine will be held on Thursday, July 7th, 1898, at 10 o'clock a.m., in London at Bethlem Hospital; in Edinburgh at the Royal Asylum, Morningside; in Glasgow at the Royal Asylum, Gartnavel; and in Aberdeen at the Royal Asylum, Aberdeen. Applications for admission to the Examination should be sent not later than Thursday, June 30th, 1898, to the Registrar, Dr. Spence, County Asylum, Burntwood, near Lichfield, who will be happy to supply any further information on this subject.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

The Annual Meeting will be held on Thursday and Friday, July 21st and 22nd, at the Royal College of Physicians, Edinburgh, under the Presidency of Dr. Urquhart.

South-Eastern Division.—At Springfield House, Bedford, on Monday, October 10th.

Northern and Midland Division.—At Derby, on Wednesday, October 12th.

South-Western Division.—At the Grand Pump Room Hotel, Bath, on Tuesday, October 18th.

APPOINTMENTS.

Simpson, Francis Odell, L.R.C.P.Lond., F.R.C.S.Eng., has been appointed Senior Assistant Medical Officer to the Govan District Lunatic Asylum, Crookston, N.B.

Longworth, Stephen F., L.R.C.P.I., L.R.C.S.I., Assistant Medical Officer, Richmond Asylum, Dublin, to be Senior Assistant Medical Officer, Suffolk County Asylum, Melton.

Eades, Albert I., L.R.C.P.I., L.R.C.S.I., Clinical Assistant, Richmond Asylum, Dublin, to be Second Assistant Medical Officer, Nottingham Borough Asylum, Nottingham.

CORRIGENDUM : MEYER ON FRAGILITY OF THE BONES OF THE INSANE.

We desire to correct an error which appears in the April number of the *Journal of Mental Science* (page 298 of this vol.). In the discussion on Dr. Briscoe's paper on "The Osseous System in the Insane," Dr. Conolly Norman is reported as referring to the work recently done on this subject by Dr. Krause. The reference is erroneous. The work intended is an article by Dr. Ernest Meyer (now of Tübingen) which appeared in the third number of the 29th vol. of the *Archiv für Psychiatrie*, entitled "On Fragility of Ribs in the Insane." The mistake doubtless arose from the fact that Dr. Krause, working in the laboratory of Professor Ludwig Meyer, contributed to the same number of the *Archiv* an article on another subject, which stands next to Dr. Ernest Meyer's. In correcting the proofs of his remarks the speaker evidently glanced at the wrong article.

THE JOURNAL OF MENTAL SCIENCE.

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PART I.—ORIGINAL ARTICLES.

The Presidential Address delivered at the Fifty-seventh Annual Meeting of the Medico-Psychological Association, held at the Royal College of Physicians, Edinburgh, on the 21st July, 1898, by A. R. URQUHART, M.D., F.R.C.P.E.

BEFORE addressing you, I have formally, however imperfectly, to express my full appreciation of the high honour conferred upon me at your hands in thus placing me in the Presidential Chair of your beneficent Association. I say *beneficent* advisedly, for when men have banded themselves together for the cultivation of science and the improvement of the condition of the insane, they associate to fulfil these functions as practical philanthropists. These good intentions have been realised in fruitful performance in words and deeds, and we hold our Annual Meeting to-day with a desire, an ability for good work that cannot fail to mark the year as one of humane progress.

Having regard to the serried volumes of the *Journal of Mental Science*, and the long list of Presidents whose names are familiar as household words with us because of their attainments in psychological medicine, their successors undertake the duties with natural hesitation and much heart-searching as to real ability to maintain the honorable and dignified traditions of this Chair. I have once again looked over the Presidential Addresses which have been delivered year by year, and have now accumulated in a record of wide research and ordered detail. They mark the progress of psychiatry periodically and definitely, and show how it has ever been the aim of your Presidents to occupy some

outpost coigne of vantage, to formulate some new phase of medical thought, to present for your consideration ideas which may fructify, to epitomise the events of the day in relation to our special field of labour. The wish to produce something worthy of the occasion has been paramount with me, and if in the result I fail to do justice to my desire, I crave your indulgence.

It has fallen to me, as a Scot, to bid you once more welcome to this historic city—"our own romantic town"—and as a Fellow of this ancient and honorable College to receive you within these precincts where our Association has so often found asylum.

In recalling those who have occupied this Chair in this city, I must arouse many memories. In 1858 the great Conolly entered upon the office of President, rejoicing that the close of his life should have been distinguished by the privilege of presiding in a city endeared to him by all the recollections of a student. It was then he disclosed that it was after an accidental visit to the old Glasgow Asylum when he first became impressed with the importance of the study and the treatment of mental disorders, and unconsciously devoted to the cause of the insane. The results are familiar to us all, but those who knew Conolly in the flesh are now but few and scattered. Perhaps none had a higher appreciation of the man and his work than Sir John Bucknill, who once said to me in his burly manner, "I would have every man who aspires to care for the insane read every word Conolly published."

Again in 1863 Dr. Skae laid before the Annual Meeting the preliminary sketch of the classification of mental diseases which he had then adopted, a classification which once for all fixed the attention of psychiatrists on the physical basis of mental disorders.

Later the veteran Dr. W. A. F. Browne, welcoming the Association for the first time under the title which it still bears, proceeded to discover that wider horizon of philosophic thought which ought to be ours. He it was who first systematically instructed attendants in their important duties, and in his memorable book on "Asylums as they were, are, and ought to be," laid the foundation of modern methods.

In 1872 Sir James Coxe spoke with no uncertain sound on the causes of insanity, urging that it is a disease of ignorance and should be combated by adequate instruction of the people in the laws of mental and physical health.

And, lastly, ten years ago, we had from Dr. Clouston, the only survivor of these his illustrious predecessors, what still remains the only systematic monograph on dementia, that debased ruin of minds diseased.

We sadly miss one familiar face and figure from our gathering to-day, one whose shrewd wit found unsuspected joints in the armour of self-satisfied science, yet one whose friendly counsel was valued most by those who knew him best. Dr. Howden did a long day's work for the Montrose Royal Asylum, busied to the last with schemes for improvements which he was not permitted to see accomplished. In reminiscence for me he is linked with his near neighbour, Dr. Jamieson of Aberdeen—slow-spoken, friendly, righteous men, wholly devoted to their proper work in life, yet philosophic in breadth of view and catholic in sympathy with all that is good and beautiful. The grave has closed over them, but their memory is green and fragrant.

Another steadfast friend and tried comrade has been lost by the death of Dr. Wallis, whose services in the county of Lancashire and at Whitehall are so well known to all present that I may not speak of them at length. As an old friend, his active virtues and brave conduct of life in the shadow of death were brought very near to me. We lament that he has been taken from amongst us while yet in his prime.

Dr. Ringrose Atkins, too, has departed. The sincerely appreciative account of his life which appeared in our *JOURNAL* shows unmistakably how his death affected our colleagues in Ireland. It may be added that the writer, in sending what he considered an unduly long manuscript, expressed his complete inability to deal adequately with a man of such admirable character and many-sided interests within the narrow confines usually judged sufficient.

I cannot conclude these brief words of affectionate remembrance without reference to two older members of our special department of medicine who died in fulness of years, men who were notable in their day and kindly thought of by those who were associated with them in their work. Dr. Marshall and Dr. Sheppard were charged with large responsibilities in Colney Hatch, and fulfilled their duties with unflinching zeal.

Such are the inevitable losses which the revolving years entail. It is for the survivors to close up the ranks and stand fast against the inroads of dumb forgetfulness. And they are assured of willing recruits, with whom the future

lies. The men of old time have had their day and ceased to be. We summon ardent youth and vigorous manhood to aid us in the ceaseless conflict with disease and death, to hold the old positions where footing remains secure, to advance to new conquests all along the line.

It is written that "the coney are a feeble folk, yet they make their dwellings in the rocks." The founders of this Association builded secure on the rock of humane science, but they could hardly have anticipated that from such modest beginnings their house would in process of time attain such dimensions. It was a happy thought of Dr. Outterson Wood's to present us with a lively account of that gallant band of pioneers, clearing the forest of prejudice, cutting away the undergrowth of darksome ignorance, letting in the free air to disperse the miasmata engendered in a soil poisoned by cruelty and superstition. These pilgrim fathers enriched us with an inheritance which we, their heirs and assignees, must not endanger.

When we last met here we numbered 450. In spite of deaths and desertions we are now 574. Since that occasion new life has pulsed through the Association. Germinal force is evident in segmentation before the new creature is perfected as an organism and fitted with members and parts to complete its unity. Such cleavage has already been effective in augmenting our potentiality for good. The new divisions have united our scattered elements at times and places hitherto impossible, and have elicited a consensus of opinion which we previously failed to reach. Our colleagues in Australasia now propose to work in concert, while uniting with us in federate control, on the principles which are surely moulding the imperial politics of our race.

These reflections are not to be succeeded by an *apologia*, nor do I purpose sounding premature pœans of victory. In all sobriety rather let us consider in what respect we have done reasonably well, and what the immediate future should hold for us. Our sharpest critics are of our own household. The hasty judgment of the man in the street is modified when he knows. When misfortune overwhelms him, and his nearest and dearest are in jeopardy of losing reason, his cheap sarcasms are forgotten. Hear Sir Henry Maine on this old theme. "A friend of mine once said he had no belief in medicine, it was an art which made no progress. It may be worth while to examine the particle of truth which makes such a view possible to highly intelligent men

looking at it from the outside. . . . All the contributory arts and sciences, subordinate to one master art, the art of healing—physiology, pathology, toxicology, chemistry—are advancing at a vast rate, and whenever all these arts and sciences are complete, medicine will be the most complete and perfect of all the arts. But, by the very necessities of their profession, medical men are compelled to act as if an art was complete which is only completing itself. We are constituted of too frail a structure to be able to wait for the long result of time, and our infirmities place medical men at a disadvantage as compared with other men of science, by forcing them to anticipate a consummation which may be near but has not yet been reached." Partly because of this pardonable impatience, partly because of the inability of the average man to adopt the principles of preventive medicine, our work wears the appearance of failure. We know what has been done to ameliorate the conditions of asylum life—the improved architectural arrangements, the improved sanitation, the improved nursing, the improved medication. Yet, in face of the untoward cases and evident failure, we cannot but ask if our results are really better. Admitting that the environment has been rectified, can we show more recoveries consequent upon vast expenditure of energy and money? Can we grow two blades of grass where one grew before? Have the deaths been fewer? Have the ravages of disease been held in check?

It is the stock answer to these inquiries that the kind of patient admitted is different, that the type of insanity has changed, that the riddle cannot be solved. It is, indeed, extremely difficult to place exact facts on record for purposes of comparison. Not only is there a difference in the personal equation which renders it impossible for any two men to classify a thousand cases exactly in the same way, but there is an additional stumbling-block when we attempt to sort out, from brief and imperfect histories, the facts which we now desire to record, and the conclusions which we now desire to draw. There is such a change in the medical attitude since the century was young, such an alteration in nomenclature, that backward projection of the modern mind cannot be other than tentative. It fails to penetrate the mists. Therefore, although we have reduced the salient facts of each case admitted into Murray's Asylum into narrow compass, and have attempted to diagnose the maladies in accordance with modern ideas, much uncertainty remains.

Broadly it may be stated that the impressions above indicated are borne out by the medical history of the institution. The cases received between 1827 and 1864, when the State-supported patients left, were more actively insane, were younger, more hopeful in prognosis, than those which have been admitted since that decisive date. Taking the middle years of the first-named period, and comparing them with the years since my appointment in 1879, the acute cases numbered 65 per cent. of the admissions of the former, as contrasted with 46 per cent. of the latter. Similarly, those over the age of 60 were 4 per cent., as contrasted with 14 per cent. Or, on classifying the cases according to mental condition, the great majority in the earlier period suffered from mania, few from melancholia, very few from delusional insanity, and surprisingly few from dementia. The curve for melancholia rises, with trivial remissions, year by year.

If we turn to the study of recoveries, the results are no less in accordance with general opinion. Large assumptions must be made in dealing with "cures" reported as consequent on prolonged residence—even after twenty years. Accepting plain statements of this nature as true, the decline in the number of cases recovered during the later decades is sufficiently remarkable, but it is only when the recovery rate is ascertained, by the adoption of Table IIA, as prescribed by this Association, that an approach to truth is evolved. Having arrived at the number of persons admitted during the first period of thirty-six and a half years, we found that 41.1 per cent. had been discharged recovered, as compared with 35.1 per cent. during the last period of thirty-three years. But on reducing these to the net recovered persons, in so far as the Asylum statistics can show, we were face to face with the fact that the recovery rate was more evenly approximated, viz. 35.3 per cent. as compared with 32.9 per cent., a difference of 2.4 per cent. instead of 6 per cent. I believe this to be due in great measure to the number of alcoholic cases formerly received as insane patients. Their accumulated "recoveries" bulk largely in the general total. The large number of cases of delirium tremens and acute alcoholism, regarding which there is no room for error in diagnosis, owing to the history, instant classification, and brief detention, entirely vitiates any comparison founded upon undigested figures. The number of alcoholic cases "recovered" during the first period was practically the same as the number who did not recover—each class, recovered and not recovered,

represented 15 per cent. of the whole number of admissions. On the other hand, the proportion of "recovered" alcoholic cases in the last period was but 8 per cent., while two thirds of the alcoholic admissions did not recover. It must also be noted that the returns as to recoveries from an asylum devoted to middle-class private patients are less favorable than those from a county asylum, for reasons which have been adequately explained.

Turning to the death-rate, by which our work may be judged from another point of view, the results for the earlier and later periods are 5.05 and 5.65 per cent. respectively. That is a slight difference in favour of the former. The considerations which I have placed before you weigh in this connection also. When we scrutinise the constituent elements more closely, we cannot but stand appalled at the record of deaths owing to causes which we now consider "preventible." Putting aside the great number loosely assigned to senile exhaustion, phthisis heads the list with a formidable percentage of 13 of all the deaths occurring in the first period. Although the original design of the building included elaborate provision for the heating and ventilation of every room, the arrangements were practically ineffective, and during the latter part of the first period many of the rooms of 800 cubic feet capacity were crowded with three patients. The deaths from diarrhoea, enteritis, and similar diseases could not fail to be numerous. An epidemic of cholera in 1854 claimed eight victims. At that time patients of faulty habits were secured to seats in small rooms by day, and exchanged these for their restraint-beds at night. The imperfect sanitary arrangements, rendered even more dangerous by the attempts of ignorant attendants to remedy them, resulted in the accumulation of lakes of sewage under the flooring. The water-supply was scanty and impure, and the general management of the establishment was carried on in face of the gravest difficulties. The suicides numbered eleven, a heavy mortality which also must be considered as largely preventible. The heroic treatment of even ordinary cases of mania—violent purgatives, bleeding, blistering, setons, and the general regimen—leave a record of gangrene, carbuncles, and other evidence of faulty methods. And yet the death-rate was low. I conclude that the average age and physical strength of the patients under care was more favorable in the earlier period. The debilitated cases now received require nursing and nourishment, and could not

withstand the assaults of the antiphlogistic treatment so much in favour in former times. We retain but one survivor of that régime, one who, while able to make his wants known, never failed to secure a full dose of Epsom salts in spring and in autumn, however unnecessary it might appear to latter-day opinion.

I think that this higher level of physical condition is also apparent in the fact that but one death from influenza was recorded, although it is evident that epidemics did occur. No doubt degenerative diseases of the nervous system caused the greatest number of deaths, but the actual facts cannot be elicited. A careful study shows that epilepsy was not uncommon, and that general paralysis was not so rare as has sometimes been stated. The first recorded case of general paralysis occurred in 1850, but it is evident that prior cases had been received and had died after the usual course of symptoms. I venture to state that the percentage of deaths from general paralysis for the first period was 8 as compared with 10 for the second.

I have not directed your attention to the early history of Murray's Asylum to gain cheap applause for the manifest improvements which later experience has permitted. The men who founded that institution and administered its affairs at that time were actuated by the highest, the sincerest motives. The fundamental ideas of the management were expressed in the first Annual Report as *forbearance* and *kindliness*. The times were different. When Lord Chancellor Eldon declared that there could not be a more false humanity than an over-humanity with regard to persons afflicted with insanity, and when Dr. Halloran recommended the bath of surprise and the gyrating chair as humane means of treatment, the methods of the press-gang and the tyranny of authority in high places were the order of the day. Now the centre of authority has shifted, and that change has entailed dangers of another kind; but we live in better times, in a social environment on a higher plane. We take colour from our surroundings, and can but say *Tempora mutantur et nos mutamur in illis*.

The position now occupied by our profession is no longer limited to the narrow confines of curative medicine. With the growing reverence for human life in its manifold relations, the fiat *Salus populi suprema lex esto* has been endowed with a widely extended meaning. So much the more are we bound to undertake these newer duties for which the prac-

tical and enlightened education of our Medical Schools fitted us, and for which that liberal education of professional after-life enlarged our abilities; so much the more is it laid upon us to throw the weight of our influence into all that makes for the amelioration of our common humanity. Although the end is not yet, the people will not despise prophesyings if we speak plain words of common sense with sincere conviction of the importance of our calling. Much of our knowledge has passed into commonplace for us, and of course we are intimately concerned with the technicalities of our absorbing avocation. Still, the commonplace becomes commonplace because it is largely true, and therefore important in the conduct of life. What is technical is esoteric, and consequently neither popular nor widely influential. How should our neighbours, busied with the daily work of the world, find time to interest themselves in the minutiae of research? They ask for results.

I should say that the question most often put to us is, Does insanity increase? That is an inquiry of public importance, and it should be answered with an indication of how the evil may be mitigated. Experience points to prevention rather than cure, although precept falls on deaf ears or ears wilfully closed. I have arrived at that stage when one receives the insane children of former patients, and can imagine nothing more discouraging than the slow devolution of degenerate families if attention is restricted to the immediate facts. Such observations should rather nerve us to renewed vigour. We have opportunity in our annual reports to repeat, even with tiresome iteration, the lessons which are read to us year after year; we may address the public through the many societies which exist for the spread of scientific information; we may find occasion to contribute to the columns of the periodical Press; we may act in our corporate capacity as Dr. Whitcombe has proposed this morning. It is our bounden duty to enlarge our sphere of contact with the sane community, to be instant in season in promulgating our teaching until the commonplaces of our specialty become the commonplaces of the world.

I need go no further afield than my left hand to illustrate my meaning by an allusion to the life-work of our honoured Treasurer, who, in the intervals of his more immediate professional work, in the brief respite from the onerous work done for this Association, lends a willing and powerful pen to the furtherance of worthy aims or the criticism of erroneous con-

ceptions, and, beyond all, gives his business experience and energetic mind to the affairs of the county of which he is a worthy son.

Let us for a few moments revert to Dr. Conolly's address, delivered here in 1858. He placed before this Association several propositions which then seemed to him of the first importance. He pled for the due recognition of the medical superintendent in the management of our asylums. That has been fully granted; the controversy is extinct. He pled for clinical instruction in our asylums, and the absolute necessity for our medical officers having received practical training in the department of mental diseases. The great institutions for the insane in the neighbourhood of our medical schools are now utilised in that manner, not only for those about to enter on psychological medicine as the department of their choice, but also for every student desirous of placing his name on the medical register. Practical knowledge of mental disease is now compulsory for all. Conolly pled the cause of the poor private insane, and England is at length, by the law of the land, in a position to do all that is necessary on their behalf, and already that law has passed into active operation in Dorset, the West Riding of Yorkshire, and elsewhere. He pled the cause of those worn out in the service of the insane, and we seem now to be on the eve of obtaining adequate gratuities and pensions as a legal right—for England at least. He uttered a warning against the monstrous aggregation of patients in overgrown asylums, and pled that these institutions should be kept of moderate size. To-day, by the kindness of the Edinburgh Parish Council, I had hoped to have directed your attention to the latest solution of this problem. The plans to be exhibited in the neighbouring museum next week show how the colossal whole is broken into manageable fragments—a more excellent way, upon which we may warmly congratulate those who have so efficiently adopted it.

In the impatience of zeal forty years seems a long period to wait for reforms which cry aloud for public recognition; but if in another forty years similar progress shall have been made, our present labours will have borne good fruit.

I ask you to consider briefly what now demands our attention. In the present session of Parliament three Bills likely to pass into law have special interest for us—the English Lunacy Bill, the Habitual Drunkards Bill, and the Irish Local Government Bill. These have been fully discussed at our various meetings, and need not detain us long.

On reading the first-named one cannot but feel disappointed that it contains no proposal for increasing the number of the Commissioners in Lunacy. I doubt if any legislative reform in connection with lunacy is so much required. Every year adds to the number of insane persons under the cognizance of the Commissioners, until the total recorded in England and Wales has reached 101,972, as compared with 20,611 when a permanent Lunacy Commission was first established. At that time Lord Ashley proposed that six paid Commissioners should be appointed at salaries of £1500 each, and observed that the proposal would be economical in the end. Did he then foresee that six Commissioners would be deemed sufficient to control the welfare of five times as many insane persons as were then reported? I feel that some apology is required for introducing such a threadbare subject, and repeating statements familiar to all here present. But how does the matter stand? Is it not detrimental to the cause in which we are most deeply interested that the Commissioners should be hurried from asylum to asylum in the intervals of dealing with the affairs of the vast organisation over which they preside? The lunacy administration of Scotland is fortunate in having maintained a reasonable proportion between the number of the Commissioners and the work in hand, so that they are familiar with individual cases of difficulty and the details of management of each institution.

I discern, too, in this Bill a danger threatening the asylums of England, a policy of legal restraints which is unwholesome and deterrent to the best work expected of them. We have in practical management emerged from the narrow conceptions of the past. We have discarded the ideas of the prison, and trust to educated control and constant supervision. Rules and regulations are doubtless necessary, but this legislation for exceptional cases and this prescription of harassing formulæ is not conducive to that freedom of initiative which has made our asylums what they are. Erect the lunacy administration of the country into a great State Department, and you will fetter originality by the red tape of bureaucratic control, and trammel the advance of scientific opinion by the dead weight of that officialism which is the besetting sin of asylum life. When the physician loses himself in the official his degradation is apparent, he is absorbed in financial details, the last litter of pigs rivets his attention, the patients merely detain him from affairs which would probably be as well managed by the farm-bailiff or the

house-steward. It is proverbially foolish to chop wood with a razor.

“The low man seeks a little thing to do,
 Sees it, and does it :
 The high man with a great thing to pursue
 Dies ere he knows it.
 The low man goes on adding one to one
 His hundred's soon hit ;
 The high man, aiming at a million,
 Misses an unit.”

I congratulate our colleagues in Ireland on their spirited declaration in opposition to the proposal to transfer the care of the insane to the Local Government Board, and their suggestions for the more efficient medical service of the Irish asylums. Mr. T. W. L. Spence has shown that ordinary pauperism is entirely different from the pauperism which fills our wards, and that our public asylums exist for the care and cure of the insane belonging to more than four-fifths of the population of the country. Whatever feeling may exist in connection with the name “asylum,” at least it has not been officially placarded with pauperism in our nomenclature. These institutions are the District Asylums, not the Pauper Asylums of Scotland.

I have never been brought into contact with any considerable body of opinion in favour of erecting lunacy administration into a State Department. The differences and uncertainties of local control inevitably show flaws inherent in all human designs, but leave freedom for scientific advance, and insure a healthy competition for the rewards of skill and labour. Would it be advisable that we should indent for medicines according to the regulations of the Army Medical Department? Is it expedient that asylum dietaries should be fixed by a central authority without regard to local conditions? Could we have obtained these designs for the new Edinburgh Asylum from the Royal Engineers, whose ideas of construction are so much in evidence in the prisons of the country? It therefore seems to me that we can discover an unwholesome tendency in the tightening of authority by the Lunacy Bill now in progress through Parliament. For instance, there is a proposal to set apart the various wards of an asylum *allenarly*, as we say in Scots law, for certain specific purposes, as if we were latter-day Canutes, who should command disease to restrict itself to fixed localities—saying thus far and no further. There is a proposal to limit the uses of succursal villas, and thus to

retrace steps assuredly proved to have been in the right direction. There is no inherent superiority, in respect of cure, in buildings of vast size and architectural pretensions. That is a mere recrudescence of outworn ideas. The physician can treat certain cases better in houses of small size; and if there be any value in the private care of the insane, as there undoubtedly is, a method which recent developments have tended to increase, it should be adopted as part and parcel of the system of asylum management.

The necessary preliminary, the necessary sequence, is efficient inspection by men of skill and repute. Such men we have had in the past, those who, while wisely exercising judicial care and supervisory functions, effectively aided the work done in detail in the various institutions of the country. No doubt some of us have promulgated ideas and adopted methods at variance with the best practice of the specialty, and have been more or less damaged in kicking against the pricks. The wonder is that so few deviate into disastrous byways, considering the nature of the office we have undertaken. For—

“Almost thence our nature is subdued
To what it works in, like the dyer’s hand.”

But we recall that, in another place, Shakespeare lifts us into a higher phase of thought :

“O benefit of ill, now I find true
That better is by evil still made better.”

The remaining Bill, alluded to the other night by Mr. Balfour as a specially Scots measure, a Bill which may be accepted as an instalment of legislation on a most important subject, is that relating to Habitual Inebriates. It is the natural sequence of the ineffectual Act of 1879, and marks a great advance on that half-hearted measure. The Government has occupied a strong position, from which it can hardly be driven by hostile criticism. To us, who are unwilling witnesses of the havoc wrought by inebriety, these present proposals cannot seem adequate. Men and women in thousands make shipwreck of their lives by their abuse of stimulants and narcotics, and are received into asylums in hopeless condition mentally and physically. They constitute a danger to the commonweal, their wasted lives are a loss to the state. Yet this Bill fails to deal with them, as if their vice were self-regarding, provided they do evade the purblind cognizance of the police. In eighteen years I have had 85 habitual drunkards under care in Murray’s Asylum, not to

speak of those who came under my notice elsewhere ; and it does not appear that, had this Bill passed into law at the beginning of that period, half a dozen of those persons would have been affected by its provisions. The tale of misery would have been all but as complete. In the nature of things the poorer class of the insane obtain earlier and more appropriate treatment than the well-to-do ; similarly the "criminal" class of inebriates will have a better chance of reformation than the law-abiding.

That does not appear to be a nice discrimination which regards the mere accident of the form of drunkenness, and hastens to rescue the man who is obnoxious in his cups, leaving the inoffensive sot to stagger on his way to perdition. In my experience chronic alcoholism is largely hereditary, either in consequence of predisposition to insanity, or the neurotic disorders engendered by parental drunkenness. I therefore urge that there should be exceptional protection for individuals so handicapped in life's race ; and, further, that our courts of law should be empowered to sequestrate any man who has so lost control of himself as to be a danger to himself and others by reason of vicious indulgence in intoxicants. The liberty of the subject is not so wide as when it was—

" The simple plan
That he should take who has the power,
And he should keep who can."

and it may be confidently predicted that this specious liberty will be yet more narrowly hedged about with wise restrictions, at least till the coming of the Cocquecigrues.

I do not greatly complain that legislation progresses slowly with us. Nay, it is a positive advantage that hasty and immature schemes should be rejected, and that our Acts of Parliament should be well matured and inevitable. In the United States laws are passed with an inconsiderate rapidity which too often results in their being left derelict in the press of affairs. Unfortunately we know something of this here in Scotland. By Act 25 and 26 Vict., cap. xxxv, sect. 14, the police are to report on persons from whose premises persons in a state of intoxication are frequently seen to issue ; but it is only within the last few months, and apparently as the result of local effort, that such reports have been brought before the courts. By clearing our country of rampant vice, by enforcing our present laws, we might do much to deter the inebriate before he enters on an over-mastering habit ; but above all

we must rely upon that higher and better education, which has brought about a complete revolution in the attitude of both ladies and gentlemen towards drunkenness. I fear that this Association has not taken up this subject so effectively as it might have done. It has not formed the subject of an address from this chair; nor do I remember that any committee has been appointed to report on the problems involved. Beginning with Trotter's memorable book on drunkenness, which, though published in 1804, had long previously been presented to the University of Edinburgh as his inaugural dissertation, we have indeed a great and rapidly increasing literature, to which our members have contributed in due proportion. The knowledge that papers on inebriety are shortly to be presented for your consideration restrains me from entering into details on this occasion. I do wish, however, to press upon your attention certain broad principles in regard to the reformatory treatment of inebriates before concluding. We have seen how habitual drunkards were relegated to the Perth Asylum, by order of the Sheriff, prior to the present Lunacy Acts coming into force. It was apparently felt that their condition was akin to insanity, and that they would be best placed in that kind of institution. That method of treatment was a mere makeshift. An asylum for the insane is not the place for inebriates. The discipline is not of that stern stuff which is necessary; the habitual attitude of the staff is not precisely what is requisite. The great Lord Mansfield, whose voice was ever for freedom, he who declared the slave who touched the shore of England free, looked upon drunkenness as a crime, and held that a criminal act committed in drunkenness was punishable, on the ground that one crime could not excuse another. But there is now apparently a desire to confuse the issues, and, rather than differentiate between vice and disease, hold that all habitual drunkenness is a disease. The common sense of the country revolts at such a notion.

The fundamental notion of the treatment of inebriates is more reformatory than curative. Curative it must be in the sense that bodily disorder should be treated with skill and solicitude; but medical treatment is of little consequence if moral treatment is not placed in the forefront of our endeavour to restore the person to his rightful place in the world. Dr. Norman Kerr boldly states in the preface of his book that "inebriety is a disease as curable as most other diseases." That is so far from being even approximately true in

my experience, that I am not surprised to find in his interminable lists of "remedies" but one short sentence to the effect that it is "the great point to have a healthy outlet in energetic work of some kind"—regarding which "a word of caution as to moderation will not be amiss." In all his hundred and odd pages on treatment, only this and nothing more. But one ha'porth of bread to an intolerable deal of teetotal sack—from the alcoholic extract of frog, through the unintoxicating wines of Frank Wright Mumby & Co. to the benefits of inebriates' Homes, with their statistics of "cures," which we in vain attempt to emulate. I do not believe that all drunkenness is insanity, any more than the converse, that no drunkenness is insanity. I do not believe that it is as curable as most other diseases. Habitual drunkenness has its terminal dementia as inevitable as that of more marked mental disorders, and in spite of all our efforts fate will sweep its victims into that dreadful abyss. The hospitalisation of the drunkard is, after all, a late remedy and a doubtful. We have a larger hope in anticipating, and so frustrating, habits of vice or disease. The true statesman fulfils his duties in formulating precautionary measures not less than in devising the reformatory treatment now under review.

It would seem that the doctrine of partial responsibility of certain criminals and certain inebriates must soon prevail. Heredity and environment must be taken into account in the vast complex of modern conditions of life. Careful investigations into the mental and physical state of the individual elicit facts which operate powerfully on the awakened conscience of our times. We recognise that society owes a heavy debt to the enfeebled. We recognise that drunkenness is very frequently a mere symptom of mental aberration, necessitating a revision of the statistics so confidently published in less critical days. We recognise that crime is largely the expression of faulty physical organisation and faulty habits of training. Withering sarcasms flung at the wretched criminal from the judicial bench are no more heard. "Ye're a gey clever chiel, but ye'll be nane the waur o' hanging!" an outrage at the time, is an impossibility now. "Nane the waur o' reformation" is more in accordance with the dominant note of our social life, although smart journalists, in their flippant mode, are found to declare that "if murder be a disease, hanging is a cure."

I had the good fortune lately to visit Elmira Reformatory,

accompanied by Dr. Wey, who has served as medical officer there for a long period of years; but shall spare you a description of the institution and the details of management, for these are accessible to anyone desirous of making a study of the work done under Mr. Brockway's initiation and direction for a quarter of a century. This grand experiment has survived the jeers of the prejudiced, has emerged unscathed from the attacks of the unscrupulous, and stands for good in the economy of the civil life of the State of New York. It has marked the epoch. Turn to Sir Edmund du Cane's article in the May number of the *Nineteenth Century*. In a criticism of the Prisons Bill, while expressing the opinion that the system adopted at Elmira does not seem to have caught on in the United States, he suggests that a special prison should be set apart for the younger criminals of England, as the most mischievous age is between 16 and 22. Now the average age of reception into Elmira is 21, and the whole endeavour of the institution is towards the reformation of those who so urgently require it. Briefly, the mental and physical characteristics of the individual are elicited, he is first of all brought to the highest possible standard of bodily health, he is taught a trade, and is liberated conditionally, if that be thought proper, within the maximum term of imprisonment for the crime for which he was convicted. These are the points which I commend to your attention, reasonable measures of treatment which cannot but meet with your approval. In our dealings with the criminal and the inebriate, restraint is the first necessity; but unless that restraint is followed up by a regimen designed to insure physical and mental health, our plans are faulty, our results will be inadequate, and liberation, conditional or absolute, will merely open the door to unresisted temptation. Work and recreation, inseparably interwoven with worthy intention, are profoundly essential for the right conduct of life. Omit these, and there is no true happiness, no lasting interest, no safety for man in the plenitude of his powers. So much the more necessary is it to lead the inebriate back to his forgotten Eden, and to discover for the instinctive criminal satisfactions he never possessed.

I have scarcely referred to the vast improvement in methods of research, to the enormous volume of work which is being done in the medical institutions of our speciality and allied establishments. These are apparent to all good readers of our JOURNAL, and it is for us to profit by them. If we some-

times despair of adopting the methods of investigation of the new psychology by reason of the morbid condition of our patients, and the apparent impossibility of ascertaining correct results, we may at least use the information so gathered by the school of Kraepelin and other indefatigable observers. At this time of day it is unnecessary to fashion the knife before we open our oysters. Our tools are more precise, more numerous, more effective than those of our fathers, and the researches of specialised specialists are ours for the asking.

We have not been behind the times in this matter, and hope that the laboratory of the Scottish asylums, which is to be visited this afternoon, will meet with your approbation. Started by Dr. Clouston, now, as ever, indefatigable in the promotion of medical science, under the wise direction of Dr. Yellowlees, with the loyal co-operation of all our medical superintendents, opportune in the aid given by this College, our laboratory has already been of distinct service to our department and the interests it includes. Fortunate in its first superintendent—Dr. Ford Robertson—we may yet hope to see it develop into a great school of psychological medicine, complete in all its departments of anthropological, anatomical, physiological, and clinical research—a magazine of information, a Mecca for men of science, where the general physician, the neurologist, and the psychiatrist will find common interests and incite to fresh endeavours.

We feel the danger of our position in our comparative isolation, and in our specialising in medicine at too early a period of life. I need not enlarge upon that which is ever present with us, except to urge that our efforts to keep in line with the general body of the profession should be increasing. We should live on terms of closest intimacy with the neurologists, who, in dealing with less evasive forms of nervous disease than insanity, can aid us right effectively. And one may be permitted to add that the neurologists cannot afford to neglect our work, for the protean forms of mental disorder are manifest in many of the cases brought under their notice.

I look with great hopefulness to the results of that closer contact with general hospitals which we should endeavour to bring about. It is a very real reproach to us that no psychiatrist has yet been appointed on the Staff of the Edinburgh Royal Infirmary. We have learnt from Dr. Rayner and Dr. Crochley Clapham that their work is no longer in the experimental stage. Surely what has been

approved by results at St. Thomas's and Sheffield should be adopted here. So long ago as 1871 Dr. Sibbald showed that the exclusion of insane patients from ordinary hospitals is a wrong idea of recent date, and that the administrative and legal difficulties are not insurmountable. We still await the realisation of his ideas, and it seems to me that it is high time for us to take action.

And now, gentlemen, to trespass on your patience no longer, pardon me if I say, with Locke, "The goodness of my intention ought to be some excuse for the worthlessness of my present. I acknowledge the age we live in is not the least knowing, and therefore not the most easy to be satisfied. . . . Every one must not hope to be a Boyle or a Sydenham, and in an age that produces such masters as the great Huygenius and the incomparable Mr. Newton, with some others of that strain, it is ambition enough to be employed as an under-labourer in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge." Yes, it is given to few to be master-builders, else would more stringent rules and additional regulations be imposed upon us to produce a new philosophy, a new psychology, and a new pathology with each revolving year.

This address is not laden with details of statistics or details of observations garnered in the course of the quarter-century during which I have been connected with the care and treatment of the insane. On such an occasion, however, one may be allowed a word of retrospection. I call to mind experiments regarding the action of hyposulphite of soda as an intestinal disinfectant, while serving under my distinguished friend Professor McIntosh at the Perth District Asylum; experiments regarding the action of gelseminum as an anodyne for mental pain—work of no moment from a public point of view, but engrossing then, and still interesting to me personally. I have noted the rise and fall of drugs in professional esteem, and hope to have arrived at a reasonable ordering of their uses. I have seen wild speculations committed to oblivion, and words of enduring wisdom rooted in our practice.

We can all appreciate theories founded on well-observed facts, reasoned conclusions which help us to realise the mechanics of mind; and the conclusion of the whole matter, the latest dictate of science, is in confirmation of the wisdom of the ages. If we grant that the will traverses the cells and fibres of the brain along paths that are capable of auto-

development, and that normal man is so endowed with mental powers as to be in truth the "captain of his soul," verily it is our duty to avoid ignoble thought, and to entertain high purposes. If Sir James Crichton-Browne spoke hard words of a system that saps the strength of immature and feeble minds, he also warned us of the brain-rust that finally destroys. Not least upon us, whose vocation is of the highest, yet compassed about with horrible pitfalls, not least upon us is laid the apostolic injunction to think on these things which are of good report. Perennial is the command, perennial are the rewards, written large upon individual character, and upon the lives of those entrusted to our care.

Dr. RAYNER moved a vote of thanks to the President for his valuable address. He had listened to a great many addresses from the Chair, and this one had pleased him more than any. Dr. Urquhart had taken a comprehensive view of their work, supported it in a most striking manner, and treated it in a most interesting and able fashion. There was one point raised which he (Dr. Rayner) would desire to bring to a practical issue; that was in regard to the English Commission in Lunacy. He thought that they had endured the present state of things long enough, and he was of opinion that they should express their views as to the necessity for enlarging that Commission to the Lord Chancellor.

Dr. CONOLLY NORMAN, in seconding, said the address deserved more than the usual mere congratulatory motion. The President had given them the broad results of his observations in connection with insanity for a quarter of a century. He had placed before them an array of remarkable facts, culled not only from his own personal experience, but also from the records of the institution which he directed. He had dealt, among other things, with a singular and striking fact, hitherto unexplained as far as he (Dr. Norman) knew, but surely capable of being explained; that was the curious change in the prevailing type of mental disease which had occurred within the last few generations. From his own experience he could entertain no doubt that there had been a great increase in melancholia over mania of late years. The change applies even to the melancholic form of general paralysis, and it was quite impossible if that type of general paralysis had been formerly so prevalent as it was now it could so long have escaped attention. He believed that there was at the present time a danger of over-legislation in connection

with insanity,—to this extent at least, of having the work of the superintendent made too departmental, and too little that of the practical physician. The departmental notion would be the ruin of their position and of their usefulness if ever it were carried out. It had been detrimental to the insane in every country where it had been adopted. There was a similar tendency threatening France—an apparent desire to make the superintendents of asylums stewards or managers, to insist on them concerning themselves with “beans and bedsteads” rather than with the cure of the insane. He sincerely hoped that this tendency would be resisted to the utmost by their Association as a body and by themselves as individuals.

Dr. A. E. MACDONALD, of New York, said that he had the honour of presenting his credentials as representative of the Medico-Psychological Association of America, and had further to thank the meeting for having conferred upon him the high distinction of election as an honorary member. He had listened to the President’s able and broad-minded address with very great pleasure, and could endorse what he had said in reference to the Elmira Reformatory. In his opinion the efforts made to reclaim young criminals in that admirable institution had been largely successful. Elmira had given many a chance of becoming useful citizens, and he strongly supported further development of Mr. Brockway’s work in America.

The resolution that the thanks of the meeting be given to Dr. Urquhart for his presidential address was then put by Dr. Rayner, and cordially adopted.

A New Nissl Method.—Normal Cell Structure and the Cytological Changes terminating in Fatty Degeneration. Some Remarks on Cell Physiology and its Relation to Insanity. A Note on the Use of Picro-formol generally, and in Bevan Lewis’s Fresh Method. Being the Essay which gained the Bronze Medal and Ten Guinea Prize of the Medico-Psychological Association, 1898; by J. R. LORD, M.B., London County Asylum, Hanwell.

I. *General Remarks.*—It has frequently appeared to me that a rapid and easy method of staining according to Nissl would be of great advantage. It has been my routine practice

to cut a fresh section and to stain according to Bevan Lewis in every case of insanity in which an autopsy had been obtained, and from that to record a few microscopic notes. A fairly complete description of neuroglial changes could thus be recorded, but only in a minor degree the changes which had occurred in cell protoplasm, *i. e.* cytological changes and various degenerations. For this one has to stain according to the method of Nissl, a method which stands out supreme for this purpose. But even Nissl's method is by no means perfect, and there are many drawbacks and imperfections. Hardening in alcohol causes considerable shrinkage; in fact, the main part of the cell is occupied by the nucleus. Alcohol also largely dissolves out fat, and therefore fatty degeneration cannot be shown. Again, it is not every asylum laboratory that has equipment for Nissl's method, but every asylum has the means of making a Nissl preparation according to a way I am about to describe.

II. *Advantages of the New Method.* — (a) Sections quite freshly cut with an ordinary freezing microtome are used. This allows of large unshrunk cells being examined in place of the small cells, the result of hardening. (b) Alcohol not being used as a hardening medium, fat is not dissolved out. As a result I have been enabled to trace more completely the changes that a cell undergoes prior to fatty degeneration. (c) Simplicity of the process. There is no need for embedding. (d) Rapidity of the process. A good Nissl preparation can be obtained within thirty minutes of death. (e) This method shows more accurately the degree of separation of the tissue, an important point in cerebral pathology. (f) Neuroglia and blood-vessels are better stained.

III. *Picro-formol as a Fixing Agent.* — It was found impossible to subject a fresh section to Nissl's method without shrinkage and disintegration of the section. I therefore looked about for a suitable fixing agent. After trying many things (amongst which was osmic acid), a mixture of picric acid and formol was found to be the most suitable. Solutions of various strength were tried, and the best one was found to be—

A saturated aqueous solution of picric acid . . .	50 per cent.
Six per cent. formol solution in water . . .	50 „

This solution is a good general fixative for all processes, and a good Nissl preparation can be obtained after some weeks' immersion, the pieces being taken, frozen, section cut and stained. For other methods the fixative can be washed out,

and in my experience I have never found it to interfere with future staining. This applies to all tissues, whether brain or not, and there is no more suitable medium for the preservation of tissues when found necessary to send them away for examination. It is to Dr. Graf that I owe the idea of a mixture of formol and picric acid.

IV. *The Method.*—A piece of fresh brain is taken (the fresher the better) about 2 c.c. from the central convolution with pia adhering, and frozen on a freezing microtome (pia towards the operator), one of the best being Fraser's modification of Cathcart's microtome. A little gum on the plate facilitates freezing. Sections are cut and immediately floated into water. They are then taken up on a slide and some micro-formol allowed to flow on. Care should be taken that the section floats on the fixative. The section is subjected to this for five to fifteen seconds, and then it is floated back on water. It is next taken up on a slide, and a .5 per cent. aq. sol. of Nissl's methylene blue (Methylenblau patent B) is pipetted on just in the same way as was the micro-formol. It is now heated until the first bubble appears, and allowed to cool. The excess of stain is washed off, and a solution of aniline oil in absolute alcohol (10 per cent.) is allowed to flow on until no more stain leaves the section. Dry the section by pressing with blotting-paper, taking care to see that the surface of the latter is smooth, or the section will be torn. Origanum oil is next dropped on and removed, after clearing, in a similar way. Benzine removes any traces of oil left. It was usual to mount in a solution of colophonium in benzine in order to obtain a permanent specimen. The benzine was burnt off by firing. Others have recommended evaporating the benzine gradually by gentle heat. Neither of these plans is satisfactory. The following is better:—Melt some colophonium in a porcelain capsule, only adding a little benzine. Smear the melted colophonium over the section with a glass rod used horizontally. Now put on a cover-slip and heat until the cover-slip is in a satisfactory position. For this purpose use a thin sheet of asbestos mounted on wire gauze, and supported on a tripod over a Bunsen flame.

V. *Normal Structure of a Large Pyramidal Cell according to this Method.*—The cell consists of a mass of protoplasm of a roughly triangular shape. This is not constant, as many are distinctly stellate. The less the brain is hardened the fewer cells appear pyramidal. It has numerous processes, the main one being that which passes up to the outer layers of the

cerebral cortex. Staining by methylene blue reveals a fine fibrillation. Throughout the cell are small spindle- or rod-shaped bodies, which take on the stain deeply. The protoplasm about the nucleus appears to be deeper stained, but this is due to the greater thickness of protoplasm in this situation. The nucleus appears to have a capsule, and stains less deeply than other parts of the cell. An intra-nuclear network is easily made out. The nucleolus takes the stain deeply, and a clear endonucleolus can be frequently seen. I ought to mention that this is a more or less ideal account of structure, founded not merely on the microscopic appearances of human nerve cells, but also on those taken from monkeys, dogs, cows, pigs, cats, &c. In man, although one frequently sees cells which completely bear out this description, yet even in an apparently sane cortex the large pyramidal cells commonly show a mass of yellow material unstainable with ordinary aniline stains—a material which I have succeeded in demonstrating to be of a fatty nature. (See Section VIII.)

VI. *Some Further and less Definite Points of Cell Structure.*

—Examination of the kitten's brain, fixed and stained immediately after death, shows points which I have never seen in human brain tissue. These may modify our views in some respects. The nucleus is not rounded, but irregular, in some almost stellate in shape. It takes the stain deeper than the main body of the cell. The latter is seen to contain an irregular coarse network with apparently clear interstices. Frequently two or more deeply stained nucleoli are present. The great majority of the cells are irregularly stellate. The structure of the outermost layer of the cortex is beautifully revealed, showing the occurrence of large stellate and spherical cells with cytological structure differing from all other nerve cells which I have examined. This will form the subject of another paper.

VII. *Changes in the Cell in Fatty Degeneration.*—One of the first changes is an enlargement of the nucleus. It becomes darker and granular. The ovoid bodies break down into smaller ones of varying shape. These are usually found about the proximal part of the cell. This is not constant, however, as sections show that any part of the cell may undergo the same change. These smaller bodies break down into smaller ones still. The nucleus loses its distinct shape, and cannot be distinguished from the degenerate cell protoplasm. The finer granules shade gradually into fat. As they change the stain affects them differently; at first

dark blue, then dark green, then light green, and finally yellow. Finally the cell breaks down completely and bursts. The contents escape, and there is nothing left but the stumps of the processes. Usually in any section all these changes can be noticed, sometimes one and sometimes another predominating. The earliest stages are the most difficult to recognise. Examination of a large number of sections shows that fatty degeneration is the common fate of nerve cells in insanity. This view is supported by the most recent results of chemical investigation.

VIII. *The Nature of this Yellow Material.*—I have been at some trouble to ascertain the nature of this yellow material. So far, in this paper, I have assumed that it is of a fatty nature. A difficulty (more or less imaginary) arises when we consider the fact that very few large pyramidal cells in the human cortex are without it, and the question arises, is it normal? I am of opinion that there is a degree of fatty change in an otherwise normal cell due to ordinary katabolism or natural gradual decay, but we never find in a normal cell all the series of cytological changes above described. These changes are distinctly pathological. I do not maintain that they occur only in insanity, because, as will be pointed out, there is every reason to believe that these cells are not the source of nervous energy, but are merely trophic centres. It is elsewhere that the origin of nerve impulse must be sought. Thus gross changes might occur in these cells and the person be quite sane; while, on the other hand, we know that such changes are commonly concomitant with insanity.

I believe that the essential pathological change which causes or accompanies insanity will, in the future, be demonstrated to occur in the outermost layer of the cerebral cortex, a region to which great attention has of late been paid, and justly so. But to come back to this yellow material. I had till quite recently failed to stain it with osmic acid, but lately have succeeded, the green stain ending where the black begins. After fixing in picro-formol for three days, sections were cut and placed in .25 per cent. osmic acid for twelve hours. They were then counterstained with methylene blue, and the black staining of the yellow material was clearly shown. The whole of the degenerate material was, however, only partially stained, and thus I conclude that it is an intermediate product between normal protoplasm and fat. Moreover the degenerate material found in early stages of cell degenera-

tion is not affected by osmic acid. Ether and alcohol dissolve out a portion only, and thus confirm my opinion. From these considerations I am convinced that the protoplasm of these nerve cells ultimately breaks down into fat, which can be stained with osmic acid and dissolved in ether and alcohol, the intermediate products yielding negative results to these reagents.

IX. *Some Remarks on Cell Physiology and its Relation to Insanity.*—A most important question in cell histology is the question as to whether the minute fibrillæ of the nerve communicate directly with the nucleus, or pass independently through the cell, taking departure through another process. The enormous and far-reaching change the acceptance of this latter opinion would cause in our ideas on the function of these cells has largely hindered this opinion from being accepted, but there can be little doubt as to its correctness. I think that it has been clearly demonstrated that these fibrillæ neither end in nor have any direct communication with the nucleus. On examining these cells with the high power the fine fibrillation before noted is seen not to be interrupted by the nucleus, but to pass (at all events in the peripheral parts) straight through the cell. What, then, is the function of the nucleus? We can no longer hold the view that it has anything to do with the impulse (sensory or motor) passing along the nerve-fibre. We have no proof whatever that it either originates or receives an impulse. We can assign no function to it except a trophic function, having some nutritive influence on the nerve cell and the fibres in connection with it. We know that the first evident signs of active degeneration occur in the nucleus, and this may point to a trophic function. Otherwise there is no necessity to ascribe to the nucleus any function whatever. We might, indeed, look upon it as a relic of development, its function having ceased when the cell separated from its parent neuroblast after having performed its duty in karyokinesis. On first beginning these investigations I thought that a certain arrangement of chromophile granules might be associated with certain forms of insanity; but this has failed. Further investigation and experiment may show that certain forms of degeneration are associated with certain forms of insanity, but at the present I can only affirm that the commonest form of degeneration terminates in fat.

The ovoid bodies have excited much interest, but I doubt very much, after examining very fresh specimens, whether

they are not really the result of the splitting up of a general protoplasmic network of the cell. On this point I am still undecided.

If nerve cells are not the seat of nerve impulse, what is? This is a difficult question, and its solution is not within the power of the author. But, as before stated, I think that it will be found in the outermost layer of the cerebral cortex. Many considerations support this view. Everyone knows that gross lesions may affect large portions of the brain, and that the person may still retain undamaged mental powers. Also that most of the pathological changes said to occur in insanity are found in the brain tissue of perfectly sane people, with perhaps one exception, *i.e.* those changes affecting the membranes and the subjacent layer of grey matter. Even in slight cases of meningitis delirium is soon apparent. This is probably due to the spread of the inflammatory process to the layer immediately below the meninges. Further, if we grant that the nervous processes associated with mentalisation and consciousness occur in the outermost layer of the cerebral cortex we correlate these with a vast area, an area not only anatomically continuous, but also connected with every part of the brain. Thus I would account for sanity persisting in spite of wide-spread coarse brain lesions. Processes certainly pass outwards from the nerve cells in the deeper layers, and it would appear that the minute fibrillæ pass straight through the nerve cells to the outermost layer and there split up. The manner in which they end has not been demonstrated. Do they come in contact with cells there, or do they end in the matrix? As before stated, I have noticed peculiar cells in this layer in the kitten's brain, but have not yet demonstrated them in the human brain because of the difficulty in obtaining pieces immediately after death.

X. *Picro-formol in Bevan Lewis's Fresh Method.*—Experience shows that picro-formol can take the place of osmic acid as a fixative in Bevan Lewis's method. It should be used exactly in the same manner as osmic acid, and of the same strength as for Nissl's method. It is cheaper and less difficult to keep. The stain takes quicker, and neuroglia stains more deeply. Otherwise it has no advantage over osmic acid.

XI. *Concluding Remarks.*—Thus within a short time of the patient's death, and with very little apparatus, a complete account of microscopic appearances can be recorded. The piece of brain is taken, frozen, sections cut and stained according to Bevan Lewis and Nissl, and from these two sets

of sections changes in all the constituents of the cerebral cortex can be fully described.*

Description of Drawings illustrating these Changes.

FIG. 1 represents the appearance of a normal cell. The nucleus (*N*) stains lighter than the cell body. *NO* is the nucleolus with a clear endonucleolus. The ovoid bodies (*OB*) are stained deeply.

FIG. 2 represents an early stage of degeneration. The nucleus is enlarged and granular, while one of the processes shows the breaking down of the ovoid bodies into intermediate granules before becoming fatty.

FIGS. 3 and 4 represent later stages with the appearance of fat (*F*) and the different staining of granules (*G*) and intermediate granules (*IG*). The nucleus is scarcely distinguishable.

FIG. 5 represents a later stage still. The cell has burst, and nothing remains but the processes and *débris*.

The Specific Gravity of the Insane Brain.† By FRANCIS O. SIMPSON, L.R.C.P.Lond., M.R.C.S.Eng.; Senior Assistant Medical Officer, Govan District Lunatic Asylum, Hawkhead.

THIS paper is only intended to be a preliminary note upon the specific gravity of the brain in the insane, and contains the results of experiments upon thirty cases conducted at the West Riding Asylum, Wakefield, during the early part of this year. Over 1400 investigations have been made upon these brains, and as the inclusion of data from different parts of the country might cause scientific inaccuracies, it has been thought advisable to publish the present results separately, prior to the initiation of a further series of experiments.

The most important work upon the subject undertaken in this country was performed by Sankey between the years 1846 and 1852, the material used being obtained from the London Fever Hospital. The paper in question appeared in the *British and Foreign Medico-Chirurgical Review* of 1853, vol. xi; it is of a most exhaustive nature, and is accompanied by numerous valuable tables.

The present series of investigation were conducted upon

* Since writing this paper I have had my attention directed to a method by Dr. Robert S. Cook, in which osmic acid was used as a fixative, and have repeated my experiments with osmic acid, which has failed as before to produce a good Nissl preparation.

† Prepared for the Annual Meeting of the Medico-Psychological Association, Edinburgh, 1898.

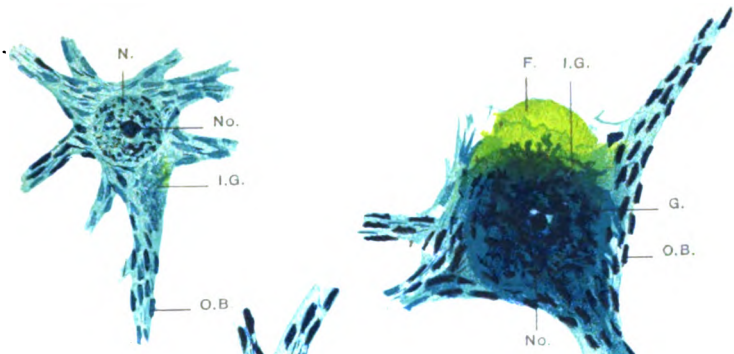


Fig. 2.

Fig. 4.

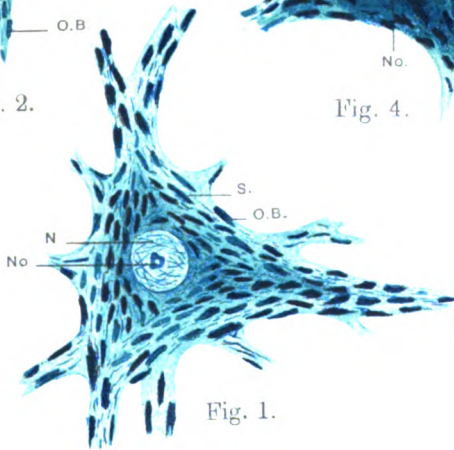


Fig. 1.

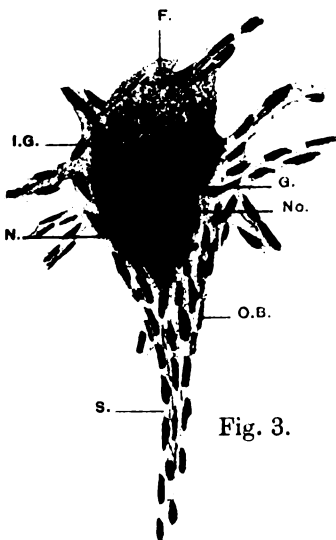


Fig. 3.

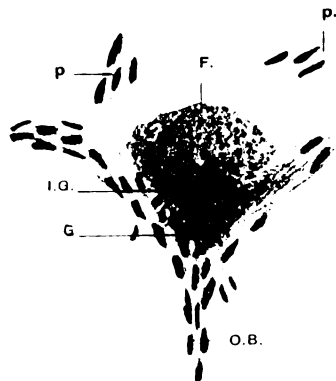


Fig. 5.

To illustrate Dr. LORD'S Prize Essay on a new Nissl method.

fourteen male and sixteen female brains, the same regions being examined in every instance, viz. :

1. The middle of the second frontal convolutions.
2. The middle of the ascending parietal convolutions.
3. The middle of the second occipital convolutions.
4. The middle of the hippocampal convolutions.

The grey and the white matter of each region have been tested from either hemisphere, and every experiment has been performed in triplicate, the greatest precautions being observed in ensuring the accurate separation of the cerebral components.

The average time after death at which the investigations were conducted was thirty-five hours, and the average age at death of the patients was fifty-five years for both sexes, the females averaging fifty-eight years, and the males six years less.

Clinically the cases might be relegated to the following categories, viz. :

1. Five cases of general paralysis.
2. Five cases of senile dementia.
3. Four cases of organic dementia.
4. Five cases of secondary and one of primary dementia.
5. Five cases of epileptic dementia, and one of epileptic imbecility.
6. Three cases of simple imbecility.
7. One case of chronic melancholia (omitted).

The method employed in these experiments has been as follows :—Large pieces of the encephalon were excised from the regions to be tested before the removal of the pia, and set aside until the conclusion of the macroscopical examination. It is necessary for this purpose to use a very sharp knife, the back of which should be as thin as possible ; and a straight sharp-pointed bistoury can be conveniently adapted to these requirements by suitable grinding. Subsequently minute fragments (2 × 1 cm., or even smaller) may be detached from the larger portions of cerebral tissue by the use of a Liebreich's or Critchett's cataract knife, or a cataract spoon with sharpened edges, thus avoiding as far as possible undue compression of the brain matter.

The fluid used has been a saturated solution of magnesium sulphate, to which a small quantity of pure carbolic acid was added. The presence of the phenol renders the solution of greater stability, and prevents the growth of fungus in the fluid, thus obviating the necessity for its frequent renewal.

A separate test-glass was reserved for each unit, and the contents were adjusted each morning, care being taken to ensure their precise accuracy: by this is meant that in the glass labelled 1039, for example, the bulb 1038 should be *exactly* at the surface of the fluid, and that marked 1040 just touching the bottom of the tube.

All Forms of Insanity.

Examining the totals from all regions of the brain, we find that the average specific gravity of the grey matter of the insane brain is 1037, and of the white matter 1041. In Sankey's paper the grey matter was stated to be 1034, and the white matter the same as in the present series, so that the insane cortex is of higher specific gravity than that of the non-insane at the same age.

Next, regarding the sexes, we discover that in the insane the specific gravity of the white matter is the same for each, whilst that of the grey matter is 1039 in males and only 1032 in females. Comparing these figures with Sankey's results, we again observe that the specific gravity of the white matter is the same amongst the sane as in our present cases; whilst, regarding the grey substance, the specific gravity is higher in the male insane and lower amongst female lunatics than amongst the general members of the community.

Taking each region of the brain separately, we discover that, when regarding all forms of insanity together, there is a close resemblance between the specific gravity of the two hemispheres of the brain in every part examined, whilst the greatest differences between the white and grey matter exist in the motor region, and such variations are precisely similar on the two sides in the case of the frontal and occipital lobes. The grey and white matter of the cornu Ammonis show exactly the same specific gravity in both hemispheres.

Considering the sexes separately, we notice that in the males the specific gravity is precisely identical in the two hemispheres both for the white and grey matter of each region. The greatest difference between the grey and white substance in men occurs in the frontal regions, the least in the occipital convolutions, whilst in the cornu Ammonis the white matter of each hemisphere has a somewhat lower specific gravity than the grey substance.

Amongst the females, on the other hand, the only region in which grey and white matter show the same specific gravity in both hemispheres is the ascending parietal convolution. The

differences between the specific gravity of the grey and the white substance are practically the same in both frontal and occipital regions, but these differences are much greater in the right hemisphere than they are in the left. The specific gravity of grey and white matter in the hippocampal region of the females is almost identical in both hemispheres.

1. *General Paralysis.*

Considering the various clinical classes of insanity as separate entities, and starting with progressive paralysis, we find the specific gravity of the grey matter to be 1040 and of the white substance 1042; or, in other words, it is higher in general paralysis, taking the brain as a whole, than in any other form of insanity examined; and, comparing the above figures with Sankey's results at the same age, we observe that in paralytic dementia the specific gravity of the grey substance is much higher and that of the white matter somewhat lower than amongst the sane. The average age at which these cases were examined was thirty-five years.

The specific gravity of the grey matter alone is also considerably higher in this affection than in any other of the clinical subdivisions investigated in this paper.

The specific gravity of the white substance is not so high in general paralysis as in secondary dementia, but higher than in the other clinical classes of which we have examples, and there is less difference between the specific gravity of the grey and white matter in paralytics than in any other form of insanity under consideration excepting organic dementia.

In the further examination of the paralytic dement's brains regionally we notice a considerable similarity between the specific gravity of the grey matter in the two hemispheres, but the white matter is much higher in the right hemisphere than it is in the left.

The specific gravity of the grey matter is a trifle higher in the motor region than in the frontal and occipital lobes; in these two latter situations it is precisely identical in each hemisphere.

The greatest difference between the specific gravity of the grey and of the white matter in general paralysis occurs in the occipital regions, and the least variation is present in the frontal lobes.

The grey matter of the hippocampal regions is of somewhat higher specific gravity in both hemispheres than the white.

2. *Senile Dementia.*

The next clinical form of insanity for consideration is senile dementia, and the average age at death in the present series of cases was seventy-five years.

The average specific gravity of the grey matter is 1037, and of the white matter 1041, the corresponding figures in Sankey's tables being 1032 for the grey and 1041 for the white substance. It should also be noticed that in seniles the specific gravity of both grey and white substance is exactly the same as the average specific gravity for all forms of insanity (*vide antea*).

Examining the various regions of the senile brains separately, we find that the specific gravity of the grey matter is lowest in the frontal lobes and highest in the occipital regions; whilst the greatest difference between the specific gravity of the grey and white substance is likewise observable in the frontal gyri and the least variation in the occipital convolutions.

The white substance in this class is of a lower specific gravity in the occipital convolutions than elsewhere, being the same in the frontal and motor regions of both hemispheres.

The specific gravity of the cornu Ammonis is precisely the same in each hemisphere, both as regards the white and the grey matter.

3. *Organic Dementia.*

The next clinical subdivision in our list is organic dementia, the age at death in these cases being sixty-one years, and the specific gravity of the grey matter 1037, whilst that of the white matter is 1038.

Sankey's results at the same age showed a specific gravity of 1034 for the grey matter, and 1041 for the white substance. Thus it will be seen that, in demented of this class, the grey matter is of average specific gravity for the insane, but the white substance lower in this respect than in any other of the clinical classes; also that there is less difference between the specific gravity of grey and white matter in this than in any other form of insanity.

Next, considering this division regionally, we find that the specific gravity of the grey matter is higher in the occipital lobes of both hemispheres than elsewhere; also that the white matter shows the lowest specific gravity in this locality, which is likewise noticeable for showing the least difference between the specific gravity of the grey and of the white substance.

When considering the cornu Ammonis we observe that the specific gravity is identical in the two hemispheres both for the grey and the white matter, whilst these figures are also the lowest observed in any of the clinical forms of insanity.

4. *Simple Dementia.*

Simple dementia forms the next of our clinical classes, and the age at death in this class averaged forty-nine years, whilst the cerebral specific gravity is 1038 for the grey, and 1043 in the case of the white matter; that is to say, that whilst the specific gravity of the cortex is about average in this form of insanity, the white matter is higher than in any other subdivision.

The figures at the corresponding age in the non-insane were 1035 for the grey matter and 1041 for the white, establishing clearly the fact that the specific gravity of the brain is higher in simple dements than in the general public.

Concerning the grey matter of the various regions examined in this class, the specific gravity is noticed to be highest in the occipital and hippocampal gyri, and equal in these situations for both hemispheres. The specific gravity of the grey matter is at its lowest in the frontal regions in this clinical division.

The greatest difference between the specific gravity of the grey and of the white matter, taking the brain as a whole, is noticed in simple dementia, and the white substance shows the greatest irregularity of all the clinical classes in this form. It is rather higher in the right hemisphere than in the left for every region examined.

The cornua Ammonis show greater variations between the specific gravity of their grey and white matter than the same regions do in any other form of insanity, and that of the right hemisphere is higher than that of the left for both the cerebral constituents.

5. *Epileptic Insanity.*

The epilepsies constitute our next clinical category, and the age at death in these patients was fifty-four years, the specific gravity of the brain as a whole being 1038 for the grey substance and 1042 for the white,—slightly higher in each instance than the average for all forms of insanity.

Comparing these figures with those of the non-insane at a similar period of life, that is to say 1031 for the grey matter and 1041 for the white, we observe that although the specific

gravity of the white substance of the brain is but little higher in epileptic insanity than in the non-insane, that of the grey matter is much in excess of the corresponding figures for the sane taken at the same period of life.

Next, taking this sub-class regionally, we notice that the specific gravity of the grey matter is highest in the cornu Ammonis and equal in this locality of either hemisphere, whilst its next highest place is in the occipital gyri.

The specific gravity of the epileptic cortex is at its lowest in the frontal convolutions, and varies but little in any region from its fellow of the opposite side.

The specific gravity of the white substance is somewhat higher in the occipital lobes than elsewhere, and is at its minimum in the hippocampal regions. In epileptic insanity the specific gravity of the white substance is rather higher in the right than in the left half of the brain.

The cornu Ammonis in this form of insanity shows an almost equable specific gravity for the two hemispheres, the white matter of this region being of a higher average specific gravity than the grey substance.

6. *Simple Imbecility.*

The last clinical subdivision which claims our attention is that of the simple imbecilities, the age at death being thirty-four years in these cases, and the average cerebral specific gravity 1037 for the cortex and 1040 for the white matter. In other words, the cortex is of average specific gravity in this subdivision as compared with all forms of insanity, and the white substance is decreased.

The corresponding figures in the sane are 1034 for the grey substance and 1041 for the white, so that the cortex of imbeciles is of a much higher specific gravity and the white matter of a slightly lower specific gravity than obtains in the corresponding regions of those who are not naturally deficient.

The specific gravity of the grey matter is higher in the cornu Ammonis than elsewhere, and next highest in the motor region, whilst it is lowest in the frontal convolutions of this class. In the case of all localities but the motor area the specific gravity of the grey matter in imbeciles is identical in the two hemispheres.

The specific gravity of the white substance is highest in the frontal lobes and lowest in the hippocampal regions of

this class. It is also rather higher in the left hemisphere of the brain than on the right side.

The specific gravity of the cornu Ammonis of imbeciles is higher, on the whole, in the left hemisphere, this being due to a decrease in the consistence of the white matter of the right side only. The grey matter of these regions is precisely identical in the two hemispheres.

In conclusion it is to be regretted that no data are to hand concerning the cerebral specific gravity of the acute and chronic psychoses, but further investigations into this subject will be undertaken at the earliest possible opportunity.

*Sewage Disposal at Hawkhead Asylum.** By W. R. WATSON,
L.R.C.S., L.R.C.P.Ed., *Medical Superintendent.*

THE bacterial disposal of sewage has been so widely discussed during the past year or two, that possibly some apology is due to the Association for the introduction of a subject that has ceased to be novel. So far as Hawkhead Asylum is concerned the subject is still in the experimental stage, and the brief outline of the experiment contained in the following communication is the outcome of a correspondence with some of my friends who suggested that the question is not without interest to asylum superintendents.

When the building of Hawkhead Asylum was under the consideration of the Govan District Lunacy Board the disposal of the sewage necessarily received attention. Various plans were in turn suggested and rejected. The asylum grounds having about a thousand yards of river frontage, obviously the simplest way would have been to run the raw sewage directly into the river Cart, already a foul sewage-laden stream. This plan, at present largely followed by private proprietors and public bodies, received no countenance from the Board. Irrigation, so efficient and economical at Cane Hill Asylum and elsewhere, is not available, owing to the character of the soil. Precipitation by chemicals has the enormous disadvantage of having to deal with the sludge, which, after all the expense and trouble, is of little or no agricultural value. For a time a method was followed of

* Read at the Annual Meeting of the Medico-Psychological Association, Edinburgh, 1898.

intercepting the solids for use as manure, and collecting the fluids in tanks for a similar purpose, but after a two years' trial this plan was found to be inconvenient and offensive, and was discontinued. A temporary expedient was adopted, and a further and full consideration of the whole question became clamant. About this time Mr. Dibdin, chemist to the London County Council, had been publishing the results of his investigations of sewage disposal by means of "bacteria beds," and Mr. Cameron of Exeter had constructed his now famous "septic tank." The Govan Board having very wisely decided on obtaining further information, a deputation visited Exeter and Hendon. At the former Mr. Cameron's experimental tank and filters were seen at work, successfully disposing of the sewage of one of the suburbs of the city with a population of 1500. I do not propose to enter upon any lengthened detail of this system, and merely indicate that it consists essentially of two parts: (1) a deep dark tank where the sewage is received, and where by bacterial action liquefaction and other changes take place; (2) filters of clinkers and coke breeze freely exposed to light and air. The effluent from the tank is distributed on the filters, where it is further clarified by filtration and bacterial action, and discharged into the river bright and clear, and free from liability to putrefaction. I satisfied myself of this, having kept a sample for many months. At Hendon the "Ducat filter" was in use, also experimentally. It is simply a deep filter of cinders or coke, with very free admission of air in all directions by means of drain tiles. The filtrate seemed free from objectionable characters, such as odour or colour. When in London two months later I had the opportunity, by the courtesy of Mr. Dibdin and Mr. Wootton, of the Sutton Urban Council, of inspecting the new sewage works at Sutton in Surrey, where what is known as the "Dibdin" or "Sutton" system is in operation. This consists simply of filters of burnt ballast and coke breeze freely exposed to light and air, through which the sewage gradually passes, and in its passage is attacked by myriads of bacteria and changed in character and appearance, the effluent passing out quite clear. The system is at once so simple and so effective that I was most favourably impressed, and anxious to apply it to the sewage problem at Hawkhead. With the object of submitting the matter to the test of experience, permission was readily obtained from the Board to apply the system to the sewage of a number of cottages belonging to the asylum, but

situated at too low a level to admit of their inclusion in a general sewerage scheme for the institution.

Owing to the situation of the cottages favourable conditions of fall and depth of filters were unattainable, but even with these disadvantages the results have been encouraging. The small scheme carried out by Mr. Crawford, the Clerk of Works at Hawkhead, may be shortly described as follows:—An ordinary drain carries the sewage into a man-hole, where a screen is placed to arrest any foreign substances and allay the passage of paper until it becomes pulpy and easily broken up. At some distance from the man-hole, and connected with it by a drain-pipe, two concreted tanks are formed. Care has been taken in the construction to allow a minimum area of one square yard for every 500 gallons of sewage. The floor of the tank slopes to the centre, forming a channel. Over this is placed a cover perforated to admit of the passage of liquids. Two other tanks of similar construction but of smaller size are placed so that the upper margin is a little lower than the floor of the upper tanks. The upper tanks are filled with furnace cinders of a size to just pass a one-inch mesh to the depth of 30 inches, and the lower tanks are filled with coke breeze to the depth of 20 inches. Had it been possible to get double the depth of filtering material, even better results would have been obtained. On the surface of the cinders are radiating wooden channels leading from a central shallow trough, and so arranged as to secure an equal distribution of fluid. By a penstock arrangement in the man-hole the raw sewage is permitted to flow upon either of the two upper filters, or the "bacteria beds," to use Mr. Dibdin's phrase. The changes already referred to take place in the passage of the sewage downwards. By the channel in the floor the fluid is conducted to the surface of the lower tank, where a similar contrivance for equal distribution is placed. After its passage through the coke breeze the effluent, free from colour and smell, is discharged into the river. From a series of experiments I found this effluent to contain on an average as much oxidisable organic matter as "absorbs" .42 grain of oxygen per gallon. This result must be considered under the somewhat unfavourable conditions as satisfactory.

The advantages claimed for the "Sutton" system just described, and it seems with some reason, are—

1. Simplicity of construction. This follows from the absence of expensive machinery, such as is frequently seen at

sewage works. Nothing more is needed than the requisite area and depth of cinders and coke breeze for the volume of sewage to be dealt with.

2. Moderate cost of maintenance and supervision.

3. The disappearance of the sludge. In methods by precipitation, either by chemicals or simply by subsidence, the sludge has to be disposed of in some way. Local authorities have found its disposal by no means an easy matter. Its agricultural value is very small indeed, and in some localities the farmers will not take the trouble to cart it away.

The question of how long such "beds" and filters as I have described will work effectively without renewal cannot yet be answered from our own experience at Hawkhead; but when I was at Sutton those in use had been acting for nine months without any indications of failure. An important point is not to overtax the beds. They must be rested, and hence the arrangement by which two or more can be alternately used for short periods. The surface of the beds ought to be turned over from time to time to the depth of a few inches. When this is done the slight odour given out is very much that of rich garden mould. So far as I am aware there is no experience of any lessened activity in these filters. Beyond occasional small additions of fresh material any expense for renewal may be left out of account. The supervision required is very slight, but care must be taken that the distribution is good, and that the proper periods of action and rest are observed.

If such works as I have described be attended to, no odour can be perceived even close at hand, and by judiciously planting shrubs the whole can very effectually be concealed from view. Where asylums and similar institutions are situated in the country, away from systems of common drainage, the disposal of the sewage in an inoffensive way and at moderate cost is an obvious advantage. This, I think, can be secured by the method now under consideration.

Note.—Since the above paper was read the Govan District Lunacy Board have decided to treat the whole of the sewage of the Asylum and Hospital at Hawkhead by "bacteria beds," and as the general conditions are favourable, good results may be looked for.

Discussion.

Dr. SPENCE said he wished to draw their attention to a system of sewage treatment that was perhaps a little newer than Dr. Watson's. It had been brought into prominence by the Engineer of the Wolverhampton Sewage Works, approved

by the Medical Officer of Health for Staffordshire, and was now being introduced into the Lichfield Sewage Farm. The Garfield system was simply a series of tanks filled with common coal—placed in layers of different sizes of slack. The solids were first removed, and the supernatant fluid left to filter through the coal, the effluent being perfectly clear. It would not decompose after having been kept for months. The patentee did not explain the action of the coal. Some said that stones might answer the same purpose. The coal had been examined after having been used in the filter, and no changes, chemically or physically, could be detected. The fact remained that the effluent from the sludge tank, after passing through the coal, became chemically and bacteriologically pure. The coal could be used over and over again. At first, of course, many tons of coal were required, but the cost for renewal was very small.*

Dr. McDOWALL said that at Morpeth they were then increasing their bacteriological tanks. They had tried coal, and found it of no advantage. Small stones or brick (porous material) were better. They only required to form an extended surface for the growth of bacteria, which destroyed the albuminous material. They had got very good results, and now that they were increasing their tank accommodation they had no trouble except as to the disposal of the semi-fluid sludge. Both patients and attendants strongly objected to work in it. He had been advised by an old Yorkshireman to excavate a tank and line it with porous bricks, and to allow the sludge to stiffen in it to the consistency of cheese, the residue being removed from the surface and spread on the ground, forming excellent manure.

Dr. WATSON said that there was some slight misapprehension as to the sludge. At Hawkhead it disappeared entirely, as if it were manure put in the earth. The raw sewage was run upon the bacteria bed, passed through, and produced no sludge; even paper became a pulp and vanished. This went on month after month without any special attention except the alternate use of one or other set of beds, and turning the surface of them over occasionally. If the experimental system turned out as successful as it promised they would try for the whole asylum.

The Mismanagement of Drunkards.† By GEORGE R. WILSON,
M.D.‡

“It is to be hoped and expected that with the spread of knowledge and education alcoholic intemperance may come to be regarded always and everywhere as vicious and

* We hope to publish a more detailed account of this process in a future number of this Journal.—Ed.

† Read at the Annual Meeting of the Medico-Psychological Association, Edinburgh, 1898.

‡ Misunderstandings and misquotation have made it desirable to enlarge upon some of the opinions expressed in the abstract of this paper which was read to the meeting in Edinburgh. There are many verbal changes as well as additions. The former are inevitable in so far as a written statement must differ from what is spoken, and the latter seem desirable because of the nature of the attention which these views have received. Most of the disagreement which has been expressed is from misunderstanding, due to the shortness of the statement which the conditions of a meeting, called together for discussion, imposed. Nothing which was said then, or which has appeared subsequently, has induced me to alter, in the slightest, the significance of what I said. On the contrary, much proof has been forthcoming that the paper expressed, however

reprehensible. It is a grievous matter that it should be lightly regarded in any quarter as a venial offence, and I should gladly support some more rigorous form of punishment for the vice of occasional intemperance than can now be meted out.

"I think the possibility of some legally enforced personal stigma would prove deterrent and wholesome if early applied.

"Inasmuch as many careless and vicious drunkards cannot be made to smart in their conscience, I believe that the infliction of corporal punishment would be useful against repeated lapses from sobriety.

"Vice should always and everywhere be punished, and the present tendency to minimise punishments is unwholesome, and indicative of a general flabbiness and sentimentalism in society which is quite unwarrantable and mischievous."*

This question of how to combat the intractability of drunkenness is one which has exercised many of us for many years, and in 1893, writing of the ill-constituted drunkard, for whom strong measures had been recommended, I used the words: "While out of justice to society it may be necessary that our treatment of him should be severe, it is only fair to himself that it should also be appropriate." That may be taken as the text of this present effort. It must be our aim to determine what kind of deterrent and curative measures are really appropriate in the management of drunkenness.

(It may seem unnecessary, but events have shown it to be desirable, to explain that, while the ordinary man knows quite well what one means when one speaks of a drunkard, physicians must at least be informed what one does not mean. By the term drunkard, as here used, I do not mean a lunatic, nor any other kind of invalid whom our courts regard as, on account of illness, not responsible for his actions. All the same there are many patients, admittedly not responsible, for whom much more rigorous moral treatment than is usual in our asylums would be found to have curative value. On the other hand, there are some who, though perhaps justly called

imperfectly, the opinion of a very large number of those who seriously study the problem of drunkenness.

Since the meeting Sir Dyce Duckworth has been good enough to remind me of his address on the subject, published in 1893, and a passage in it is so apposite that I substitute it for the greatly less authoritative quotation with which the paper opened.

* *The Relation of Alcoholism to Public Health*, by Sir Dyce Duckworth, M.D. London, Eyre and Spottiswoode.

drunkards, do not manifest the perversions and weaknesses presently to be discussed, and, in so far as they do not, the remarks which are applicable to the ordinary drunkard do not apply to these individuals. Nothing is of so much importance as that we should regard each case on its own merits.)

To determine what are the kind of ideas and the kind of measures which are appropriate in the treatment of drunkenness, we may consider a few of the many disabilities which a study of our patients' ideas and feelings and conduct lead us to regard as the characteristic perversions and weaknesses of the class.

One of these—the *loss of the power of direction*—will be considered more fully presently, and something will be said of what can be done in the present imperfect state of the law. Physicians as a whole have for many years been convinced that this defect is so great and so important that it can only be satisfactorily dealt with when powers are given to the Bench to confine and detain habitual drunkards in institutions specially organised for the purpose. It is the members of the legal and the political professions who are to blame for the backward state of the law on the subject. Their opinion seems to be that any man and every man is entitled to all the liberties and privileges of a free life until he happens to be caught in the act of breaking the law. And so the drunkard has been taught to believe that the British instinct which so carefully regards the liberty of the subject will allow him to make himself as great a danger and nuisance to society as he pleases until some chance carries him into a transgression of the law. If that were the attitude of the law towards insane persons, if no sheriff might detain a homicidal maniac until he had committed murder, if suicidal insanity must prove its existence by the act of suicide, Parliament might at least have the satisfaction of being consistent in its mistaken sense of justice. But I need not dwell upon this subject, because it is a commonplace with our profession that compulsory powers for the treatment of habitual drunkards are urgently called for. I may, however, be allowed to draw public attention to the fact that this reform is seriously threatened with delay because the Government has chosen to select the most hopeless and refractory kind of drunkards for their promised legislation. As this is more or less in the nature of an experiment, it is a pity that compulsory treatment should be perhaps held to stand or fall according as it succeeds or fails with a class made up of men and women who are the least likely to derive

permanent benefit from any kind of treatment whatsoever. It readily occurs to one, for instance, that it will not be easy to induce these people to forego their habits of idleness and indolence, and it is difficult to see how the very rebellious are to be coerced. I should therefore like to see a clause in the Bill which would make provision for corporal punishment (such as flogging) of refractory drunkards with the precautions necessary to prevent its abuse. The new institutions ought to be regarded as houses of correction rather than as hospitals or retreats. They will, of course, be under careful and periodic inspection. Any abuses of the powers given to the superintendents could be as well prevented as are abuses in asylums in matters such as the use of restraint or of seclusion, which the law allows us to use in the case of insane patients.*

One of the most obvious features in drunkenness is *self-excuse*. The victim of the habit is, even more than his sober neighbours, too prone to find excuse and not ready to accept blame. You will rarely meet a drunkard who acknowledges his vice fully and who is quite alive to his blameworthiness. It therefore becomes physicians and society to try to bring the facts of his case home to him and to offer him just as little excuse as is strictly just. The public mind is very ready to hear and to repeat anything that doctors say about diseases, and still more what we say about vices. That is the fashion of our time. A few years ago—in Scotland, at least—public opinion was much more guided by the pulpit, and then it was the inclination to be very severe and to find no excuse for drunkenness. More recently, when the subject of alcoholism came into prominence, physicians discovered some quite valid excuses for a few drunkards, and now the tendency is to offer these excuses on behalf of all. Those who are called upon to treat patients

* At this point it may be well to make clear that the physician's view of punishment must be dissociated from that of those who administer the law to ordinary persons. The latter punish as a penalty for offences committed. We must have nothing whatever to do with that view of punishment. We must put all idea of retribution far from our minds. Punishment must be used on our initiative only as corrective. If the question, for example, arises whether such an one should be flogged, we have not to ask whether the thing that he has done deserves flogging or not, we need not even ask whether he was fully aware of what he did and fully responsible for it. Our only question should be, is this person one who requires flogging, in the sense that nothing short of flogging will affect him, and it is likely that flogging will produce the desired improvement? I do not think we are justified in the use of such severe measures as a warning to others, for the physician has more regard to the individual and less to society than has the judge or the sheriff. But—to return to the point—there are some criminal drunkards who would be improved by flogging and by nothing short of it.

who are addicted to alcoholic excess must feel how serious this difficulty is, and especially those who are at once engaged in the treatment of insane persons and of drunkards. We have learned too well the lesson which our teachers had need to teach us—that the mental and moral symptoms of insane folks are quite as much the results of physical impairments as are their paralysis or their convulsions. And now, when we come face to face in the wards or in private dwellings with alcoholic patients who, perhaps, have bodily symptoms which mask their vice, we too readily forget that the law still regards them, and that society rightly ought to regard them, as responsible for what they say, and think, and do; for the more a man's sensibilities are blunted by the nervous impairments which his vice has brought on, and the more remote he is from ordinary incentives and ordinary discipline, the more need have we to devise measures which may be extraordinary and unusual, and which may also be severe, provided always that they are appropriate, that they are calculated to cure. The same determination which taught the surgeon to amputate in many cases which long ago would have perished because opinion was too ignorant or not daring enough must inspire us to discover how to deal with vice which may have become mixed up with disease.

One excuse we have given the drunkard by our too indiscriminate belief in the importance of heredity. It would be out of place to discuss that question abstractly here. To do so would be to raise an almost purely academic discussion; for, having regard to the fact that the environmental factor is almost never eliminated in those cases which are quoted as proving the first importance of heredity, I differ widely from current opinion on the subject. But granting, for the sake of argument, that a tendency to drunkenness is inborn in the offspring of drunkards much more than in the children of the sober, what has society gained by the information? The drunkard has learned his part of the lesson aptly. He has readily grasped the fact, and makes use of it, that this teaching gives him an excuse for his vice. From the time that he learns that some one of his forebears was a drunkard he begins to regard himself as a victim of an unfortunate law of nature—an object of pity rather than, as he ought to be, an object of scorn. Also our teaching has done considerable harm in its suggestion to the sons and daughters of drunkards. I speak from observation and not at random. Several cases occur to me which prove that young people who have a drunken

family history are, to their hurt, taught to expect that they will likewise become drunken. One striking case came under my notice recently. He is a man nearing the prime of life, several of whose relations have been drunken even to the point of death. For thirty years he has been sober in a very tempting environment. Now at last—from sheer carelessness and foolishness, as I take it—he has begun to drink to excess. It is what the well-informed among his friends have taken for granted all along. It has been at the back of his own head all these years that he was expected to go to the bad, and, more than that, he knows that his family history will be regarded by society as his excuse. Our teaching should be all the other way. A bad family history is a good excuse for total abstinence: it is no excuse at all for promiscuous drinking. It would be quite as sensible if a man who slept in a ditch explained his illness by a reference to a rheumatic or a phthisical family history. A person who has any such idiosyncrasy should be guided and corrected with greater severity, and not with less, than the normal individual. Let us impress on such an one as strongly as we can how important this matter is for him. Let us warn him that there will be no excuse for him; but let us not be so misguided as to tell him that he is likely to become what his father became because there is something in his nature which makes for drinking. Let us tell the son of a drunkard that he must not touch drink until he is twenty-five years of age, and let his guardians in his youth flog him severely if he does. If he is going to drink, let his beginnings be as carefully made as when we begin to administer any drug to a patient who is supposed to have an idiosyncrasy for it. If a medical man were invited to observe the effects of such a youth's first taste of alcohol, and if all his early drinking were carefully watched, the risks, such as they are, would be greatly lessened.

Another plea which drunkards use with great effect, in Scotland at least, is what I have no hesitation in calling the myth of the "crave" for alcohol. I know no better illustration of the evil of what one may call the gossip about medical facts for which the public are so greedy. Cases of a real crave have, of course, been described, and are a very interesting fact. But ever since someone wrote of the man who cut off his finger in order to get the brandy which he knew would be prescribed, and of the schoolboy who wore his fingers to the bone in midnight excavations towards his master's cellar, nearly every drunkard in Scotland has been credited with a

crave. For my part I have never seen a case which exhibited what I would dignify by the name of an alcoholic crave. That it exists there can be no doubt. But its frequency has been enormously exaggerated. Very many alcoholic cases suffer from a gastritis which their habits have induced, and the discomfort of which they call a crave for drink; others have induced a disorder of the lower nervous mechanisms which gives rise to a want of the normal feeling of well-being. Let us then teach that a crave is really nothing to boast of, that only ill-constituted persons and those whom showmen call "freaks," ever have it. Let us treat the digestive disturbance by a blister over the stomach, and let us apply a very stimulating plaster over the spine to relieve the feeling of malaise, and 99 per cent. of the craves in Scotland will disappear.*

Disturbances of the functions of control are prominent characteristics of drunkards. The habit which they have acquired is one of very general effect. Intoxication is a state which invades the whole realm of consciousness in greater or less degree. Repeated acts of intoxication, which we designate as a habit of drunkenness, lead to cerebral changes which affect the whole mind. Memory, judgment, reason, imagination, sentiment, all become modified both by the effect of the drug on the brain substance and by the

* Many people seem to have some difficulty in understanding what we really mean by a crave for alcohol, and why it is not true that every one who wants a drink may be said to exemplify it. But there is no very great difficulty in the subject. In an act or choice, and in a habitual act or choice, there is, on the one hand, desire or impulse, and on the other direction or control. The act may become automatic and ungovernable, either because of excess in the desire or impulse (as in a man who has been for days at sea without water), or because of reductions in the functions of control. In nearly all drunkards it is the control which is at fault. That is what Hughlings Jackson calls the primary or negative lesion. It is in the nature of a want. The drunkard takes to drink immediately he feels wrong, not because he has an excessive susceptibility in the part of his brain which represents drink, but because he has closed the avenues of other lines of conduct; he has shut the door on his freedom of choice. The excess of sensation which constitutes a crave is of the nature of a hypertrophy or overgrowth in the organs of sensation, and it is extremely rare. An alcoholic crave proper is characterised by its exclusiveness; nothing but drink will satisfy it. It is generally periodic, coming on at stated intervals. It is due to a peculiar nervous constitution, and not to disorders of the bodily organs. It is generally idiopathic, and not induced (though it sometimes follows severe injuries); that is, it is usually a development of the man's original nature, like a taste for music or an extraordinary interest in colour. As a rule it manifests itself not later than the end of adolescence, and is of irresistible intensity whenever it has realised itself in the taste of alcoholic drink. So one need hardly add that all states of general restlessness and excitability are not a crave at all, but primarily due to impairments in the functions of control.

functional changes in structure which follow from a prolonged subservience to any one interest. Most of all, the will—the function of rational choice—becomes seriously limited. The drunkard's will ceases to be as free as that of a man who has been moderate. The disability of which I wish particularly to speak may be called a *loss of the faculty of direction*. In business, in social and in domestic relations, the drunkard is incapable of behaving wisely and of ordering things aright. Yet we find it an almost invariable rule that, because of his gift for making things unpleasant, he is allowed to have even more of his own way than are those who behave properly. It seems to me quite the most immoral effect of drunkenness that it leads to the complete demoralisation of the home. Be the drunkard father, or son, or brother, all the domestic arrangements are suited to his perverted tastes. People wait up for him far into the morning hours, meals are kept late, every one else is put to discomfort in order to please him. Worse than that, the whole household must learn to shield him, to deceive, to pretend, to lie, rather than admit the facts of the case. This is a mistake for which, of course, the friends are most to blame. It is natural to them, especially to the more tender and sympathetic sex, to sacrifice both their comfort and their consciences to the erring member. But we doctors might inculcate a better way. I do not know what is the general practice in such cases. But when I am asked to treat a drunkard at home, one of the first things I insist on is that there shall be an end to all pampering of the patient. He must be plainly told that he has clearly demonstrated his unfitness to direct his own life, much more his incapacity for the headship of a household. He is by habit over-exacting; he must be prevented spoiling other lives. He is already too self-indulgent; he must be compelled to accept unpleasant things. He is irregular and unpunctual; he must take things when they are due or go without them. He is unkind, inconsiderate, cruel, and sometimes brutal and violent; he should be ignored until he learns to give as well as to take, and if need be he must be cut adrift or forsaken. In short, the mother or father, the wife or sister, the brother (who by the way less often needs the instruction) must be instructed how not to deal with a prodigal in the time of his prodigality. For the fatted calf, which suits the repentant home-comer, is most unwholesome food for the incorrigible and impenitent.

This question of shielding the drunkard and practising

deceit and lying on his behalf is a difficult and important one. An obvious disability of the drunkard is his *want of a sense of sin*, and a great dishonesty about his vice. I am convinced that it is largely due to impairment of memory. He does not recall the facts of his intoxication; he does not remember how often or how much he has been drinking; he has a very imperfect recollection of the various acts of misconduct to which his drunkenness has given rise. Whatever the reason, the fact remains that the drunkard does not appreciate the badness of his case. That is one of the greatest difficulties in treatment, and it wants careful consideration. It is, again, a symptom to which the relatives pander by their management of the case; and we are called upon to point out the mistake of shielding the patient from the ignominy and other unpleasant effects of his vice. This is a good example of what I mean by saying that the drunkard, by reason of his disabilities, requires more, rather than less, severe treatment than an ordinary offender does. Any ordinary bad habit need only be mentioned, and the offender will think upon it for days; the word of correction will rankle in him; the subject will be a tender one for a long time, and will be avoided by anyone with tact and generosity. But generosity is quite out of place with the drunkard, and to spare his feeling is to do just the worst thing possible. All the evil and the danger of his vice should be brought forcibly home, not in a petty way, but in a manner which will be impressive and permanently convincing. I believe that a great step to the reformation of any drunkard would be taken were he persuaded to admit publicly—that is, to make no secret of it in society, that he had been addicted to the vice. And if he will not do so himself, the next best thing, in my opinion, is that his friends should expose him. Let the publicans be told the facts of the case, and let a careful statement be made to relatives, friends, and casual acquaintances in the nature of a warning that the patient must not be encouraged to take drink. Let it be understood that it is a shameful thing to offer drink to him, or to drink with him, and let us have no hesitation in saying what we think of those who encourage him. There is no question of ill feeling at all towards the patient when we insist that he shall bear the full brunt of the consequences of his drunken acts and that they shall be exposed rather than concealed. It does not matter who calls such treatment cruel or barbarous, provided only that it induces the patient to take thought and mend.

The feelings of relatives are the chief barrier to such a method of managing drunkenness. If the truth were told they need have little scruple in acknowledging the facts; for, as a rule, the patient's habits are known to all his acquaintances, and, moreover, there is nothing at all exceptional in having a drunken relative. There are very few people who have not some such acknowledgment to make concerning near or distant kinsfolk, and we may safely rid our minds of the idea that vice in one member of a family implies evil potencies of an extraordinary kind in each of the other members.

The difficulties of managing a drunkard at home follow him to any institution where he is sent for cure. Not only do the disabilities of the patient prevent successful treatment, but the mistaken kindness of relatives is also in the way. People are anxious that the poor man should have plenty of amusement, whereas one wishes him to learn how not to be amused. He is of idle habit, but he and his people seem still to think work unnecessary, if not an injustice. For years the man has been a slave to his palate and to his appetites, but his friends are still very anxious that he should be richly fed. He has made a long practice of the art of lazy comfort, and still it is expected of us that we should provide a lap of luxury for him such as might be fitting for a worn-out and conscientious martyr to good works. To be appropriate, it seems to me that institutions for drunkards should teach habits of regularity, hard work, and forgetfulness of bodily states, except in so far as is necessary to health. A well-conducted monastery would be a good place for a drunkard, or such a *régime* as used to be prescribed for an athlete about to undergo a severe trial of his powers. Similarly, his mental state should be treated so as in every way to induce him to see the nature of his vice, to realise his weakness of will, to sink his own selfish desires, to rid him of self importance, self pity, and self confidence. Meanwhile drunkards would not stay in such a place, and the law says it is wrong to compel them. The public also will not stand views so severe, and would condemn anyone who tried to put them to the test.

Now and again one comes across relatives who have the sense and the courage to coerce the drunkard into obedience. Nearly all who become addicted to drink become cowardly; but most of them are at the same time either of a bullying or cringing manner, and it really requires a great deal of pluck, especially on the part of wife or mother, and a great deal of resolution, to deal wisely with them. On several occasions,

and sometimes with excellent results, relatives have been persuaded to intimidate the drunkard into obedience. One wife I remember who was told by her husband that if she rebelled against what was considered good for her the house would be shut to her, and her children denied to her; the police would be instructed to take her in charge if she was importunate in her attempts to resume her place in the family; public repudiation of responsibility for her debts would be made; relatives would be instructed as to the facts of the case, and requested not to acknowledge her or give her any assistance; and, if need be, her acquaintances and neighbours would be informed as to her habits, and the reasons for the treatment proposed. In the case of husbands I have advised similar measures; and especially in the case of young men who have an employer, men who hold public offices, and those who have farms, &c., on lease, the further step has been taken of enlisting the employer or landlord in the attempt to coerce the drunkard. It is also of value to let it be understood that business men and others will be told the truth about the patient, should they think of giving employment or other assistance.

When such things are threatened—and it should be done in the form of a letter from a law agent—it need hardly be said that the drunkard may generally be trusted to choose the easier course, and to comply with the demands of relatives. He is generally a coward, and his fear of public opinion, the dread of inquiry and exposure, as well as the occasional lingering affection for those who seem about to abandon him, induce him to acquiesce. But it may be added that, if the drunkard can be proved so, and if he resist such steps as have been suggested, even to the extent of going to law, the law, in Scotland at least, is largely on the side of those whom he has wronged.

What can be done by spiritual ministrations for the victims of the alcoholic habit it is not for me to say. We are all familiar with cases of complete and permanent reformation following a religious experience of an impressive kind. As was said in the eloquent speech by the clerical guest at the dinner of the Association, ministers are learning that there are states of mind, even in those who are still sane, which the physician can most effectually deal with, and there are cases, even within the walls of our asylums and retreats, who most require the help and guidance of a pastor. But the clergy are not without blame in this matter of too lax a view of

drunkenness. They also have learned the lesson which our too easy doctrines have taught. And if we are to call in the minister to help the drunkard, we must see to it that he is one who will not be afraid to speak the truth as his religion teaches it without any importation of mildness from medical and scientific doctrine. The teachings of the great Calvin, whom we might call relentless in his views of sin and in his practice, who more than "shared the common opprobrium of all European Christendom" in prosecuting Servetus to the death for blasphemy, who regarded all men as born to condemnation because of innate sin, who refused to entertain any hope for any man, however unfortunate, except he repent and be regenerated and sanctified, who would regard all constitutional disability as a warning and a danger but never as an excuse—such a teacher has scant support from the compassionate and easy-going doctrines of to-day. But in so far as modern teaching repudiates moral responsibility because of "flaws in the flesh" or "taints in the blood," it is an instruction which is only harmful to the victim of vicious habits. Here again we have a good example of the necessity for exceptional severity in that, while a more mild theology may be best for the man of ordinary uprightness, it takes something like the fear of hell or of the pains of purgatory to convert a drunkard instantly and for ever from his sin.

The subject is endless, the side issues are without number. It is not to be supposed that one can lay down a law for all sorts and conditions of drunkards. But at least we can indicate a point of view and a method which will determine the general lines of treatment of usual cases, and which can be modified in detail to suit the peculiarities of the unusual. I would reiterate the text with which I began—that we must see to it that, in our severity, our treatment of the vice is appropriate. The only criticism which is important is that which says that this does not effect the end in view—to induce a sober life. For years we have taught that vice is partly a disease, and I do not for a moment repudiate the general doctrine. But it is not enough to discover the disease, or even to give it a name. Let us caricature the situation and suppose that our able pathologist has discovered that sin is a specific disease. He has made cultures of the germ, and he finds that, when he inoculates others, all the characteristics of the disease are forthcoming. What have we gained unless the pharmacist or the bacteriologist devises a drug or a serum which will make the sin germ of no effect? Let us call vice disease if

you will, let us say that we are only treating symptoms when we try to reform the drunkard ; but, until we have got at the root of the whole evil, and have discovered the treatment effectual for it, surely it remains true that a specially strong discipline is required for a specially weak nature.

We shall be told without fail that, in promulgating such views as these, we are going back upon the scientific view of vice which a generation of wise physicians have propounded. One may be pardoned if he think, on the contrary, that he is going a step further. In the beginning of this century drunkards were probably of very much the same nature as they are to-day. But, at that time, they had not been carefully observed by medical men, and they were not understood and described as they are now. We have certainly learned a very great deal as to the causes and the conditions, the nature and the effects, of drunkenness. But surely no one will claim that we have made proportionate advance in the treatment of it. Excluding those who arrive at the stage of insanity or other malady which necessitates asylum or hospital treatment, drunkards are in as hopeless a position as regards cure as they were fifty years ago. This is to be accounted for, I believe, by the fact that, having put the vice on a scientific basis, and having demonstrated its neuropathic relations, we have stopped there, forgetting that after all it is the moral functions which are chiefly impaired, and that therefore strict moral treatment is called for. In our analysis of the physical causes of drunkenness we have discovered the importance of heredity, of a constitutional susceptibility to alcohol, and of other factors which predispose to excessive drinking. It is high time to deal with these factors seriously and vigorously. And in our analysis of the drunkard's state of mind, in so far as we find him defective in shame, in honesty, in self-respect, in respect for others, weak in memory, foolish in judgment, silly in imagination, blunt in his affections and impotent in control, surely, whatever be the physical impairments which accompany these symptoms, it is sound therapeutics to take active steps to arrest the intellectual degeneration and to re-establish the moral functions.

Discussion.

Dr. STEWART (Clifton) made bold to enter the lists with such an excellent authority as Dr. Wilson because he thought it was a dangerous thing if an association like theirs should in any way countenance the opinions he had formulated, or go back from the position that he believed medico-psychologists had hitherto occupied in regard to the subject of inebriety. He had been the unhappy victim of an

onslaught by one of the giants of this Association, Sir John Bucknill, who said that he (Dr. Stewart) was a faddist; that he was one of those who would fain ignore the vice of drunkenness. When in this city the Medico-Psychological Association discussed the definition of insanity, Sir John Bucknill was one of those who was most in favour of the simplest definition, to the effect that it was a disease of the brain which had gone so far as to affect the mind. He asked in what way he was a visionary if, similarly, he asserted that inebriety was a disease of the brain which had gone so far as to affect the will power. He wanted to know in what way Dr. Wilson's arguments would help them as physicians to deal with an injured brain. If they sanctioned such "Calvinistic" treatment, if they gave it any support, they would be putting the hand back years and years, and would discredit the name of the Association.

Dr. CLOUSTON said that they needed some such talking to as Dr. Wilson had given them, and he trusted that what he had said would be spread abroad, and would take hold of the medical profession and the general public. There was no doubt whatever that they had to some extent lost sight of the true nature and right treatment of some early cases of drunkenness. In reading some books on the subject one got sick of the mawkishness, the want of vigour, the absence of any real scientific method. They had something different from Dr. Wilson. He did not say that he agreed with everything which Dr. Wilson had said, but he affirmed that they required some such vigorous ethical statement in regard to the treatment of the man who had thus lost his self-control. There was no doubt that the medicine they required for the early drunkard was not to be poured out of a bottle, but was to be brought from some such laboratory as Dr. Wilson had indicated. He had no hesitation in saying that a number of the persons who became disgraceful inebriates had at one time passed through a stage when they might have been saved if they could have received such treatment as Dr. Wilson had recommended. He had watched the effect of it on men who had begun going on the down grade. He had appealed to such a man for the sake of his honour, for the sake of his wife and family, and he had said, "You are going to lose your income and to fall into social disgrace. For my part, I shall have nothing more to do with you if you do not at once reform"; and he had seen the man reform out of pure fear. The ethical point of view was in no way inconsistent with the medical, which regards the man as weak, wanting in courage, inhibition, and other moral qualities from a brain defect that will soon become a disease. He most heartily sympathised with the greater part of what Dr. Wilson had said, and thanked him very heartily for his admirable paper. If it did not cover the whole ground it hit the nail on the head in regard to many cases. We must in medicine apply the physic that will cure, no matter how strong it may be.

Dr. RAYNER said that it seemed to him that Dr. Stewart was wrong in looking at disease as an entity, which it certainly was not. Disease was only abnormal physiology, and therefore the treatment of a child diseased and the treatment of a person who begins to get diseased were to be dissociated. In practical experience what Dr. Wilson had said, and properly said, in regard to the point was often borne out. He remembered a very striking inebriate case who laboured under hallucinations. One medical certificate was signed, and he (Dr. Rayner) was sent to complete the second. Rather than go to an asylum he promised that the man would attempt to control himself. After removal from his pernicious surroundings he did control himself, and had continued master of himself ever since. He (Dr. Rayner) had also been very much struck with the rarity of the "drink crave."

Dr. CONOLLY NORMAN agreed with a great deal that Dr. Wilson had said, but he could not approve of his "Calvinism." He thought that was about the worst possible solution of the difficulty; not Calvinism, but casuistry was the true guide in dealing with drunkards. It was the treatment of the individual case that they were chiefly concerned with, and not the laying down of hard and fast principles, chiefly inapplicable when they came to deal with men and women *seriatim*. He came from a country where they heard so much of high principles that he did not hesitate to say that he had no principles at all; or if he did possess any principles in

the treatment of drunkards he was extremely inconsistent in carrying them out. He thought inconsistency in the present state of their knowledge was the truly scientific attitude. He himself, taking certain risks, occasionally told a man that he would not let him out of the asylum until he had taken the pledge. The pledge was generally taken, and sometimes kept. He could not quite agree with Dr. Wilson on another point. He had talked of the sense of right and wrong being absent in drunkards. No doubt on the whole he was right, and there were great numbers of confirmed drunkards who had lost their sense of right and wrong. That did not help them much in dealing with early cases. The backslider who was constantly conscious that he was giving way appealed to them to help him; the speaker at least saw such cases frequently. He often saw drunkards whose sense of right and wrong seemed to be as acute as any one's, and entailed the greatest mental suffering. He supposed that when Dr. Wilson referred to flogging it was meant as one of those pleasant elaborations which served as sauce to season the argument. He would be afraid of the ensuing delirium traumaticum, erysipelas, death, coroner's jury, which would follow on its application in real earnest. He did think, however, there was a great deal of truth in what Dr. Wilson had said in regard to heredity. It had become such a gigantic generalisation that it included everything, and so included nothing, and left them hopeless of progress. They heard a great deal about the heredity of drunkenness; because our grandfathers drank too much, therefore we were bound to be drunkards. The absurdity of this kind of twaddle is apparent, and the more they discouraged it the better for the world. They should encourage drunkards to think, what they all needed to remember, that "man is man, and master of his fate."

Dr. MACDONALD (New York) said he had been very much interested in the paper. They had gone through all the stages of treatment of drunkenness as a disease in America. The hospital system had been abandoned on account of its weakness and failure, and the fact that the patients could not be so detained after the early stages of recovery. These hospitals consequently became refuges for drunken husbands or wives, or those whose relatives wished to keep them out of the public view. He thought that the solution of the question was to be found along similar lines to those which Dr. Wilson had suggested. The change which had come over the popular treatment of drunkenness was more effective than any other agency. The feeling on the part of the people, and especially on the part of the women, that drunkenness would not be tolerated now as it used to be, that it was not so excusable as it used to be, had done more to bring about the change than either medical treatment or absolute compulsion.

Dr. McDOWALL (Morpeth) said he agreed with Dr. Wilson. In their treatment of early cases of drunkenness their present method was altogether absurd. Men were taken up to the police court and fined a paltry sum, and with a hardened sinner that soon became a farce. If these men knew that they would have a very sore back every time they got drunk instead of being fined half a crown, they would very seldom go into the public-house. They ought to have recourse to corporal punishment, and he certainly approved of a vigorous treatment of drunkards.

Dr. HAYES NEWINGTON held that what Dr. Wilson had said was partly true, and what Dr. Stewart had said was partly true. There were some cases of drunkenness which were not pathological, and there were other cases that were undoubtedly pathological. What was a drunkard? A great many men went to the public-house every Saturday night, and there misspent their wages. Were they drunkards? How much was a man to drink before being thought worthy of corporal treatment? All the whipping in the world would not save some of them. They all knew drunkards who had cast happiness to the winds. Again, how were they to deal with the head of a household, who held the purse and created physical fear? Flogging could not be the remedy there. No amount of flogging could cure those cases, known to all doctors, who lived like decent Christians for some months, and then without apparent cause, though with absolute regularity, wallowed in drink like pigs, until, having satisfied their impulse, they again became decent. The difficulty of dealing with a subject of this kind lay in the definition.

Dr. YELLOWLEES said that Dr. Wilson had mixed up two totally different classes. The ordinary drunkard was often a mere scoundrel, and ought to be punished accordingly. He did not come within their province as physicians, but a great deal of what Dr. Wilson had said applied solely to him. The man who deliberately made a nuisance of himself, and caused his friends and neighbours to suffer, ought to be punished; and corporal punishment ought to be awarded to a great many others besides drunken scoundrels. Why were there such cases in Mavisbank at all? That was not a place of punishment. If they were not cases of disease, it seemed extraordinary that they should be sent to Dr. Wilson's care. He had laid down the extraordinary principle that the more a man's nature was blunted and perverted the more severely they must deal with him. None of them could accept such a principle. Dr. Wilson would not act upon it himself, and he was very sorry that Dr. Wilson had thus mixed up vice and disease. Then he told them that he never could recognise the crave for drinking. He did not understand that statement—unless, of course, there was no brain disturbance at all. The habitual drunkards, who had weakened their nervous system so far as to come under medical care, had periodical attacks, when they became restless, sleepless, irritable, troublesome, unable to settle to employment, quarrelsome with their neighbours, and in such a state that one knew that they were longing for liquor, and that if they were within the reach of their special temptation they would at once succumb—these cases were familiar to all of them. And yet Dr. Wilson said that he had not seen the crave for drinking. He was quite sure they must treat what he had described as phenomena of disease, and not as mere vice which could be cured by flogging. They all knew that drunkenness was terribly hereditary; but it was entirely a new doctrine, and one that he must deprecate, that they encouraged the evil when they pointed out its bitter and disastrous results. It was quite true that the friends of patients were foolish in that respect. They encouraged him, and comforted themselves by saying, "Poor fellow, he can't help it." A great deal of Dr. Wilson's paper was addressed to such foolish friends, and would do them infinite good if they would act on the wise principles he laid down. But when told they were not to say to the son of a drunkard, as he (Dr. Yellowlees) had said many a time, "You must never touch intoxicants; see what they have done to your father," because it would be an encouragement to drinking, he could not agree. There were cases of moral deterioration which were the gradual result of drunkenness, or the result of brain disease irrespective of drunkenness, or complicated with it. For such moral degeneration this treatment by punishment—why called Calvinistic he did not know—could not result in any good; rather the reverse. Coercion and intimidation, he thought, were often quite useless. They might threaten whatsoever they pleased to a degenerate drunkard, and he would not care. Moral reformation could only be attained through moral regeneration, and self-respect and self-control were not produced by punishment. Dr. Wilson had expressed vigorously and earnestly what many of them felt, especially in regard to the friends of drunkards, but he did not make the necessary distinction between the scoundrels and those whose moral deterioration must be attributed to disease. It was a distinction which certainly existed, though often exaggerated and abused, and he should be sorry if that paper went forth with the imprimatur of the Association.

Dr. CARLYLE JOHNSTONE could not say, and he did not suppose that any of them could say, that they were prepared to agree with Dr. Wilson's principal conclusions; but with his general maxims he expressed his sincere sympathy, and to a great extent his concurrence. In the end of this nineteenth century there was a great deal too much of spurious humanitarianism, which received directly or indirectly a considerable amount of support from the medical profession. While as physicians they had to minister to disease, their first duty was to minister to the community, to protect the commonweal; there was too much of pampering and cherishing a man's weakness and sin, and too little exhortation, admonishment, and chastising of the sinner. Dr. Wilson would admit sin required treatment, and punishment was the proper treatment of sin. Dr. Wilson had given them a good word in calling it

Calvinistic treatment. The President had quoted a saying to the effect that murder might be a disease, but hanging was the cure. He thought that drunkenness was a disease, and that occasionally flogging was the cure.

Dr. CLAPHAM said that although the will was not free, action was free. They could not help willing to do a thing; it was the action that had to be dealt with. As regards the treatment of vicious drunkards, a Yorkshire magistrate had effected considerable improvement in his neighbourhood by saying to the prisoner before him, "You will be fined so much this time, and you will be sent to prison for so many days if you do not abstain for such and such a term." Although they did not define a drunkard, they all knew a drunkard when they saw him. He approved of measures of a drastic character.

Dr. HISLOP (Pietermaritzburg) said they had experimentally tried homes for the treatment of drunkards in South Africa. So far detention in these institutions had not been compulsory, and the institutions had been failures. They had been considering whether they should have a portion of his asylum set apart for inebriates, and he thought that would not be a bad plan. The South African Medical Society, however, unanimously resolved that the various Governments should be advised that separate institutions should be established for the compulsory detention and treatment of inebriates.

The PRESIDENT said that when a member brought a strongly opinionative paper to a meeting of the Association he was apt perhaps to occupy a somewhat extreme position, but there was nothing which elicited a better discussion than bold, crisp views, which caused them to consider if after all they were right, and to give reason for the faith that was in them, although, on the other side, in reply, they too might say more than they intended. He did not think that the last word had yet been said on the preponderance of vice or disease in habitual drunkenness. It had been begun, as Dr. Stewart reminded them, by Sir John Bucknill, who made a strong speech as to the vicious nature of drunkenness at a temperance meeting at Rugby. Dr. Clouston went over a number of cases in Morningside, and showed that a great proportion of them were hereditarily insane or hereditarily alcoholic, although he admitted that there was a number who were primarily if not entirely vicious. Sir John Bucknill took a somewhat extreme view, recognising very few cases of true dipsomania; and they must all feel that in his strong common sense he was largely right. It fell to them in the actual practice of their profession to advise in regard to affairs not entirely medical, and so they might have to aid in the treatment of vicious drunkards; but in his experience they had also to deal with a large residuum of insane drunkards—persons who were first of all insane, and afterwards drunken. It was often most difficult to discriminate between these classes in regard to individual cases. He himself was very strongly of Sir John Bucknill's and Dr. Wilson's opinion, that there had been too much nonsense promulgated in reference to vicious drunkards, as he had stated in his address from that chair. He did not wish to detain them with theological arguments, but he wanted to say a word on the great Calvin, who constructed a logical system of theology which hung together from the first to the last statement, and which was based upon the conception of the inevitableness of human destiny and the innate moral corruption of the race. Now Dr. Wilson asked them to adopt "Calvinistic" treatment, and yet he denied that the doctrine of predestination applied to drunkenness. They could not break with Calvinism in one particular only, nor could they shut their eyes to the inevitable doom of so many habitual drunkards, whether they were considered from the point of view of Calvinists or Psychiatrists. If they were going to use Calvinism as the hangman's whip to keep the wretches in order, they must also use it in the full knowledge that it predicates a state of matters in the individual which has been preordained from all eternity. Calvinism was not responsible for what had been suggested to-day. It was a vulgar error to speak of it as the doctrine of eternal damnation. There was far more in John Calvin than that. [Dr. McDOWALL: Far more than that.] He could not subscribe to Dr. Wilson's theology; still less could he subscribe to his psychology. What they had got to deal with was the person.

Those unfortunate persons who were to be treated with such summary vengeance were so often the darlings of somebody—of somebody who would shield them from fresh disgrace, whatever philosophic advice might be tendered. The President went on to describe the discipline of the prisoners in Elmira Reformatory, and showed that even these incorrigible offenders were protected from flogging by public opinion, except in the extremest cases. He did not believe for a moment that this country would authorise the flogging of drunkards, habitual or occasional. It was plain that unless a man had done something of the nature of robbery with violence, unless he was guilty of the gravest forms of crime, he would escape the degradation of the cat. He felt assured that the Association would not subscribe to that proposition of Dr. Wilson's—(Hear, hear)—nor would they, he thought, approve of his system of "intimidation," partly, no doubt, because of its inherent weakness in threatening what the drunkard already lived in fear of—the results of his vicious conduct; but still more because they could not be assured that the suggested threats would be put in force or prove in effect successful. They in asylums found difficulty in replying to patients who made a wrong use of the Bible. "Here," say the melancholics, "in this chapter and in this verse is my condemnation." Were they, therefore, to argue that the Book of books was to be abandoned in asylum life because some of their patients made a bad use of it? What they had got to reply in these circumstances was that they were mistaken in regard to their opinions, and that they must refer to passages of larger hope. And similarly, if medical doctrines of heredity and of insane irresistible impulses are misapplied, it is their duty to point out opposing opinions founded sure on experience. In treatment of the early stages of habitual drunkenness they had been too lax as a nation. When they considered the vast and increasing influence of "the trade," by reason of that influence greatly, and by their own inability as a profession to exercise that amount of political influence which they ought to have, medical men had not done what they ought to have done and what they might have done to deter the inebriate from entering on his vicious career.

Dr. WILSON, replying to the discussion, said he had spoken in no spirit of levity, but had really expressed views which were uppermost in his mind as he went about among the drunkards under his care. He was particularly sorry that Dr. Yellowlees had misunderstood him, and could not remain until that stage of the discussion. There were two or three points which Dr. Yellowlees quite failed to appreciate, no doubt because he (Dr. Wilson) had felt constrained to speak hurriedly to save time, and had been compelled to present his paper in the form of a brief synopsis. He should never think of desisting from saying to certain persons, "For God's sake don't you touch liquor." But to say to the son of a drunkard, "There is a great chance of your becoming a drunkard," or to say to him that drunkenness was hereditary, was, in his mind, quite wrong, although this was promulgated in their writings and sometimes uttered in the consulting room. Regarding the "crave," all he meant to say was that the "crave," as they understood the word, was exceedingly rare. That he adhered to. When he spoke about drunkards he was referring to patients who came to them as so-called habitual inebriates not on account of insanity, but because, as he believed, they had got into the class of "blackguards." They had wrecked their homes and shattered their health. He did not for a moment refer to the insane in Mavisbank. In reply to Dr. Stewart, who said that he (Dr. Wilson) was going back from the position that drunkenness, or inebriety, or alcoholism was a disease, he, on the contrary, was one of those referred to by Dr. Clouston and Dr. Norman who had contributed to the mawkish literature of the disease in question. They had been writing and talking about the disease of drunkenness. Now let them have the therapeutic side. It seemed to him that the lesion was largely connected with the mechanism of the initiative. The drunkard had not vigour or will in new and right directions. Dr. Stewart would agree with him that that was due to some sort of degeneration of the centres of the higher will, whatever that might mean. There was no part of the brain which was isolated, and there was a reflex action between these higher cerebral centres and the skin which

might be excited by flogging. If a drunkard could not of his own free will go out and do his morning work, that was, he held, the true therapeutic for criminal drunkards. It was said in the debate that harsh measures could not apply to the head of a family, but he had seen them effective even in the case of him who held the purse and dominated the household. With reference to what the President had said, some of his observations had expressed exactly what he (Dr. Wilson) desired to combat. The President said he had no doubt whatever that there were cases of marked hereditary alcoholism when the patient was foredoomed to drunkenness and failure in life. It might be so, but he (Dr. Wilson) held that that was not the attitude for them to adopt. To set forth a conception of the hereditary factor in disease which some authorities believed to be false, and to say here is a disorder which is due to devolution, and here is an unfortunate victim of abnormal degeneration, was wrong. He did not think they had any right to say to any man that he is born to be a drunkard.

*The Normal Histology and Pathology of the Cortical Nerve-cells (specially in relation to Insanity)** By W. FORD ROBERTSON, M.D., Pathologist to the Scottish Asylums; and DAVID ORR, M.B., C.M., Assistant.

It was originally our intention to cover the whole ground of the pathology of the cortical nerve-cells in relation to insanity. But in the course of our more recent investigations we have been strongly impressed with the fact that there are certain as yet little known, but very grave fallacies, into which investigators in this field are in danger of running; and it seemed to us in the first place imperative to clear these up before formulating conclusions regarding the relation of cortical nerve-cell changes to insanity.

We shall therefore now deal only with these fallacies, with the occurrence of chromatolysis, varicose atrophy of the protoplasmic processes, and varicose hypertrophy of the axis-cylinder process in acute insanities.

We must first, however, briefly refer to present opinions regarding the normal structure of nerve-cells, and to the experimental production of the above-named lesions in these cells.

Normal Structure of the Nerve-cell.—The theory according to which each neuron or nerve-cell is a separate unit, communicating with other neurons only by contiguity of processes, and never by continuity of them, though it continues to be opposed by Golgi and others, is still maintained by the great majority of authorities. The question as to whether the

* Read at the Annual Meeting of the Medico-Psychological Association, Edinburgh, 1898, and illustrated by a microscopical demonstration.

protoplasmic processes subserve merely a nutritive function in relation to the remainder of the cell (as maintained by Golgi), or are also special receptive organs of nervous impressions, is one that is still in dispute. With regard to the appearances presented by nerve-cells in preparations stained with basic dyes, it is becoming clear that most other authorities are unable to accept Nissl's elaborate classification in all its detail as either of practical utility or warranted by the facts. Some of the terms he has suggested are, however, coming into general use. His division of nerve-cells into *somatochrome* and *karyochrome* is one that appears to have largely commended itself. In the somatochrome cells the protoplasm is well developed, and presents in preparations by Nissl's method numerous deeply stained bodies. In the karyochrome cells practically only the nucleus retains the stain, the protoplasm remaining clear. In the former group are contained the great majority of nerve-cells, including most of those of the cerebral cortex. The karyochrome cells have as yet been little studied. On the other hand, the somatochrome cells have during the last five or six years formed the subject of elaborate research by a very large number of investigators. It is now recognised that the protoplasm of somatochrome cells is composed of two different structural elements, namely, (1) the Nissl bodies (chromatic, chromatophile, or chromophile part), which stain deeply with basic dyes, and (2) the achromatic part, which is not stained by basic dyes. The chromophile part consists of elements which are generally spindle or rod-shaped. They occupy the greater portion of the cell-body, and in the large cells extend some distance into the protoplasmic processes. They are never observed in the axis-cylinder process, or in the cone from which this arises.

The achromatic part is in the processes composed of numerous distinct and exceedingly delicate fibrils; in the cell body of a network of similar threads, many of which are continuous with those in the protoplasmic and axis-cylinder processes. These fibrils lie embedded in an unorganised mass, which likewise does not stain with basic dyes. According to Lugaro and others the chromatic elements are lying in the spaces of the fibrillar network. Van Gehuchten, on the other hand, maintains that they are rather to be regarded as an incrustation upon the fibrils.

It is now universally conceded that the fibrils are the conducting portion of the neuron. Various views have been expressed regarding the function of the chromophile elements,

but the general consensus of opinion seems to be that they constitute a store of material which is utilised during the activity of the cell. The nucleus of the nerve-cell has lately been shown to have an exceedingly complex structure. As this matter is one that has no immediate bearing upon the changes to which we wish alone to draw attention, we shall not enter into it here. Suffice it to say that in sections from tissues fixed in corrosive sublimate and stained with a basic dye the nucleus of the nerve-cell presents a deeply-stained nuclear membrane, a comparatively pale intra-nuclear network, and one, or occasionally two, very dark nucleoli, situated generally about the centre.

Chromatolysis.—In 1894 Nissl described certain changes which he found to occur in the cells forming the nucleus of origin of the facial nerve after section of this nerve. To these changes, which, it has been found, can be similarly produced in other centres, Marinesco applied the name *chromatolysis*—a term which, though in certain respects a very unfortunate one, has since been so largely employed that it is not now likely to be replaced by any other. Chromatolysis implied originally merely disintegration of the chromatic elements of the protoplasm. When the term was first used the great importance of the fibrillar portion of the nerve-cell protoplasm had not been realised. Since this has been made the subject of careful study in normal and in pathological conditions chromatolysis has come to be employed in a much more extended sense, destruction of the fibrils, and also changes in the nucleus when accompanying or following disintegration of the chromophile elements of the protoplasm, being now regarded as part of the same pathological process.

Chromatolysis is seen perhaps in its most typical form in the corresponding cells of the anterior horn of the spinal cord after section of the sciatic nerve. The elucidation of the process we owe chiefly to the labours of Marinesco and Lugaro. About two days after the section the chromophile elements in the neighbourhood of the cone of origin of the axis-cylinder process begin to break up into fine granules, and to lose their affinity for basic aniline dyes. This change gradually extends to the remainder of the cell-body. In many of the cells it is followed by displacement of the nucleus to the periphery, and disintegration of the primitive fibrils of the protoplasm. In advanced stages the nucleus also disintegrates and becomes pale. The nerve-cells are not all affected equally by these changes. Many of them, indeed, remain perfectly

normal. Different degrees of chromatolysis may be seen side by side. The cells most severely affected become entirely disintegrated. Others, after three weeks or so, begin to undergo repair, and are restored to their normal state in from twelve to fourteen weeks from the time of section of the nerve.

Changes of an essentially similar kind, though often differing in many particulars, have now been shown to occur in the nerve-cells of the cord or brain in a very large number of different forms of poisoning produced experimentally. They have also been observed after ablation of certain organs, in experimental anæmia, inanition, artificial elevation of temperature, deprivation of sleep, &c., as well as in numerous affections of the nervous system in the human subject. In such cases chromatolysis may be partial or complete; it may be peripheral, perinuclear, or diffuse; it may involve the fibrillar portion of the cell, or leave it intact; and it may or may not be accompanied by changes in the nucleus, either in the form of displacement or disintegration. Lugaro, who has been the pioneer in the study of the morbid changes affecting the fibrillar portion of the nerve-cell protoplasm, believes that, while the alterations of the chromatic part are reparable, those of the fibrillar part are irreparable. Alterations of the nucleus are, he says, the last to occur, accompanying only the more grave alterations of the cytoplasm. He thinks it is probable that they are only determined when the resisting power of the cell has become exhausted. These conclusions, deduced from careful and laborious experimental observations, have, as we shall presently point out, very important bearings upon the pathology of nerve-cells in relation to insanity.

Varicose Atrophy of the Protoplasmic Processes.—The pathological value of many of the changes which have been described by various observers as recognisable by means of Golgi's method, has lately been seriously questioned. The observations of Hill and others have shown that the absence of gemmulæ in such preparations is not necessarily a pathological change. Lugaro,* who has all along expressed doubt as to the pathological character of the slight changes, such as swellings in the form of a rosary, recognisable by means of Golgi's method, has recently taken up a much stronger position in regard to the question. He says that personal experience has rendered him still more diffident regarding the

* *Rivista di Patologia Nervosa e Mentale*, 1897, f. 2.

value of these varicose atrophies. He states that he has been able to prove that such varicosities can be produced in enormous quantities by imperfect fixation, and that he thinks that it is also probable that mechanical maltreatment of the pieces of tissue, and even short action of the air upon them, are able to produce similar modifications. Even in normal preparations, treated with all possible precautions, he has sometimes found prolongations with the characters of the so-called varicose atrophy, changes which he thinks must be due to some cause which has escaped observation. In the face of this uncertainty of interpretation which the positive observation of protoplasmic varicosity presents, negative observations assume a greater value. In the course of his work upon the nerve-cell changes resulting from poisoning by arsenic and lead,* he has been able to establish the fact that even when the nerve-cell presents marked cytological alterations the external form of the element, as revealed by Cox's modification of Golgi's method, may appear quite intact. When alterations do appear in preparations by Cox's method, they affect specially the cell-body and large protoplasmic trunks, and, notwithstanding their presence, the fine branches and the gemmulæ may be preserved. He concludes that the methods of metallic impregnation do not reveal alterations except in their more advanced phases, when already it is possible to demonstrate distinct alterations by cytological methods. He is of opinion that it may be excluded that the alterations demonstrable with these impregnation methods begin in the fine protoplasmic branches, or that they are preceded by loss of the gemmulæ. It will thus be seen that Lugaro does not deny the occurrence of varicose atrophy as a pathological condition, but he recognises as such only a change which has characters of a somewhat different kind from those which have been described by many writers. It seems to us that these opinions regarding varicose atrophy expressed by Lugaro—than whom there is certainly at present no more reliable observer in the field of experimental neurology—are deserving of entire credence. We had ourselves long felt difficulty in accepting many of the views that were expressed regarding the significance of abnormal appearances to be observed in Golgi preparations, and even before reading Lugaro's paper above referred to we looked upon that form of varicose atrophy which he has observed in

* *Loc. cit.*

experimental lead poisoning as the only one that could be regarded as of a genuinely pathological character.

Varicose Hypertrophy of the Axis-cylinder Process.—With respect to this morbid appearance the matter seems to stand in much the same position. Little varicosities in the form of a rosary are certainly not exclusively produced by disease. We are inclined to recognise as pathological only a change of a much more gross character, consisting in a more general though still irregular swelling of the process, extending not infrequently to some of the collaterals.

Occurrence of these Morbid Changes in Cases of Acute Insanity; Histological Methods; Sources of Fallacy; Occurrence of Chromatolysis in Persons dying in General Hospitals.—We come now to the question of the occurrence of these changes in the acute insanities. That they do occur in the cortical nerve-cells in such cases has already been demonstrated, but we are not aware that any systematic research upon the subject has yet been recorded. We can scarcely include the recent work of Turner* in such a category, as it deals only with the giant-cells of the cortex; and we would further remark that the fresh methylene-blue method which he has exclusively employed is one upon which very little reliance can be placed for pathological research. It is capable of revealing with some distinctness the chromatic structure of the giant-cells, but we are certain that the same cannot be said of it with regard to the smaller nerve-cells. It is a noteworthy fact that very little work has been recorded upon the pathological changes in the nerve-cells of the cerebral cortex in comparison with that which has been published regarding the nerve-cells of the spinal cord. The principal explanation of this fact lies, we believe, in the circumstance that observers have experienced the greatest difficulty in satisfactorily applying to the small nerve-cells of the brain the staining methods which have proved so successful in the case of the large cells of the spinal cord and root-ganglia. Using Heidenhain's method of sublimate fixation, paraffin embedding, and staining with methylene blue, thionin, and toluidin blue, according to the technique now generally employed, we have seldom succeeded in obtaining clear views of the structure of the human cortical nerve-cells, more especially of that of the smaller cells. Moreover, in many instances we have found that the preparations are not permanent, fading to a serious extent even after a few days. Working for a long time

* *Journal of Mental Science*, July, 1898.

with both methods, we have become more and more thoroughly convinced of the superior value for the cortex of the methyl-violet method, which was first described by one of us in the *Journal of Mental Science*, last year.*

This method, when successfully carried out upon tissues fixed in sublimate, gives a view of the chromophile elements of the protoplasm which far exceeds in clearness and sharpness of detail any of the pictures which we have been able to obtain with the modified Nissl methods (Fig. 1). The smallest cells are as distinctly shown as the large ones. We have never seen the preparations deteriorate in the slightest degree. The method permits of the study of chromatolysis to very great advantage. It picks out with remarkable clearness ghost-cells and fragments of disintegrating cells, which for the most part remain quite invisible in Nissl preparations.

We have recently ascertained several important conditions upon which the success of this method seems to depend. In the first place methyl violet 6 B should be alone employed. The iodine solution must be fully saturated. The necessity of thoroughly drying the sections upon the heater has already been insisted upon; indeed, the reaction entirely depends upon the complete removal of water at this stage. Higher temperatures than 60° C. cause the methyl violet and iodine compound to decompose. With attention to these points we are now able to obtain practically constant results with this method. The following is a full description of the process as we now employ it for the cortical nerve-cells:

Fix very thin slices of tissue in saturated solution of corrosive sublimate in .5 per cent. salt solution (Heidenhain) for twenty-four hours. Wash shortly in water. Place overnight in 80 per cent. alcohol to which has been added a sufficient quantity of alcoholic solution of iodine to give it a dark sherry colour. Change to methylated spirit (or alcohol of corresponding strength) with a similar quantity of iodine added. Renew this fluid next day. On following day change to methylated spirit without iodine. Cut sections preferably by the dextrine freezing method. It is essential that they should be very thin. Transfer the sections from alcohol to 1 per cent. methyl violet 6 B in water. Allow to stain for from five to ten minutes. Wash shortly in water. Place in saturated solution of iodine in 2½ per cent. potassium iodide in water for ten minutes. Wash sections in water. They may remain in this for an hour or so without suffering harm. Take a section up from the water on a perfectly clean slide. Carefully

* W. F. Robertson, "The Normal Histology and Pathology of the Neuroglia," *Journal of Mental Science*, October, 1897.

remove water from around it by means of a towel. Next, with a piece of smooth blotting-paper (folded double) firmly blot the section in the same way as one blots a sheet of wet manuscript. Immediately afterwards, without allowing the section to dry in air, pour over it some drops of a mixture of equal parts of turpentine and benzole. Place the slide upon a hot plate (described below), and thoroughly dehydrate the section at a temperature not exceeding 60° C. If the turpentine benzole tends to evaporate off the section, add more by means of a pipette. When dehydration is complete the previously black and opaque tissue assumes a dark blue and faintly translucent appearance. Generally from 10 to 15 minutes are required. When the section seems dehydrated remove the slide from the hot plate, allow it to cool, and then pour off the turpentine benzole. Decolourise with aniline benzole (1 to 2). The aniline oil must be perfectly anhydrous. Renew aniline benzole two or three times. When colour ceases to come out wash the section in several changes of pure benzole, and mount in balsam in benzole.

It is essential that the section should be completely dehydrated. Any spot in which moisture has been allowed to remain will be almost completely decolourised by the aniline benzole. On the other hand, it is important that the slide should be removed from the hot plate as soon as dehydration is completed, as the colour then begins to come out to some extent. While the preparation is being dehydrated on the hot plate the slide should rest on two parallel metal bars placed on the plate, so that the heat is transmitted only to the two ends of the slide. Such an arrangement will be found to prevent the turpentine benzole running off the section. A small spirit lamp placed below a metal plate resting on a tripod can be made to give a sufficient amount of heat to dry the sections satisfactorily.

We have also used Heidenhain's iron-hæmatoxylin method and staining with Delafield's hæmatoxylin, with a view to studying changes in the fibrillar portion of the protoplasm. They have not, however, been of much service to us for this purpose. Lugaro, who has chiefly advocated the use of these methods, has admitted that they do not succeed so well with the nerve-cells of the cortex as with those of the spinal cord and root-ganglia. We have also tried the method of chrome-oxalic fixation which Graf* has recently declared to be of such high value for the demonstration of the fibrillar portion of the nerve-cell. In our hands his solution has given results which are far inferior to those obtained by sublimate fixation. We notice that Graf has not recorded the results of any comparative observations of fixation by chrome-oxalic

* *State Hospitals Bulletin*, 1897, p. 368.

and by Heidenhain's sublimate, which is at the present day the reagent that is generally regarded as the best fixative for nerve-cells. After chrome-oxalic, as with sublimate fixation, normal nerve-cells stained by the iron-hæmatoxylin method present the chromophile elements so deeply coloured that the primitive fibrils are quite obscured except in the axis-cylinder process. It is only in cells that have undergone a certain degree of chromatolysis that these fibrils can be seen in the body of the cell by this method of staining. We are convinced, therefore, that the figure given by Graf as representing the appearance of a normal human nerve-cell stained by the iron-hæmatoxylin method, after chrome-oxalic fixation, must have been drawn from a cell which had undergone a degree of chromatolysis. It seems to us that this chromatolysis is sufficiently explained by the mode of death of the subject, *who was executed by electricity*.

Following the recommendation of Lugaro, of the many Golgi methods now in use we have employed solely the modification of Cox.

Before describing the morbid changes which we have found in the cortical nerve-cells in cases of acute insanity we have still to endeavour to explain the sources of fallacy to which we have referred. They depend upon the fact that there are certain causes which give rise to chromatolysis, or to conditions which more or less closely simulate it, in the cortical nerve-cells in all persons dying natural deaths. It is, therefore, essential to thoroughly understand the nature of these changes in order to be able to discount them, before attempting to draw any deductions as to the relation of acute insanity to chromatolysis. One factor which, it appears to us, we do not require to discount is that of structural modification due to functional changes in the nerve-cell. These have been shown by Lugaro to be of so slight a character that they may safely be neglected in pathological observations on the human subject. The alterations which it is essential to discount may be grouped under three headings:—(1) *post-mortem* changes; (2) senile changes; and (3) morbid changes which arise during the last few days of life in cases of death from natural causes apart from insanity.

It is only recently that *post-mortem* changes in nerve-cells have received the attention which they deserve. Several Italian neurologists* have recently made careful experimental inquiries into this subject. The results which they have

* A. Neppi, *Rivista di Patologia Nervosa e Mentale*, 1897, f. 4; O. Barbacci and G. Campacci, *ibid.*, 1897, f. 8; Giulio Levi, *ibid.*, 1898, f. 1.

recorded are in agreement as regards essential details, and it is therefore now possible to give a reliable description of these *post-mortem* changes. Our own observations so far as they have gone are entirely in harmony with the results obtained by these Italian observers. It will be readily understood that the rate of such changes depends largely upon atmospheric conditions, and will therefore vary considerably at different times. In the protoplasm the alteration takes the form of a gradual fragmentation of the chromophile elements, so that the cell assumes a powdery aspect (Fig. 2). Frequently there is a running together of the chromophile elements into several large masses. Before these changes have proceeded very far the chromophile elements begin to show diminished affinity for the basic dye, until after two or three days they entirely cease to retain the stain (Fig. 3). The most important change in the nucleus is that it stains deeply and diffusely. Only after three or four days have elapsed does it begin to disintegrate and become pale. The nucleolus retains its affinity for the stain for a still longer period. It will be seen that these alterations differ in some essential respects from chromatolysis. In *post-mortem* change the fragmentation of the chromophile elements is not in the first instance attended by diminished affinity for the stain. Indeed, Giulio Levi describes a preliminary hyperchromic phase. Further, the fragmentation and pallor always occur diffusely throughout the cell, and generally to an equal extent in all the cells. But the most important distinguishing feature, in the cortex at least, seems to us to be the deep diffuse staining of the nucleus. Chromatolysis in the cortex, except at a very early stage, is in our experience invariably attended by pallor of the nucleus. In their early phases at least, such as we commonly see in the human brains we examine, *post-mortem* changes in the cortical nerve-cells are, we therefore think, in most instances capable of being discounted without serious difficulty. We venture to suggest that some at least of the examples of "granular degeneration of the chromophilic material" recently described by Turner were of this *post-mortem* character. Two of the observers who have studied *post-mortem* changes experimentally have also used the method of Cox (Barbacci and Campacci). The results which they have obtained go to show that varicose atrophy, having the characters that we have referred to as being probably alone of an undoubtedly pathological character, is not simulated by such changes.

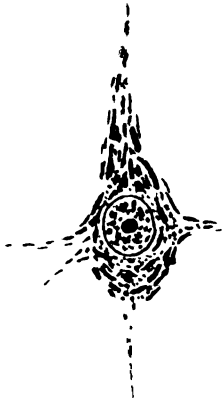


Fig. 1.



Fig. 3.



Fig. 2.

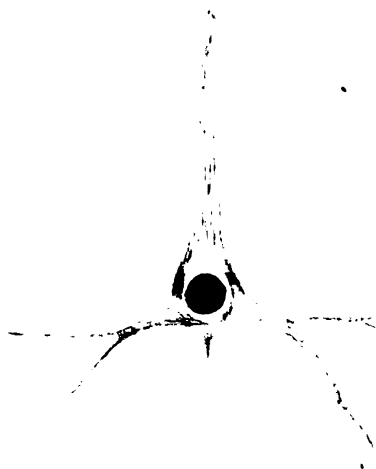


Fig. 4.

To illustrate article by Dr. FORD ROBERTSON and Dr. ORR.

Hodge* observed in the course of his studies on the nerve-cells of honey-bees that with advancing age there are not only alterations in the nucleus and in the form of the cells, but at the same time a diminution in the number of existing cells. Lutzenberger† has found that in the healthy guinea-pig sometimes nearly one in every thousand nerve-cells shows evidence of disintegration, and he has suggested that in normal adult life a certain number of nerve-cells are always undergoing involution, or are in a regressive phase. It seems to us that there are the strongest anatomical grounds for believing that this theory is in accordance with actual fact. Probably the more advanced the age, the greater is the number of cells in a regressive phase, until in senility quite a high percentage is reached. We have recently had the opportunity of examining the brain of a woman who died at the age of ninety from senility uncomplicated by any serious organic disease recognisable at the *post-mortem* examination. Most of the cortical nerve-cells showed a large collection of yellow pigment in their interior, often replacing the greater portion of the protoplasm. A large proportion of these cells appeared otherwise perfectly healthy, showing very clearly marked and abundant Nissl bodies in the remaining protoplasm, and a normal number of processes. Very many of them, however, showed further changes of a disintegrative character, the stages of which appeared to be as follows. The protoplasmic processes slowly atrophy and disappear. At the same time the body of the cell gradually shrinks and loses its angular form. The Nissl bodies begin to break up and to lose their affinity for methyl violet. The nucleus begins also to disintegrate and to stain faintly. Finally there are seen only a few violet granules representing the remains of the nucleus and Nissl bodies, accompanied or not by some scattered granules of yellow pigment. Certainly not less than sixty per cent. of the cells in this case presented these disintegrative changes, and probably about ten per cent. had reached the last stages that can be recognised. It is further to be observed that there was an evident paucity of nerve-cells in the cortex, showing that many of them had entirely disappeared.

It is well known that pigmentary changes occur in the cortical nerve-cells in certain morbid conditions quite apart from senility. But to discuss this question would be to go beyond the limits that we have prescribed for this paper.

* *Journal of Physiology*, 1894.

† *Annali di Neurologia*, 1897, t. 5.

We wish merely to direct attention to these senile regressive changes, and to insist upon the necessity of discounting them in studying the nerve-cells of the brain from any case in which senility is a factor.

We have made a careful study of the cortical nerve-cells of sixteen patients who died in one or other of the general hospitals of this city. In every instance we have found that chromatolysis was present, sometimes indeed in as many as from 10 to 15 per cent. of the cells. This may seem on first view a very surprising statement, but a moment's reflection upon some of the results which have been obtained in the experimental production of chromatolysis should, it seems to us, be sufficient to satisfy anyone that the occurrence of such changes in these cases is exactly what we should expect. An almost endless number of poisons, including many bacterial toxins, have been shown to produce chromatolysis in one or other of its forms, in a larger or smaller proportion of nerve-cells. Should we be surprised, therefore, that patients who die from such conditions as septic pneumonia, acute or chronic tuberculosis, exophthalmic goitre, or malignant disease, present a certain amount of chromatolysis in their cortical nerve-cells?

During the last few hours of life there is frequently a rapid invasion of the tissues by septic organisms. It has been shown that toxins such as they form are capable of producing chromatolysis with great rapidity. Chromatolysis has also been demonstrated to occur from inanition, want of sleep, experimental uræmia, and experimental anæmia; and Ballet and Dutil* found it in the cells of the spinal cord after occlusion of the abdominal aorta for only a few minutes. With the knowledge of experimental results such as these, we should certainly expect to find that a considerable percentage of the cortical nerve-cells of patients dying in general hospitals should show well-marked chromatolysis. But there is still in many cases another factor at work producing a similar change to which attention must be specially directed. Lugaro has recently† shown that experimental pyrexia causes complete disintegration of the chromatic portion of the protoplasm of cortical and other nerve-cells without producing any other very marked changes (Fig. 4). He found that all the nerve-cells were affected equally. Goldscheider and Flatau, who had previously studied these changes as they

* *Neurolog. Centralbl.*, 1897, p. 915.

† *Rivista di Patologia Nervosa e Mentale*, 1898, f. 5.



Fig. 5.



Fig. 6.



Fig. 7.

Fig. 8.

To illustrate article by Dr. FORD ROBERTSON and Dr. ORP.

occur in the cells of the spinal cord, have observed that the condition is one that is capable of being repaired in the course of a few days. The important bearing that these observations have upon cortical nerve-cell pathology in the human subject must be evident to everyone. We have ourselves examined several brains, both from the insane and mentally sound, in which this diffuse change was a marked feature. It seems to us probable that the five cases described by Turner, in which he found the chromophilic material completely absent from the giant-cells, were cases in which this pyrexia change had occurred. It is particularly to be noted that in this chromatolysis from pyrexia the nucleus remains practically intact. It is therefore easy to distinguish the condition from chromatolysis of toxic origin, which in our experience is always, in the cortex at least, attended by marked changes in this portion of the cell.

A large number of careful observations upon the brains of patients dying in general hospitals is still required before it will be possible to fully discount in cases of insanity the cortical chromatolysis which is caused by the toxic substances generated in the course of other diseases. It is mainly the strong conviction that we have of this fact that has caused us to hesitate for the present to record the results of our observations upon the occurrence of chromatolysis in all the cases of insanity that we have studied. It is only in the acute insanities, and in general paralysis, that we have found a percentage of chromatolysis so high as to completely separate the cases off from those of the mentally sound.

The number of cases of acute insanity that we have been able to examine is six. All of them died from exhaustion, accompanied in some instances by hypostatic pneumonia. Three of them were acute manias, two acute melancholias, and the sixth was a remarkable case of severe recurrent mania in which an attack was followed by death from exhaustion. In the acute manias we estimated the number of cells affected by chromatolysis at about 50 per cent. in one case, 80 per cent. in another, while in the third every cell appeared to be involved. In the case of recurrent mania about 60 per cent. of the cells were affected. In the acute melancholias the percentage was much lower, being in each about 25 per cent. But the difference presented by the cortical nerve-cells in these cases as compared with the general hospital cases was not merely one of percentage of chromatolysis. There were also differences in the character of the

chromatolysis. It was in general far more advanced, cells in the last stages of disintegration being abundant (Fig. 7). At the same time the pale ghost-cells (Fig. 8), almost devoid of any stain, which are specially well brought out by the methyl-violet method, were present in far larger proportion in relation to the total amount of chromatolysis than in the general hospital cases. These features point distinctly to a much longer duration of the morbid process. It is further to be noted that, in some of the cases at least, there was an appreciable loss of a large proportion of the nerve-cells. We have already referred to the difficulty of studying the condition of the primitive fibrils of the cortical nerve-cells, owing to the want of a satisfactory method of demonstrating them. But the observations of Lugaro justify us in assuming that in all those cells which show distinct disintegrative changes in their nuclei the achromatic part of the protoplasm has also undergone disintegration. Such cells are irreparable and virtually dead. They cannot resume their functions, but must inevitably disintegrate and disappear.

We believe that in this complete disappearance of a large percentage of the cortical nerve-cells, and not in the mere loss of processes or in any peculiar morbid appearances of existing cells, we have the essential anatomical fact in the pathology of secondary dementia. We have certainly seen several cases of secondary dementia in which it could be demonstrated that at least 50 per cent. of the nerve-cells had entirely disappeared.

Regarding the causes of this very severe degree of chromatolysis in the cortical nerve-cells in these cases of acute insanity we hesitate to express any definite opinion. We would only point out that the form of the chromatolysis corresponds closely with that which has been found to occur in lower animals from the action of various toxic agents.

With regard to the occurrence of varicose atrophy of the protoplasmic processes of the cortical nerve-cells in the mentally sound and in the insane, the results of our observations have been exactly those that the experimental work of Lugaro would lead one to expect, viz. that in cases in which with Nissl's method, or with the methyl-violet method, there are found examples of very advanced chromatolysis, there are also to be observed examples of varicose atrophy of that form which, as we have already stated, can alone be relied upon as being of a genuinely pathological character (Fig. 10). We have found the condition in the brains of general hospital

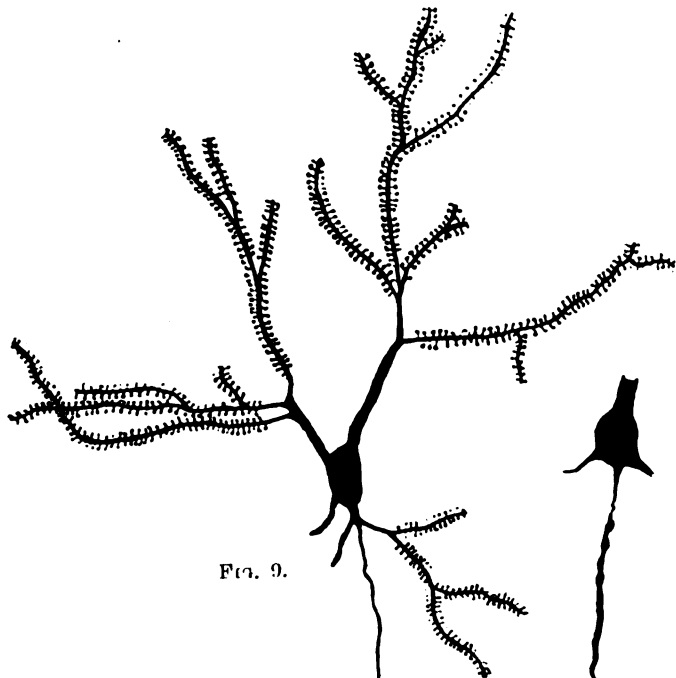


FIG. 9.

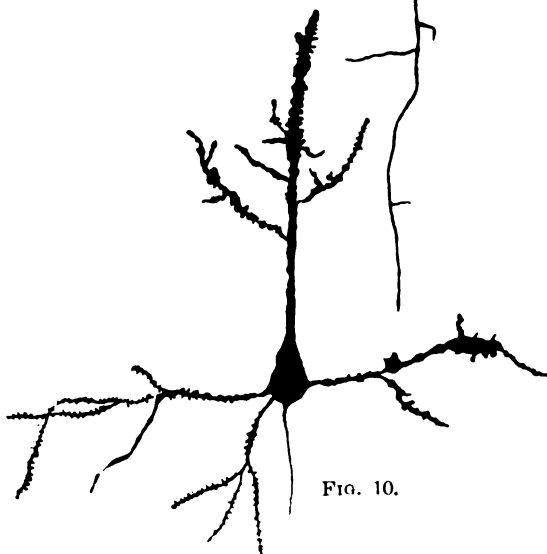


FIG. 10.



FIG
11.

To illustrate Article by Dr. FORD ROBERTSON and Dr. OLR.

patients as well as in those of our cases of acute insanity, but to a far greater extent in the latter.

We have similar conclusions to record as to varicose hypertrophy of the axis-cylinder process (Fig. 11); but, regarding the significance of this change, we feel that it is necessary to speak as yet with still greater reserve.

Description of the Illustrations.

FIG. 1.—Normal pyramidal nerve-cell of human cerebral cortex. Methyl-violet method. ($\times 800$.)

FIG. 2.—Pyramidal nerve-cell of human cerebral cortex, showing *post-mortem* changes. Methyl-violet method. ($\times 800$.) The nucleus is stained deeply and diffusely. The chromophile elements of the protoplasm are partially disintegrated.

FIG. 3.—Pyramidal nerve-cell of human cerebral cortex, showing very advanced *post-mortem* changes. From a case upon which the *post-mortem* examination was made three days after death. Methyl-violet method. ($\times 800$.) The chromophile elements of the protoplasm have entirely disappeared. The nucleus still stains deeply and diffusely. It shows slight vacuolation.

FIG. 4.—Pyramidal nerve-cell of human cerebral cortex, showing the type of morbid change that has been found to be produced by experimental pyrexia. Methyl-violet method. ($\times 800$.) The chromophile elements of the protoplasm have disappeared, and the fibrils are abnormally prominent. The nucleus is stained deeply and diffusely, probably owing to *post-mortem* change.

FIG. 5.—Pyramidal nerve-cell of cerebral cortex from a case of acute mania, showing apical chromatolysis. Methyl-violet method. ($\times 800$.) Note that the nucleus is involved in the morbid change.

FIG. 6.—Pyramidal nerve-cell of cerebral cortex from a case of chronic tuberculosis of kidneys and bladder, showing advanced chromatolysis. Methyl-violet method. ($\times 800$.)

FIG. 7.—Group of three pyramidal nerve-cells of cerebral cortex from a case of acute mania, showing very advanced chromatolysis. Methyl-violet method. ($\times 800$.)

FIG. 8.—Pyramidal nerve-cell of cerebral cortex from a case of severe melancholia, with death from exhaustion, showing very advanced chromatolysis. Methyl-violet method. ($\times 800$.) This is a *ghost-cell*, or a cell which, while its original form is fairly well preserved, presents no affinity for stains. In many instances such cells are perfectly colourless in preparations in which other healthier cells in the immediate vicinity are deeply stained.

FIG. 9.—Nerve-cell of cerebral cortex of dog, showing protoplasmic processes with gemmulæ, axis-cylinder process, and collaterals. Cox-Mirto method. ($\times 500$.)

FIG. 10.—Pyramidal nerve-cell of cerebral cortex from a case of chronic tuberculosis of kidneys and bladder, showing varicose atrophy of protoplasmic processes. Cox-Mirto method. ($\times 500$.)

FIG. 11.—Axis-cylinder process of cortical nerve-cell from a case of exophthalmic goitre, showing varicose hypertrophy. Cox-Mirto method. ($\times 500$.)

*Observations on the Normal and Pathological Histology of the Choroid Plexuses of the Lateral Ventricles of the Brain.**

By JOHN WAINMAN FINDLAY, M.D., Pathologist to the Crichton Royal Institution, Dumfries.

I HAVE lately been engaged on a research into the normal and morbid histology of the choroid plexuses of the lateral ventricles.

This inquiry, begun at the suggestion of my colleague, Dr. Gilmour, would have failed but for Dr. Rutherford supplying necessary instruments, placing unlimited time at my disposal, and generally facilitating the work, in the course of which I examined microscopically the choroid plexuses in sixty-five cases. Of these fifty-nine were from the insane, and the remaining six were from patients dying in a general hospital, while for the further study of the normal structure I made preparations from several absolutely fresh choroid plexuses of the sheep, ox, and calf. Forty-nine of the plexuses from the insane were given me by Dr. Ford Robertson, to whom I am also indebted for much valuable help; while Dr. Sutherland, of the Glasgow Western Infirmary, kindly supplied me with the six plexuses from the sane. I also desire to express my thanks to Dr. John Reid of Milngavie for many practical hints in photo-micrography.

Some of the results attained I now have the pleasure of bringing before you, and shall pass in review a few of the more salient features in the anatomy and pathology of the choroid plexus. A demonstration of this nature, however, must necessarily be incomplete, and I shall be unable to do more than glance at the theories and opinions of those who have already made a study of this subject.

Normal Histology of the Choroid Plexus.—It is generally accepted that the choroid plexus is formed of pia mater, while the velum interpositum is composed of two layers of pia mater, between which arachnoidal tissue and blood-vessels are contained.

As the choroid plexuses are only fringes of the velum interpositum, one would expect to find arachnoidal tissue here also; but such is not described, the generally accepted view being that they are composed of pia mater alone.

Lately, however, Middlemass and Robertson have formu-

* Read and illustrated with lantern slides at the Annual Meeting of the M-dico-Psychological Association, Edinburgh, 1898.

lated the view that in the soft coverings of the brain two distinct membranes do not exist. They hold that there is essentially only one structure throughout, and therefore only one membrane, which they propose to call "pia-arachnoid."

To my mind, after an examination of Dr. Robertson's sections, this contention of the oneness of structure of the pia mater and arachnoid has been proved, and it seems to me that the basis of the choroid plexus consists essentially of the same structure as the pia-arachnoid covering the surface of the brain, and likewise resembles a spongy lymph sac.

The basis, then, of the choroid plexus is delicate white fibrous tissue. The white fibres are gathered together into bundles or trabeculæ of varying thickness and length. These bundles interlace with and cross over one another after the manner of a network, forming numerous spaces of all shapes and sizes. These spaces, inaccurately placed above and alongside of one another, form freely communicating cavities containing fluid, and are lined throughout by a single layer of flattened endothelial cells with large oval nuclei.

In the pia-arachnoid on the surface of the brain these spaces are largest in the centre of the membrane, where they form the so-called "subarachnoid spaces," or about the base of the brain the "arachnoid cisterns."

Much the same condition may be seen in the more central parts of the "glomus" of the choroid plexus—the fusiform swelling of the plexus regularly found at the junction of the body of the lateral ventricle with the descending horn,—where these cavities often attain a considerable size. (See Photograph I.) This might be taken as evidence that the choroid plexus consists of two distinct structures, viz. an external layer of pia mater and a central mass of arachnoidal tissue. Such, however, I cannot believe. It seems to me that, as in the case of the pia-arachnoid on the surface of the brain, there is only one structure throughout. Most marked in the centre of the "glomus," the spaces get smaller and smaller as we pass towards the surface, till it becomes difficult to make them out. But even here in many cases it is possible to do so, and at most these relatively dense portions of the plexus are nothing more than loose areolar tissue formations lying alongside distinct and easily recognised sinuses.

The choroid plexus is a very vascular structure, and has been described by some authors as an erectile or cavernous tissue. Appearances very suggestive of such a condition are seen, more especially in the glomus, but these are, I feel sure,

due to nothing more than the remarkable tortuosity of the veins and arteries. (See Photograph II.)

The surface of the plexus is beset with a large number of highly vascular villous projections. These are of all sizes, and the largest may branch and subdivide many times before the ultimate villi are formed. Each larger villus has an afferent artery and efferent vein, which open into a capillary network lying near the surface. In the smallest villi a capillary loop in the form of a bow may be seen close under the epithelium which everywhere covers the plexus. The greater part of the villus structure consists of epithelium and capillary, the smaller remainder being made up of homogeneous connective tissue, with a few oval, spindle, or ramifying cells.

The free surface of the villi is everywhere covered by an epithelium. This epithelium is described by all authors, with the exception of Luschka, as being composed of a single layer of cells. Luschka, however, has described this epithelium as approaching the stratified formation, recognising not only two or three layers of cells situated above one another, but also different developmental forms.

In many cases it can be demonstrated that only a single layer of cells is present, but then just as often three, four, or more layers of such cells may be seen, the two conditions lying alongside one another. Haeckel regards the latter condition as due to pathological proliferation, but such seems almost too common for a pathological change, being found in all my cases, in parts without exception, and likewise in the choroid plexuses of sheep, calves, and oxen examined.

The individual cells vary in size, ranging from $\cdot 01$ to $\cdot 015$ mm. They are irregularly rounded or polygonal in shape, and fit closely by means of delicate processes which interlock between neighbouring cells. In the deepest layer small and slender processes pass down from the angles of the cells into the subepithelial layer. It seems to me that this point is of great importance as tending to support the view that the choroid plexus epithelium is homologous with the ependymal epithelium, which has such processes even in adult life. The protoplasm of the epithelial cell is very granular, and contains a large spherical nucleus. In addition there is usually present in the protoplasm a clear yellowish, or even brownish-coloured highly refractive globule, sometimes approaching the dimension of the nucleus itself, but as a rule only attaining a half or a third of that size. By means of an oil immersion lens, however, it may be seen that the granular appearance of the

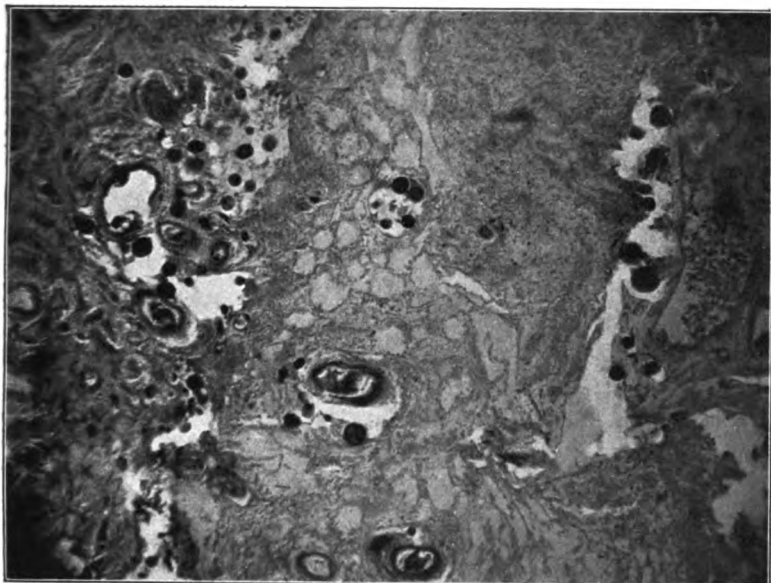


FIG. 1. Central part of glomus, showing large and distinct spaces. Puerperal Insanity. ($\times 26$.)

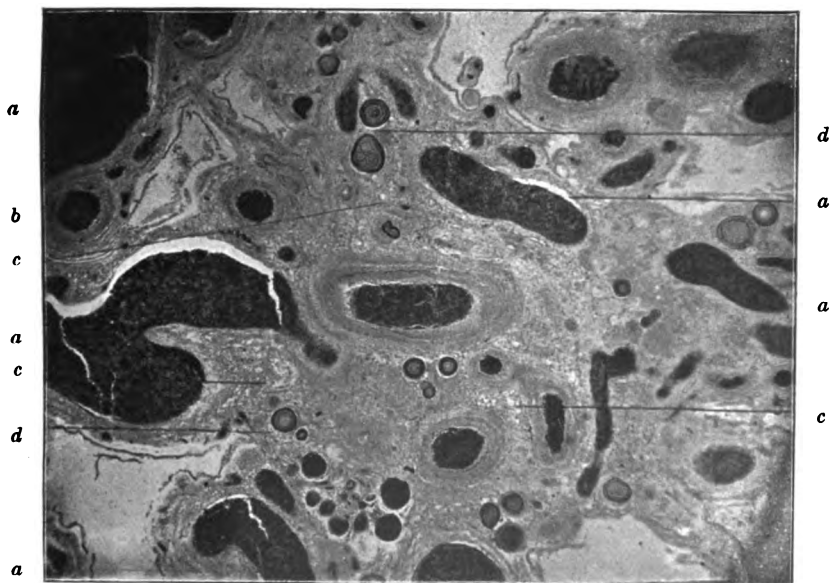


FIG. 2. Glomus showing usual distribution of veins. Alcoholic Insanity. ($\times 26$.) *a.* Veins; *b.* Arteries; *c.* Open trabecular arrangement; *d.* Hyaline concentric bodies.

To illustrate Dr. FINDLAY's Paper.

protoplasm is in reality due to an immense number of small globules, which appear of the same nature as the single large one. Where there are several layers of cells *in situ* it may be made out that this vacuolation increases steadily as we pass to the free surface until cells are reached entirely transformed into globules, and showing no nuclear staining. Beyond this again the cells discharge their contents by breaking up, sometimes leaving an empty cell membrane to indicate where they have been. Before the cell actually breaks up the globules may run together to form a single large sphere. Drops and globules similar to those met with in the epithelial cells themselves may be demonstrated in the ventricular fluid. Probably, however, they do not remain as such for any length of time, but break down or become dissolved.

There is no doubt to my mind that the choroid plexus is an actively secreting structure, discharging its secretion into the ventricular cavity. This secretion is formed by a constant proliferation of the epithelial cells, which elaborate in their interiors peculiar mucin-like globules, and only seem capable of doing so once. The cell wall ultimately gives way, and these globules are discharged into the ventricular fluid. Such transformation and discharge is continually going on, and the outermost layers of epithelium are practically dead structures. They have fulfilled their purpose, and may be said to have died in doing it.

Pathological Histology of the Choroid Plexus.—Passing to consideration of pathological appearances met with in the choroid plexus, we take first the hyaline concentric bodies, which constitute a border-land between the normal and the abnormal. W. F. Robertson, who has investigated the origin and nature of these bodies in the dura mater and pia-arachnoid, is of opinion that they exist normally, but that they are found in a profusion in the insane that they are never met with in the mentally sound; and I may say that I am of like mind.

The usual form of these bodies is round, and as a rule each is surrounded by a well-marked hyaline capsule, or even a capsule of fibrous tissue. They are marked with concentric rings, these markings varying in intensity and number in individual bodies. The round is not the invariable shape: many different forms may be produced from several spheres coming together. Thus we may have dumb-bell, trefoil, or very irregularly shaped figures, the interior showing distinct concentric bodies with rings of their own, while beyond these

is a surrounding stratification common to the whole structure. Rod-shaped bodies are occasionally found, but they are decidedly rare. (See Photograph III.)

These concentric bodies are not merely deposited from the tissue fluids, as Virchow and others state. They are the result of proliferative and hyaline-degenerative changes in the endothelial cells lining the connective tissue trabeculæ of the plexus, as W. F. Robertson has shown in the dura mater and pia-arachnoid.

The endothelial cells swell up, lose their affinity for nuclear stains, and finally assume the form of a homogeneous hyaline sphere, staining faintly with eosine in hæmatoxylin and eosine preparations. Each may attain a very considerable size. One of them may form a small concentric body, but as a rule several spheres, probably of a semi-fluid consistence, coalesce to form the more usual concentric body. The concentric markings appear subsequently, and, as W. F. Robertson suggests, are most likely due to shrinkage. The fibrous capsule so frequently present is added later, after the manner in which nature encapsules all foreign bodies, and in all probability the fibrous tissue is developed from the still healthy endothelial cells.

While the above is the most common mode of development of concentric bodies, I do not think that it is the invariable one. When hyaline degeneration attacks the arterioles it may obstruct them and convert them into hyaline rods. Venules and capillaries, the walls of which are thickened by hyaline degeneration, also form concentric bodies, the ultimate occlusion of the vessels being brought about by a proliferation of the endothelial cells lining the vascular tube. (See Photograph IV.)

In conclusion, the hyaline material is an exceedingly unstable substance, causing considerable variations and anomalies in staining. In senile cases, however, these bodies are usually found to be impregnated with lime salts, as proved by effervescence on addition of hydrochloric acid. Moreover it seems not at all unlikely, from the reaction with osmic acid, that they, previous to calcification, undergo retrogressive fatty change, as so frequently happens in the case of calcifications elsewhere.

Still on the border-land of the pathological are the cysts of the choroid plexus. These cysts are so commonly found that Faivre, writing in 1855, described them under the name of "choroid vesicles," as normal and peculiar to the human

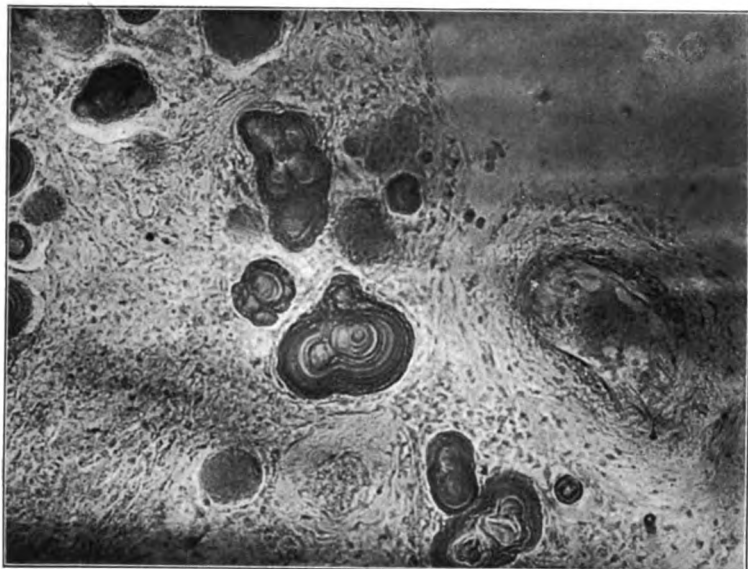


FIG. 3. Irregular forms of hyaline concentric bodies. Puerperal Insanity. ($\times 120$.)

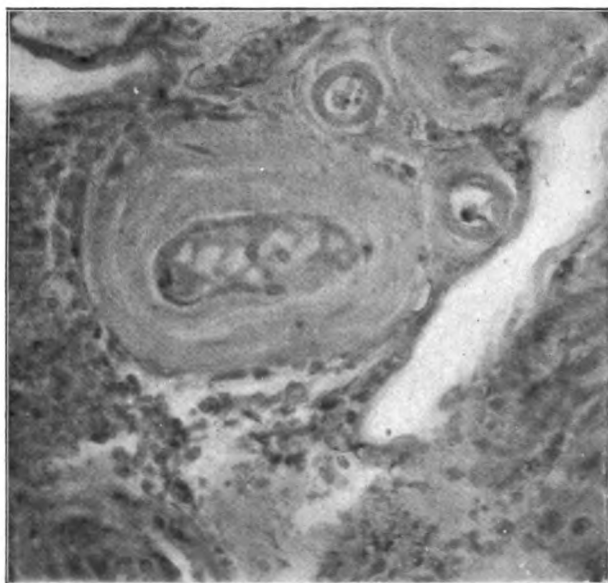


FIG. 4. Development of hyaline concentric bodies. Wall of venule enormously thickened from hyaline degeneration, proliferation of the endothelial cells. General Paralysis. ($\times 240$.)

To illustrate Dr. FINDLAY'S Paper.

subject. I found them in fifty-seven per cent. of cases examined.

These cysts may be little larger than a pin's head, or they may reach the size of a pea. In some cases they are few in number, in others they are very numerous, the whole glomus being converted into a cluster of cysts like a bunch of grapes. The walls of the cysts are very delicate, and numerous fine vessels may be seen coursing over their surfaces, which display a fine white dotting, due to concentric bodies embedded in them, or to small aggregations of cells filled with fatty granules. The surface of the cyst, moreover, is very often destitute of an epithelial covering. Near the base of such a cyst the epithelium may be quite distinct, but as the summit is approached the cells become scattered with a bare patch here and there, till finally a portion is reached where no epithelial cells can be seen. The interior of the cyst is made up of a very open network of connective-tissue trabeculæ, which are lined by degenerated and degenerating endothelial cells, scarcely one of which presents normal features. The spaces are filled with a thin fluid, in which float cells in different degrees of degeneration. Concentric bodies are of very frequent occurrence throughout the cyst. All around this looser and more open network, and gradually blending with it, is a dense tissue in which there has been very extensive proliferation of the endothelial cells lining the trabeculæ, and associated with this usually some thickening of the trabeculæ themselves. (See Photograph V.)

I have arrived at the following conclusions as to the origin of these cysts. Hyaline concentric bodies and hyaline spheres are very commonly found in them. The degenerative process in the endothelial cells of the trabeculæ in cystic formation is very similar to that which precedes the development of concentric bodies. Indeed, so close is the resemblance that it is very questionable if we are entitled to discriminate between them. Still, to my mind there is no doubt that cells break down into fluid in the cysts in a manner that never occurs apart from them. But this degeneration of cells alone does not seem sufficient to account for the development of these cysts, though there is no doubt that the fluid found in them is in part due to this bursting of the endothelial cells affected with colloid or hyaline degeneration. In all the cysts which I had an opportunity of examining the fluid was quite limpid. Colloid cysts with gummy viscid contents have, however, been described by Wallmann and Hoffmann.

It seems more than probable that there are two processes engaged: firstly, a proliferation and degeneration of the endothelial cells, frequently associated with hyaline changes in the trabeculæ; and secondly, a resulting condition of œdema.

Through the spaces of the choroid plexus there must be a constant circulation of lymph. This proliferation and degeneration of cells in many cases completely fill up these spaces, and must constitute a serious obstacle to the flow of lymph. Hyaline spheres may also eventually block them up. Concentric bodies must have the same effect, and these are never present in any numbers without a concomitant development of cysts. There exist, then, very numerous points of obstruction, behind which the lymph stream is constantly pressing. There is, in short, an obstructive œdema. The spaces of the pia arachnoid become more and more distended with the lymphatic fluid, and larger spaces still are produced by the breaking down or absorption of intervening trabeculæ, while the cyst itself results from a number of such spaces lying adjacent to one another. The degenerating endothelial cells add to the fluid, and where the tendency is for the cells to rupture, then are the contents of the cyst colloid. In other cases, again, where the greater number of the degenerated cells goes to the formation of concentric bodies, the cystic fluid tends to be thin and limpid. Finally, such a collection of fluid may be shut off from surrounding parts by the occurrence behind the fluid accumulation of the same changes which led to the obstruction in front; and the frequency with which dense tissue is found all around the cyst seems to point to such a conclusion.

Among the truly pathological alterations met with in the choroid plexus, the hyaline fibroid change in the vessels is perhaps the most important. This condition may be found in all the vessels, but it seems to affect mainly the arteries and capillaries. Of the arteries, the smaller ones and the arterioles show this degeneration to the greatest extent. The adventitia alone, or the intima and media together, may be affected, but by far the most common condition is to find the whole three coats involved.

Hyaline degeneration of the adventitia consists in a homogeneous thickening of the longitudinally running fibrous tissue. This swelling may be slight or considerable, stains a faint pink with eosine, and, as a rule, is devoid of granu-

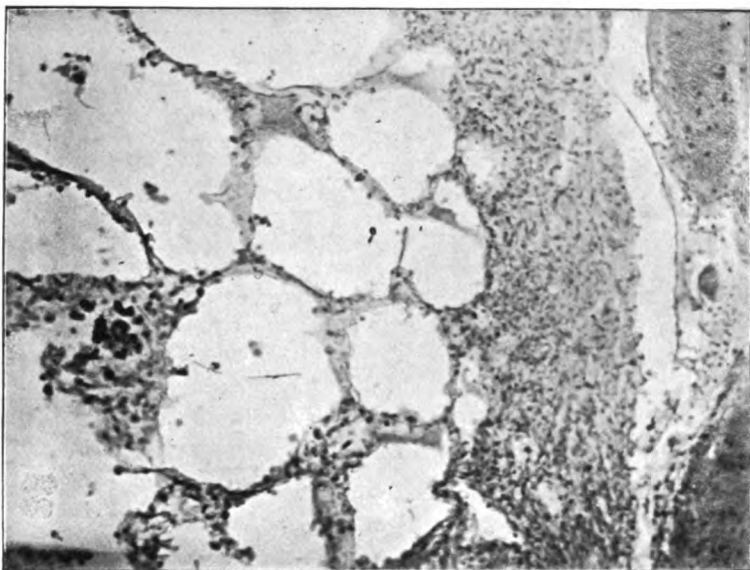


FIG. 5. Cysts of choroid plexus.

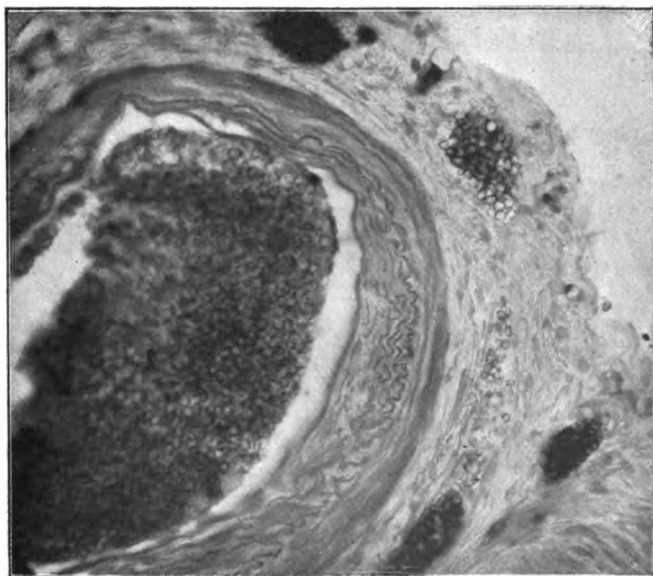


FIG. 6. Section of arteriole, showing several layers of elastic laminae.

To illustrate Dr. FINDLAY'S Paper.

larity. In the normal condition in the arterioles the adventitia is only made out with difficulty, whereas the diseased adventitia alone may be two or three times the thickness of the original wall. The adventitia never becomes much thickened without the muscular coat showing similar changes, as shown by the loss of nuclear staining in the media and the presence of dilatations.

The muscular coat of an artery, as a rule, is only involved secondarily to a hyaline degeneration of the intima, the explanation of this being that the media derives its nourishment from the interior of the vessel, and not from without as in the case of the adventitia. Consequent on the intimal thickening a starvation of the muscular fibres is brought about, and this leads to their degeneration. The nuclei of the muscular fibres lose their property of staining with hæmatoxylin, and ultimately a homogeneous, finely fibrillated, or granular mass results, staining faintly or darkly with eosine.

Normally in the arterioles, when cut longitudinally, the intima appears as a thin even band of tissue. The intima rarely becomes so much thickened and swollen as the adventitia. In some cases this hyaline thickening is very irregular on its external surface, dipping down into the degenerated muscular layer, and pushing the elastic lamina before it. In no case, so far as I have seen, does the elastic lamina itself undergo this hyaline change. It may become absorbed and disappear, but when present it continues to separate the intima from the media, dipping down into the latter, and forming in it numerous loops in order to fulfil its purpose.

The hyaline thickening of the intima is ultimately replaced by fibrous tissue, mixed up with which may be seen elastic fibres or bundles, and instead of the single normal fenestrated membrane there may be several elastic laminæ, two, three, and four being met with. (See Photograph VI.) In these endarteritic vessels the wavy course of the elastic lamina becomes still more wavy, and the lamina itself is increased in thickness. In other cases, again, it looks almost as though the entire intimal thickening was due to an hypertrophy of the elastic lamina, with only a few cellular elements separating the different layers.

Under normal conditions, in any of the arteries in the choroid plexus the elastic lamina appears as if composed of a single layer of elastic tissue, this layer varying in thickness with that of the artery. Still it may be possible that even here, as in the case of the larger arteries elsewhere, the elastic

lamina is made up of two or three layers, though such cannot be demonstrated.

That the extra elastic laminae owe their origin to a bursting asunder of these layers by new-formed tissue, as held by Carl v. Rad and Rumpf, seems not at all unlikely. Thus two elastic laminae are explained by the division of the primary layer, three by a further division of the secondary lamina, and so on. But it seems to me that the process, though in part, is not altogether mechanical, for there is no doubt that in many cases the elastic lamina is very distinctly hypertrophied. It becomes thickened and lengthened, so that its normal sinuosity is much increased. If the elastic lamina did not play an active rôle the thickened intima would tend to obliterate the normal windings, making the elastic layer in parts quite straight.

Heubner has observed several elastic laminae in syphilitic endarteritis, and explains their occurrence as follows:—"When the endothelium is no longer caused to proliferate cells from syphilitic irritation its normal function begins. It forms a fenestrated membrane over the new-formed tissue, as it formed the same in young organisms over the muscular layer." This further explanation of Heubner appears to me to be in accordance with the facts, and has more lately been supported by Löwenfeld. It accounts most satisfactorily for those cases in which a secondary elastic lamina is found immediately under the endothelium, separated by a considerable distance from the original lamina by new fibrous tissue, and, so far as can be seen, in no way connected with the original lamina.

As already mentioned, cases are occasionally seen in which the entire intimal thickening seems to consist of elastic tissue. From a consideration of these we must, I think, conclude that the elastic lamina is a vital structure, and that under certain circumstances it is capable of proliferation and growth.

Little fusiform dilatations and sacculations, of the smaller arterioles especially, are frequently met with, and these, without doubt, are closely related to and dependent on hyaline degeneration in the vessel coats. A form of this is what Löwenfeld calls "die Rosenkranzform des Muscularisrohres," from its resemblance to a rosary. There is throughout the arteriole a mild degree of hyaline degeneration and thickening of the intima, and this, though slight, has been sufficient to interfere with the nutrition of the muscular layer. The elastic lamina is present through

practically the whole length of the section. Wherever the media has degenerated, as shown by the loss of nuclear staining in the muscular fibres, the vessel wall has yielded to the pressure of the blood, leading to the formation of a little fusiform dilatation. Moreover where sacculation has occurred it may be noted that the thickening of the adventitia—likewise hyaline in this case—is less marked, while at the one point where the vessel presents a narrowed lumen this thickening is more extreme.

Such an arteriole may become occluded, more usually by thrombosis occurring on the altered vessel wall than by the hyaline thickening alone. The thrombus ultimately becomes hyaline, and it is impossible to distinguish it from the original wall of the arteriole.

Very rarely the "Rosenkranzform" dilatation becomes more and more extensive, till ultimately a miliary aneurism is formed. The development of such an aneurism must have been gradual, allowing sufficient time for a reparative process to take place in its walls. This would be brought about first of all by the proliferated endothelial cells invading the hyaline mass, till a condition of endarteritis would be produced. But the growth of the aneurism would not be arrested here. So long as the tissue was incompletely formed dilatation would go on, and would only cease with the complete conversion of the granulation into fibrous tissue. These miliary aneurisms are true aneurisms, and not merely, as Eppinger holds, examples of ectasis or dilatation in which all the coats of the vessel are present. No muscular tissue can be detected in the wall of a miliary aneurism, and the arteriole entering it shows hyaline degeneration of both its intima and media.

So far as my experience goes, vascularisation of either the hyaline or fibrous thickenings does not occur to any extent. Newly formed capillaries are not infrequently found in the thickened adventitia, but never have I seen new-formed vessels in the thickened intima of the arteries and arterioles found in the choroid plexus.

In the time at my disposal I have been unable to overtake more than the pathology of hyaline concentric bodies, cysts, and blood-vessels. The two former are due, in the main, to proliferation and degeneration of the endothelial cells lining the trabeculæ, which may, however, proliferate and degenerate otherwise. In conclusion I may state that all the connective-tissue and endothelial changes commonly found in

the pia-arachnoid of the insane are similarly met with in the choroid plexuses of the lateral ventricles.

Discussion.

Dr. FORD ROBERTSON said he agreed so fully with Dr. Findlay that he had no criticism to offer, but he had to express the very great pleasure they had in seeing those beautiful photographs, and to follow his description of the pathological changes. He had quite demonstrated that the choroid plexus was a secreting gland. That was of the highest importance in neurology.

*The Correlation of Sciences in Psychiatric and Neurological Research.**—By IRA VAN GIESEN, M.D., Superintendent of the Pathological Institute of the Commission in Lunacy of the State of New York.†

BEFORE this body it is unnecessary to revert to the inadequacy of conducting scientific investigations in psychiatry along the restricted plan of confining the research to material found within the asylum by some one exclusive department of investigation, such as the routine governed and mechanical methods of microscopical research. This restricted plan has largely governed psychiatric research up to the present time. Now, however, that many of the sciences tributary to psychiatry have attained a growth and capacity to be of service in psychiatric research, the restricted plan of research may be relegated to the past.

The phenomena of insanity are manifold, and the comprehension of them can only be grasped when viewed from many different standpoints—from the standpoints of many sciences. A co-operation of many sciences will bring forth a rich return

* For presentation to the Annual Meeting of Medico-Psychological Association, Edinburgh, 1898.

† In an official report of the Pathological Institute of the New York State Hospitals to the State Commission in Lunacy for transmission to the legislature, the writer has endeavoured to urge the necessity of a more comprehensive view of study of the science of psychiatry. This report is composed of the following sections:

1. The beneficial results of scientific investigation of insanity.
2. The inadequacy of the present methods of investigating nervous and mental diseases.
3. The correlated branches of research in the scientific investigation of insanity.
4. The unclassified residuum.
5. General remarks on the organisation and conduction of the Pathological Institute.

From its nature this report had to be written in an untechnical form. This paper embodies in substance Sections 3 and 4 of this report.

of theoretical and practical results. A many-sided comprehensive scientific investigation of insanity is at present an imperative necessity. We are on the threshold of a new era in the study of the nervous system in both its normal and abnormal manifestations. The inauguration of this era requires the many-sided investigation of the phenomena of insanity. Different branches of science must be co-ordinated and focussed together as a search-light on the mysteries of mental diseases. They must all work hand in hand. They must be linked together and correlated, otherwise the whole aim of the work is defeated; the investigation will become one-sided and restricted, and what few facts are gained will not be open to comprehensive interpretation.

In accordance with the tenor of these introductory remarks,* the director has established several departments of scientific research at the Pathological Institute for the investigation of insanity, and each of these departments is presided over by an associate who has made a life study of the subject under his charge.

Without further preface I may invite your attention to the plan of the correlation of sciences in the investigation of nervous and mental diseases, a plan which brings psychiatric research into the great broad domains outside the province of the asylum, and which at the same time does not neglect the value of many important scientific problems within the sphere of the asylum. If, on the one hand, protests are made here and there against the exclusive plan of restricting psychiatric research to asylum material, on the other hand a corresponding endeavour has been made to indicate the more inviting fields of psychiatric research open to the comprehensive plan of the co-ordination of many branches of scientific investigation.

This glance at the value of the correlation of sciences in the investigation of mental diseases may perhaps be presented by reviewing the several departments of investigation established at the scientific centre of the New York State Lunacy System. Such a review must be made exceedingly brief, and touch only on salient features. These several departments which have been deemed necessary for a broad, comprehensive investigation of mental diseases are as follows:

- I. Psychology and Psycho-pathology.
- II. (A) Normal and (B) Comparative Histology of the Nervous System.

* This refers to Section 2 ("The Inadequacy of the Present Methods of Investigating Nervous and Mental Diseases") of the report from which this paper is extracted.

III. Cellular Biology.

IV. Pathological Anatomy, Bacteriology and Physiological Chemistry.

V. (A) Experimental Pathology and (B) Hæmatology.

VI. Anthropology.

It will now be in order to review these several departments in their serial order, to consider how their investigations bear on insanity, and their relation and combined value in solving some of the problems in mental and nervous maladies.

I. DEPARTMENT OF PSYCHOLOGY AND PSYCHO-PATHOLOGY.

The crowning glory of psychology in these days is its emancipation from metaphysics. Psychology has become a science. It has finally shown that the phenomena of the human mind are not vague and mysterious, but that their understanding is to be gained by methods of investigation such as are pursued in elucidating the phenomena of the world of life and matter generally; by means of the same general methods of investigations which we use in gaining knowledge of a distant star or tiny organism. Modern psychology is hard at work at the laboratory table, gathering facts, using instruments of precision, conducting experiments, assimilating similar work from kindred branches of science. In brief, modern psychology is one of observation and experimentation as against speculation on the nature of the soul. It is building a foundation of facts to rest the superstructure of its doctrines and generalisations and laws of phenomena of the mind. All this has been brought about practically by the development of the science in this century. Weber and Fechner introduced scientific and inductive methods into psychology. They founded psycho-physics. Fechner invented new methods to study the laws governing the relations of the intensity of sensations to their stimuli. Helmholtz contributed much to psychology by his psycho-physiological studies on sensations. His magnificent intellect enabled him to apply the methods of a whole group of sciences, for he was mathematician, anatomist, physiologist, and a brilliant worker and technician with the microscope in unravelling the tangled fibres of the nervous system. Wundt introduced into psychology the most valuable of all methods in science, namely, the experimental method, at the Psychological Institute at Leipsic. In England John Stuart Mill, Bain, Spencer, Ward, Sully, and others, in Italy Mosso and others, have contributed their share to psychology. The names of

Professor James and Professor Münsterberg are not to be omitted in this hasty sketch of the evolution of psychology into an exact science.

If the labours of general normal psychology have grown more scientific and practical, the work of psycho-pathology, embracing the psychological study of abnormal or pathological cases, has turned out to be of special importance not only from a theoretical standpoint in revealing the inner organisation of mental life, but also from a purely practical standpoint, since it has furnished the key to the understanding and even the *treatment* of functional nervous and mental diseases. The results of psycho-pathology, some of which were obtained in our Institute, are brilliant in the extreme; they may be considered a treasure for medical science in general and for psychiatry in particular. No psychiatrist, no neurologist, can be efficient in his respective science without a knowledge of psycho-pathology. Functional neurosis, that *pons asinorum* of the neurologist and psychiatrist, and of the medical profession in general, can only be intelligently studied and successfully treated through the medium of psycho-pathology. Psycho-pathology is the *sine quâ non* of the science of insanity, because insanity is a manifestation of more or less persistent pathological phenomena of consciousness, and psycho-pathology alone possesses the methods of investigating these pathological phenomena.

The work of the French school is particularly important because of its remarkable contribution to the science of psycho-pathology. The French school, with Ribot, Binet, and Janet at its head, has been studying man's subconscious domain, a subject of the most profound importance, not only in that it touches the heart of man's social attributes, but that the understanding of the nature of the subconscious is absolutely essential for any intelligent conception of the cause and course of mental maladies.

Finally the brilliant psychological and especially the psycho-pathological studies of Dr. Sidis, *on dissociations in consciousness, linked with the parallel physiological dissociation of different realms of the brain, mark an important stage in the progress of psychology, and particularly psycho-pathology.* In Dr. Sidis' researches and studies of psycho-pathological cases, parts of the brain were dissociated from each other, and the parallel psychic manifestations could be studied by themselves. Such experimental and clinical investigations help not only to understand, but also to treat the similar isolated fields of

consciousness in different forms of nervous and mental diseases.

Psychiatry is especially indebted to psycho-pathology, because it is only through psycho-pathology that psychiatry has any hopes of becoming a science relevant to its subject matter, and of having practical methods of treatment based on a solid scientific foundation. In fact, we believe that psycho-pathology will ultimately replace the present would-be science of psychiatry. This sounds paradoxical, for psychiatry is generally considered to be the science of insanity. It claims the insane as its own. Unfortunately, psychiatry is a science in name only; it endeavours to be scientific, but fails in its attempt.

Psychiatry, in a certain sense, is an overgrowth of applying the methods of investigation of bodily diseases to those of the mind. Now it is absolutely hopeless to expect that methods applied to investigations of symptoms of somatic diseases are fit to apply to the investigation of mental maladies. These methods are absolutely incompetent, and even to a certain extent irrelevant.

The observation of the abnormal phenomena in insanity relates to two groups of manifestations—the *somatic* and the *mental*. The *somatic* or *abnormal phenomena of the body*, including the abnormal manifestations of the lower parts of the nervous system, such as paralysis and the coarser and more obtrusive abnormal symptoms of the sense organs, may be observed by the *clinical* methods of investigation. But in the study of *abnormal mental phenomena*, the disturbances of the higher forms of consciousness, and the whole domain of psycho-motor phenomena concomitant with dissociations of the higher spheres of the brain (where the nerve-cells reach their highest complexity of organisation in communities, clusters, and constellations) lie beyond the scope of clinical methods of observation, and fall within the province of *pathological psychology* or *psycho-pathology*.

It should be more universally realised that there is a sharp dividing line between the efficacy of *clinical* and *psycho-pathological* methods of investigation in the study of insanity. This is an important matter, and one about which we should have clear and definite ideas in order not to make the mistake of believing that mental phenomena may be competently observed by clinical or somatic methods of investigation.

Psychiatry, obeying the natural laws governing the general progress of science, is still clinging to clinical methods of

investigation, in attempting to explore a territory beyond their scope. No fault is to be found with psychiatry for this state of affairs. If any criticism were justifiable, it should be regarded unfortunate that the psychologist has been so backward in taking up the study of pathological psychic phenomena, or psycho-pathology, and paving the way for the psychiatrist.

In discussing advance work in the study of abnormal organic life in the hospital, let us relegate *clinical* methods of investigation to their proper province, and not attempt the impossibility of stretching them over into the domain of abnormal mental phenomena, which can only be efficiently investigated by the methods of *psycho-pathology*. This same distinction between *clinical* and *psycho-pathological methods of investigation* deserves reflection in the study of *nervous diseases*. Psychiatry ought to embrace both fields of research in the study of insanity, the mental as well as the somatic; namely, the investigation of the abnormal somatic phenomena and the pathological phenomena of the lower parts of the nervous system by clinical methods, and the investigation of the pathological mental phenomena by the methods of psycho-pathology.* It would seem appropriate, however, at present, to pin psychiatry down to the former domain where it belongs, and assign the latter to its proper sphere, pathological psychology or psycho-pathology. It is questionable if the psycho-pathologist would concede that even the pathological manifestations of the lower parts of the nervous system (and the effects of disease of these lower portions upon the higher ones), especially in functional diseases, can be properly and completely investigated by the clinical methods of neuro-pathology and psychiatry. For all parts of the nervous system are too intimately inter-related in an organic whole to expect that the normal or pathological manifestations of these lower parts of the nervous system may be thoroughly comprehended by being isolated from the rest of the system and studied by themselves; or that the phenomena of any part of the system may be fully explained without a comprehensive knowledge of the phenomena of all other parts, the highest, the lowest, as well as the intermediate parts. Viewed in perspective, the foreground of consciousness

* These methods and their application to the investigation of pathological mental manifestations are described by Dr. Sidis in a work coming from the Department of Psychology and Psycho-pathology, now in press for a coming number of the *Archives of Neurology and Psycho-pathology*.

looms up beside the activity of the highest spheres of the brain composed of the superlative *constellations* of neurons, while the vanishing point stretches away far down beside the activities of the lower and lowermost parts of the nervous system composed of mere elementary *chains* and *series* of nerve-cells. Thus psycho-pathology dealing with the pathological manifestations of consciousness *comprises a study of the phenomena of the lower parts of the nervous system* as well as the higher portions, and embraces especially the *inter-relation between the two sets of phenomena in functional diseases*.

In the natural evolution of medicine, symptoms of bodily disease were worked out and differentiated first; then, after a wearisome halt behind all other departments of medicine, insanity was finally recognised as the symptom of abnormal conditions of the brain, and the methods of studying bodily symptoms were dragged over into the field of mental symptoms.

Psychiatry is an art and poses as a science. As an art it has done much. The simple recognition of the fact that insanity is a symptom of abnormal brain conditions, and the beating down of the ignorance of superstition which held the insane to be possessed of devils, accomplished an enormous amount of good, and resulted in an enlightened care of their material welfare in our present hospitals for the insane. But we ought not to mistake these advances in the art of psychiatry and think that they are scientific advances. In its wider sense, the art of psychiatry attends to the welfare of the insane as a dependent and helpless class upon the community.

The science of psychiatry deals with the whence and wherefore of mental diseases. The answer to these questions, however, psychiatry as a science has utterly failed to accomplish. A very simple and most elementary stage in the science of psychiatry was the recognition of the general fact that insanity is the symptom of pathological brain processes. This recognition rescued the insane from social revenge, at a later period from social indifference, and finally stimulated the active interference on the part of society for their welfare and humane treatment in the modern hospital of to-day. If all this progress in the art of psychiatry has been born of such an elementary and embryonic stage in its evolution as a science, how much more are we to expect in the prevention and cure of insanity in the future progress of this science?

For as a science psychiatry is yet unborn, and can be brought into the world only by the aid of psycho-pathology. We now realise clearly the fact that writings from the standpoint of psychiatry as an art must not pass for scientific disquisitions.

The psychiatrist on account of the incompetency of his methods is driven into the art field of psychiatry under the delusion that he is doing scientific work. Many in the field of psychiatry unconsciously bear out the criticism that scientific methods of investigating the symptoms of mental disease are merely an overgrowth of the methods used for investigating symptoms of bodily disease, by writing fine descriptions of the bodily ailments of the insane. Fractures and dislocations of the insane, the formation of their teeth, their palates, their hair, the occurrence of various complicating body diseases, are published in detail because the present psychiatric methods of investigation are better adapted to this sort of observations than for the investigation of insanity itself. Others find an opportunity for writing on medico-legal matters relating to the insane; still others find distraction in the elaboration of statistics; others, again, in the field of therapeutics. Therapeutics, it is true, based on empirical knowledge of drugs, has the recommendation of much common sense, because the knowledge gained thereby is founded on experience; but experience without reason is blind. The administrations of drugs, particularly in the insane, must rest on a rational basis, and this rational basis cannot come until we have an understanding and scientific explanation of insanity. When that time comes we may give fewer drugs, and probably in less quantities.

The pointing out of the unscientific character of this kind of literature may be unwelcome or unpleasant to many who are in daily touch with the insane. But if larger, broader, and more inviting fields of real scientific investigation are indicated, no fault ought to be found with this presentation of the status of psychiatry. This should be reserved for those who criticise the work of the psychiatrist unintelligently, and who offer no new pathways for the old ones. It must not be understood that this pseudo-scientific psychiatric literature, substituted for scientific work now possible by the advance of science, has no value. It has its peculiar interest; the only trouble with this psychiatric literature is that its fields of investigation are harrowed out.

The investigation of the somatic phenomena of the insane

is of the most vital importance not only theoretically but practically in their treatment, because from the body is derived the nourishment and the source of energy of the nervous system. It is therefore of the utmost consequence to understand the relation of disorders of the body to the interferences with the food supply of the nerve-cells and the exhibition of toxic agents to these cells. The general somatic symptoms in insanity should be re-written and revised as often as there are new discoveries and new theories in the progress of the pathology of bodily symptoms. Moreover, the bodily symptoms in each case in the hospital as an individual, irrespective of its class grouping or particular form of insanity, should receive detailed investigation because of the primal importance of the relation of the body to the brain.

We must be in possession of all the knowledge possible regarding the bodily ailments of the insane and of those things that pertain to psychiatry as an art, but most of them are indicating a tendency towards stereotyping in the journal literature; and, frankly speaking, gynæcological matters, sprains, dislocations and fractures, the symptomatology of mere secondary complicating diseases of the body, such as fever, &c., are really rather roundabout ways of getting at the scientific investigation of the explanation of the *mental symptoms in insanity*.

As an example of the tangle in which psychiatry finds itself at present, one may point to the hydra-headed classifications of mental diseases with fifty-four varieties of mania, and an equal number of melancholia, given in a standard compendium. There must be something wrong with a science that finds itself in such straits. Psychiatry has no methods appropriate for the investigation of abnormal mental phenomena. It must broaden out. As a science, psychiatry is absolutely dependent upon psychology and psycho-pathology and their co-relative branches of science. Psychology and psycho-pathology have developed the real methods for gaining the facts, observing the phenomena, and conducting the experiments that psychiatry needs. The great value, then, of the Department of Psychology and Psycho-pathology at our Institute is paramount in reviving the suspended animation of psychiatry.

It is equally unfortunate that both neurologists and psychiatrists have a tendency to view psychology as so much metaphysics, or to sum up the whole practical utility of psychology and psycho-pathology with the word hypnotism,

as though the sum total of the immense value of its methods of investigation and practical lessons of their teachings are bound to be centred about the phenomena of hypnosis. If there is to be any ultimate, tangible, and firm basis for the understanding of mental diseases, and a consequent rational treatment and classification of them, it is surely to come as a result of the use of the methods of psychology and psychopathology. Space forbids any more than an allusion to the great value of understanding the psychic phenomena of the normal individual by studying the disordered psychic phenomena in abnormal individuals. Scientific researches of normal, mental, and nervous processes seldom have their full value without the observation and experiment of pathological cases, themselves nature's experiments. In many forms of insanity nature is performing experiments, more ingenious and valuable for study than the psychologist, restricted to the study of the phenomena of the normal consciousness, could ever devise. Normal psychology has much to learn and profit by in exploring the domain of pathological psychology.

In one instance, at least, under the direction of Kraepelin at Heidelberg, the results of studies in pathological psychology have been most satisfactory in clearing away some of the mystery surrounding the origin of mental diseases. The extensive experiments at this school on the subject of fatigue of the nervous system have already stimulated a more exact and broader view of the study of the symptoms of insanity. But even this school has failed to study mental diseases directly at their fountain-head ; it is only through such a work that we can get an insight into the nature of mental aberrations. The Department of Psychology and Psychopathology at our Institute devotes its time mostly to the study of pathological cases.

It will not be inappropriate here to make a mere allusion to three prominent cases in which the Department of Psychology and Psycho-pathology has not only cleared up much of the explanation of the symptoms, but worked out the laws of the disease, the methods of cure, and applied them successfully. Psycho-pathology yielded definite tangible results of the highest value.

The first case was from the Binghampton State Hospital, and was studied in conjunction with Dr. William A. White. The case presented limitation of the field of vision, accompanied by occasional attacks of delirium and many other phenomena of mental dissociation. The case was closely

studied experimentally; very important phenomena were elicited, and a general method for the investigation and cure of similar cases discovered.

The second case was sent to the Institute through the courtesy of Professor B. Sachs, of New York city. It was one of functional hemianæsthesia and ataxia complicated with organic disorders. Investigation controlled and eliminated the functional disorders, which were of long standing, and had previously resisted all attempts at improvement.

The third case, known under the name of "general irretaceable amnesia and double consciousness," yielded theoretical and practical discoveries of the most brilliant nature to science in general and to psychology and psycho-pathology in particular. From the investigation of this case were deduced laws guiding treatment for future cases, which, up to the time of these researches, were left to the care of providence as lying beyond the ken of human knowledge.

All of these cases were quite beyond the use of drugs, and far beyond investigation by any of the methods which neurology and psychiatry make use of, and in both cases the treatment based on theoretical studies in psycho-pathology was crowned with complete success.

The Department of Psychology and Psycho-pathology also works in the lines of *cellular psycho-pathology, correlating the different psycho-motor manifestations with the varied affections of the neuron and fluctuations in neuron energy*. This is an attempt, and the first of its kind, to bring into one comprehensive scheme and embrace in one formula *expressed in terms of the fluctuations in neuron-energy with the concomitant psycho-motor states* the infinite number of bewildering phenomena met with in nervous and mental diseases.* Along with it the laws and principles of inter-relation of the neurons are worked out; these, we hope, in due time may lead to the formation of some important laws for the scientific basis of pathology in general, and of pathology of the nervous system in particular.

This same department in connection with that of physiological chemistry is also undertaking work in comparative psycho-pathology. Diseases like catalepsy, paralysis agitans, or epilepsy, for instance, we are endeavouring to induce artificially in animals; the manifestations are closely studied and experimented upon, and are then correlated with nervous

* Vide "Neuron Energy and its Concomitant Psycho-motor Manifestations," *Archives of Neurology and Psycho-pathology*, April, 1898.

diseases in men that give like symptoms under the same conditions of experimentation.

Enough has been said to insist upon the maintenance of a Department of Psychology and Psycho-pathology at the Scientific Institute of the New York State Hospitals, as the one the most closely affiliated with, and in fact of paramount importance in, the study of insanity.

This department is provided with a reasonable outfit of instruments. It is provided with sphygmographs, cardiographs, pneumographs, chronographs, ergographs, reaction-timers, &c. Some of these instruments have been made to order; others bought in Europe have been much delayed by correspondence. In fact, the equipping of the Department of Psychology and Psycho-pathology takes an amount of time which seems unintelligible to those who might expect work to come forth from the Institute with all the haste that characterises the completion of a business enterprise in this country. The apparatus of this department is as yet rather meagre, and it serves only its most fundamental requirements. In the course of time other instruments will have to be added, as the department and its work will grow and develop. It has been thought unwise, therefore, to add apparatus to the equipment of the department beyond what is absolutely indispensable for the carrying on of the work on hand. The same is to be said of every other department in this Institute. The Department of Psychology and Psycho-pathology is under the charge of Boris Sidis, Ph. D. (Harvard).

II (A). DEPARTMENT OF NORMAL HISTOLOGY OF THE NERVOUS SYSTEM.

The first and very meagre insight into the marvels of the structure of the nervous system begins with Descartes. The keenness of perception of this remarkable man enabled him, long before the microscope had been invented, to portray the structure of the nerve-fibres, both in diagrams and in text. He considered them as minute tubules which conveyed the animal spirits from the brain to the muscles. If we substitute for the word animal spirits the modern phrase nervous impulse, Descartes, in his idea of the nerve-fibres, was not so very far behind our conception of this structure at the present day.

In the early part of this century the microscope demonstrated that the nerve-fibre was not hollow, but contained a solid core, or axis. A little later investigators discovered that the brain not only contained untold numbers of these nerve

tubules, but myriads of nerve-cells. Workers in microscopical anatomy were unable to solve the riddle of the relationship of the cells to the fibres. No one knew where the fibres came from, or where they ended, nor was any one able to make out the least connection of the fibres themselves. It was, therefore, impossible to obtain any idea as to how this greatest marvel of creation did its work.

In the early thirties the minute anatomist had to study his material in fresh condition. He had no methods of preservation, nor did he enjoy the advantages of being able to cut thin, diaphanous slices from the brain to view under the microscope. To-day we have the whole armamentarium of the chemist to preserve the brain in a hundred different ways, which give as many variations of methods of study. The whole record of progress in the structure of the brain invariably goes hand in hand with a similar record of improvements in the microscope and other apparatus and in technical methods of investigation.

During the forties and fifties investigators began to shed some light on the obscurity of the structure of the nervous system by discovering that the cells and fibres were not independent of each other, but that the fibre was a prolongation of the cell, an outgrowth of its body. This at least cleared up the question as to the origin of the fibre, and physiologists derived comfort from this fact, in that they had a reasonable explanation of how, in a fundamental fashion, the nervous system operated. The nerve-cell, so to speak, was the headquarters of nervous operations, and its enormously long outstretched arm in the form of a fibre, was a device to carry the impulse to some distant part. This important fact as to the connection of nerve-fibre and nerve-cell did not contribute as much toward advancing knowledge of the nervous system as might have been expected, and until fifteen or twenty years ago the structure of the nervous system was still a puzzle. The whole nervous system was an inextricable maze of an entangled network, and its unravelling seemed impossible. There was endless controversy, born of hypotheses which had an unstable foundation of facts. But within the past ten and fifteen years the obscurity that enshrouded the nervous system has been replaced by a clear and definite insight that is almost startling.

In 1873 a distinguished Italian investigator discovered a method which has revolutionised our whole knowledge of the structure of the nervous system, and has opened boundless

fields of research in manifold directions. From the results of this method of investigation we have a final solution of the structure of the nerve-cell, the nerve-fibre, and their connections. Thus it appears to-day that the nerve-cell is like a tiny octopus. Like this animal it has a body whereby it attends to the process of digestion and assimilation. In this body a food supply from the blood-vessels is elaborated into materials which enable the cell to do its work. Like the octopus, too, from one end of the body of the nerve-cell spring out an enormous number of branching arms or tentacles; from another part of the cell body arises another arm, but different from the shorter arms or tentacles in that it is of exceedingly great length, and passes away from the body to distances hundreds and thousands of times the diameter of the cell itself. This very long outstretched arm of the nerve-cell octopus—the nerve-fibre—sometimes passes to the outer parts of the body, where it may receive messages from the eye or ear, or other sense organs; sometimes the long arm passes out to other parts of the nervous system, to transmit a particular impulse from one part of the nervous system to another. These nerve-cell octopi are ranged together in series, groups, clusters, and communities of exceeding complexity, even up to the form of constellations. A given nerve-cell octopus passes its long outstretched arm so as to touch the tentacles or shorter arms of a second octopus. The second one, in turn, passes its long arm to the tentacles of the third, and so on through an infinite set of combinations which have their highest complexity of arrangement in the highest spheres of our brain, which are the last parts to develop, both in the evolution of species as well as the individual, and which are ever unstable and prone to disintegrate by reason of this very process of retraction of the nerve-cells. In the lower parts of the nervous system retraction and the corresponding dissociation of the functioning groups of nerve-cells is less liable to occur under the influence of pathogenic agencies. For here the functions are phylogenetically older and tend to approach more or less stereotyped nature; and since stability of organisation of parts of the nervous system depends on the frequency of the impulses transmitted through the group of neurons, the lower parts of the nervous system are more firmly united than are the highest spheres of the nervous system.

The most interesting feature of this latter-day conception of the make-up of the nervous system, is that the nerve-cell,

like the octopus, possesses power of movement over its shorter arms* or tentacles. While the long arm of the nerve-cell is probably fixed, its short arms, like the tentacles of the octopus, may be thrust in or out. Consider for a moment what happens when the nerve-cell retracts its tentacles. The message can be no longer transmitted. The nerve-cell has thrown itself out of the circuit of the long arms of its fellow associates in a given group or community; they are no longer in contact with the retracted tentacle. But we should conceive that as a rule whole groups, communities, clusters, and constellations of nerve-cells functionally correlated retract *en masse* rather than individual cells. Cells cannot work as isolated individuals in the higher parts of the nervous system; they are invariably members of assemblages which have been physiologically linked together by education, use, and function. There may be partial retraction (qualitative retraction) of the individual members of one functionally linked assemblage of neurons from another assemblage, but in the phenomenon of retraction we are to picture it occurring in a mass of nerve-cells belonging to some particular assemblage, and occurring more or less simultaneously.

A message can no longer be delivered and transmitted from one part of the nervous system to another, if a mass of these nerve-cells break the circuit by retracting their arms. This is the secret of many a puzzle and mystery enveloping a very great mass of psycho-motor manifestations of the human nervous system. The object which the nerve-cell apparently has in view in retracting its arms is to avoid overwork and withdraw itself from hurtful stimuli. Retraction, apparently, of the arms of the nerve-cell is a signal of exhaustion. This retraction and expansion of the arm of the nerve-cell, in groups, systems, and communities of brain cells, drawing it in or out of the circuit of transmission of nervous impulse, is the final unveiling of the secret of a whole host of mental phenomena which hitherto have seemed mysterious to the last degree. These attributes

* Future observations, I think, are liable to show that this view is not correct. From a study of the identity of differentiation which the general structure of the neuron undergoes in the neuraxon in the form of long parallel filaments incorporated with distinct microsomes with analogous modifications of the cyto-reticulum in other somatic cells (muscle cell, ciliated cell, leucocyte, chromatophores, &c.) subservient to motility, my own observations incline me to believe that the axon is the retractile and expansive structure of the neuron rather than the dendrons or gemmules.

of extension and expansion of the nerve-cell cannot fail to attract even those with the most casual interest in the operations and development of the human mind, and hold one spellbound in the vast flood of light shed upon the explanation of insanity. Mysterious cases, for instance, of individuals who sometimes from a blow upon the head or other causes wake up and find their past lives a blank, and who virtually begin to live their lives over again as it were in a new world, such as a case recounted in Dr. Sidis' book upon the psychology of suggestion, may serve as a fair example. These cases of double consciousness, so-called, receive their only explanation in retraction and expansion of the tentacles of the nerve-cell octopus, *dissociating functioning associations of cells*.

The phenomena of hypnosis, hysteria, and of the whole great important groups of *psychopathic functional diseases* are to be explained in the same way. Some of the violent manifestations of insanity seem to be due to the retraction of the highest constellations of nerve-cells that dominate and control the lower parts of our nervous system. The lower centres being unloosed from the control of the higher ones, give rise to the phenomena found in some forms of mania (psychopathic). Discrimination as to significant and insignificant stimuli is cast aside, so the maniac is prone to respond to any passing zephyr of stimulus with a storm of excitement. His subconsciousness lacks the normal control, and is most prominently in the foreground.

The phenomenon of retraction of the neurons is also, I most firmly believe, the explanation of the cardinal symptoms of epilepsy in the manifestations of the fit. Here the retraction of the constellations and clusters in the higher parts (association centres of Flechsig) from a given stimulus is very sudden; the lower portions of the brain (sensory spheres of Flechsig, particularly tacto-motor zone) being suddenly loosed and dissociated from the inhibition and control of the higher portions, the energy of the neurons of these lower portions of the cortex is suddenly liberated with the corresponding psycho-motor phenomena.

Every one is familiar with those forms of insanity in which the patient seems oblivious to his outside environment, shown in some forms of melancholia (psychopathic). There are, again, instances where the whole foreground of consciousness has been *partially* split off by a retraction of the nerve-cells constituting the higher spheres of the brain.

These spheres are asleep. A cleft lies between them and the rest of the nervous system, caused by this phenomenon of retraction. Depending upon the qualitative degree of retraction between various assemblages of neurons in the brain some forms of psychopathic mania or melancholia might result. Thus we see that one part or another of the brain may be dissociated from the rest, and naturally the parallel manifestations of the mind are thrown out of gear.

This hasty sketch of the department devoted to the anatomy of the nervous system, perhaps, shows best of all a faint glimpse of the directions we are striving in to contribute something toward the investigation and explanation of insanity.

I should not, however, be guilty of conveying the impression that merely because the anatomist has discovered these wonderful facts about the shape of the nerve-cell and its connections, or that some evidence from my own studies tends to prove the phenomena of retraction, that the phenomena of mental operations may be postulated therefrom. The most perfect knowledge, even down to the understanding of the very molecules of the nerve-cell, would not help the anatomist or the chemist to postulate the laws and phenomena of *thought* and *consciousness*, for these are not *products* of nerve-cell activity. The brain does not secrete thought, as the kidneys secrete urine; thought is not a material thing; it can neither be weighed nor measured. A sensation of colour, for instance, as experienced by the eye, has no material existence in the physical world. We can only speak of the phenomena of consciousness as running parallel or being concomitant with the workings and metabolism of the nerve-cell, lest we drop into the pitfall of psychological materialism, which has been utterly abandoned long ago.

To the psychologist belongs the study of the phenomena of consciousness parallel to the physics, physiology, and anatomy of the nerve-cells in the states of these associations and dissociations. The physiological process of retraction and the changes in form which the nerve-cell undergoes, causing these dissociations in consciousness, fall within the sphere of the anatomist. The object of reverting to the department of psychology and psycho-pathology is briefly to point out the incongruity of setting forth the claims of any of these departments of our institute investigating insanities as distinct, isolated methods of research. They must all be linked together and work hand in hand. A concrete example of

this is the apportionment and yet linking together of the work in the departments of psychology and normal anatomy of the nervous system. The psychologist, for instance, studies the manifestations concomitant with the physical process of retraction of the tentacles of the nerve-cell octopus. Working conjointly, the psychologist and the anatomist show, in an ideally scientific way, the stages of the *parallelism* of the physical process in the nerve-cell and the corresponding psychic phenomena. Thus while the knowledge of nerve-cell anatomy and physiological mechanism does not postulate a knowledge of mental phenomena, the value of seeing the *parallelism* between the *material processes* and the *psychic phenomena* should be strongly insisted upon by the conjoint work in these two departments.

In the next section, devoted to the status of the science of pathology in investigating the nervous system, the same feature crops out again. In the abnormal anatomy of the nervous system as well as in the normal anatomy the necessity for correlated work with psychological and psychopathological investigation is still more evident.

The anatomist, however, is not by any manner of means in a position to write the last words about the structure and architecture of the human nervous system. This goal will not be attained for many years to come. He has only been able thus far to straighten out the intricate structure and connections of the comparatively elementary chains and series of nerve-cell octopi in the lower and simpler parts of the nervous system. The unravelling of the connections and associations of nerve-cells in the highest parts of the nervous system, where the cells are evolved in enormous complexity of connections in the form of constellations, hardly has been begun. By studying the developing infant, however, and patiently working at the brain of the growing child, we hope to attain in the future our best light upon this obscure domain of the anatomist.

Professor Flechsig has, however, after twenty years of work, formulated a plan of architecture of the brain which, it seems to me, is the key for a final solution of the intricacies of higher brain architecture. This plan was studied out in the brains of human embryos, children at birth and growing infants, and children where the different parts of the nervous system can be identified because they make their appearance in a progressive series from the simple, fundamental, and phylo-

genetically oldest parts to the more complex, highly organised, and most recently evolved portions.

In accordance with this plan of Flechsig, but a small portion of the brain cortex—only one third—comes in contact with the outside world through the chains and series of nerve-cells connecting the sense organs, while the great mass of the brain cortex—the remaining two-thirds—has no direct connection with the outer world, but connects and associates the scattered brain areas connected with the sense organs or muscles.

This division of the brain into these two parts—the smaller portion known as the sensory spheres and the larger the association centres—gives a wonderfully clear view into many forms of insanity if we take into account the concomitant psycho-motor phenomena produced by different degrees of dissociation of these parts, but especially by dissociations occurring in the association centres themselves by retractions of communities, clusters, and constellations of nerve-cells.

The sensory spheres are scattered about in the surface grey matter of the brain. A patch at the occipital end of the brain is the sensory sphere for vision, another corresponding to the sensory sphere for sound is situated near the apex of the temporal lobe. Similarly olfactory, gustatory, and tacto-motor sensory spheres are located in other parts of the cortex. Between the sensory spheres are interpolated the association centres. The more fundamental portions of the association centres operate to render possible a simple order of recognition of the impressions received in the sensory spheres by associating them together. In the higher regions of the association centres a still more complex order of recognition of sensory and motor impressions is possible. Finally, the constellations of nerve-cells in the frontal lobes afford a basis for the highest forms of syntheses of consciousness. *This is the association centre of association centres.*

It is in these association centres and in their connections with the sensory spheres that the phenomena of retraction of the nerve-cell play such an important part. One can well conceive the chaotic condition of ideas, or imperfect power of recognition, and a host of other abnormal mental phenomena, when retractions occurring in the groups, communities, clusters, and complex constellations of nerve-cells split off the association centres from each other or from the sensory spheres, and *produce the corresponding dissociations in consciousness.* In the lower animals the association centres grow

smaller and smaller, and finally, say, for instance, in the lower mammals, the sensory spheres lie contiguous with hardly any vestige of the association centres between them.

For the study of insanity the understanding of the structure of these higher spheres of the nervous system is of the most vital importance. It is the instability of these highest parts of the nervous system which is the essence of the whole question of insanity. Hence when we consider this aspect of the value of the department of normal histology of the nervous system, we find that its offices are absolutely imperative.

With the exception of the discovery of the neuron theory, Sidis' conception of the dissociations of consciousness, the theory of neuron energy fluctuation, the theory of the retraction and expansion of the neurons, and Flechsig's plan of the association centres and sensory spheres of the brain, are the greatest discoveries which have ever been put forth in the history of our knowledge of the nervous system. The effect of the application of these four great hypotheses (for observations* at present, in my own belief at least, are increasing their validity) will, indeed, be revolutionary in the domain of mental and nervous disease.

Observers in this department should pursue studies of the normal histology of the nervous system only after a very thorough antecedent study of the minute anatomy of all other parts of the body.

II (B). DEPARTMENT OF COMPARATIVE NEUROLOGY.

The value of the comparative study of the nervous system in both health and disease has already been hinted at in the argument for the practical value of the department of cellular biology in the scientific study of insanity. Man's nervous

* Apathy's theory of the concrescences of the neurons in the lowest parts of the nervous system is perfectly tenable. But we should remember that the stereotyped function existing through eons of time in these lowest parts of the nervous system presupposes a fixed relation of the neurons to each other. In the evolution of the higher centres, however, such as the association centres and probably the sensory spheres, the individual neurons have become independent anatomically, and the impulse is transmitted by physiological contact.

Retraction does not take place in the lowest parts of the nervous system, but must be postulated for the phenomena of the highest portions of the brain. Apathy's theory, in my judgment, should not create distrust in the neuron theory; his theory does not apply to the whole nervous system, but to its lowermost parts, such as pertain to the most automatic and vegetative functions. The homologue of the lowest parts of the human nervous system is found in the leech and other invertebrates that Apathy has studied.

system is a recapitulation of the progression of development of the nervous system in animals. This recapitulation of the nervous system, embracing its evolution throughout the whole animal kingdom, is too complex to be understood without going back to the prologue in the history of the development in the lowest animals that possess nervous organs. Apparently the first nucleus of a nervous system is found in the fresh-water hydra. This creature can expand and retract a portion of its substance by a very simple mechanism, which is the combination of both the nervous and muscular systems. It appreciates stimuli from the external environment by means of a most elementary sensory apparatus, the foreshadow of the nervous system in higher animals, and reacts by means of a primitive muscular mechanism. These two sets of mechanisms are not differentiated, as in the higher animals, into two distinct organisations, but are so alike and undifferentiated that it is difficult to distinguish the one from the other. In a somewhat higher form of development, as in an ascidian, the motor and nervous systems have become differentiated. This creature has an outer tunic, an inner digestive coat, and a muscular sac lying between the two. The nervous apparatus is exceedingly simple. It is merely a chain composed of very few nerve-cells, one end of which touches the outside tunic, and the other end the muscular coat. When stimuli from the external environment are conveyed to the tunic, the creature, by means of this nervous system, transmits the impulses to the muscular bag, and responds by muscular movements to these stimuli. The very simple nervous system in this creature is the fundamental basis for the building up of the nervous system in the higher animals. This tiny arc of nerve-cells passing between the muscle and the skin in the ascidian is the starting point which nature builds upon in evolving the wonderfully complex nervous apparatus in higher animals and in man himself. Roughly speaking, the difference between man's nervous system and that of the ascidian is not in any essential distinction in the shape and constitution of the nerve-cell, but in the fact that man possesses numerically millions and millions more, in infinitely complex adjustment, of these tiny nerve-cell arcs found in the ascidian.

Passing upward in the scale of evolution from the ascidian, as more and more of these nerve-cell arcs make their appearance, and are evolved into increasingly complex adjustment to each other, the animal gains more and more highly developed functions. In the lowest forms of animal life possessing the

nervous system, the nerve-cells are arranged in simple *chains or series*;* as the evolution of the animal grows more complex, the simple series make a greater variety of combinations with each other, so that they become gathered together into *groups*.* As the scale of evolution becomes still higher, groups of nerve-cells make increasingly complex adjustments in the form of *clusters*.* In still higher forms of animal life, the adjustment of clusters of nerve-cells become complicated into *communities*.* In man we find all the evolutionary series compounded into one complex whole. The elementary form of the nervous system in the lower animal represented in a simple *chain or series* of nerve-cells, is present in the lower and more fundamental parts of his nervous system, such as the sympathetic. The more complex forms are built up into *groups, clusters, communities*, and ultimately in the highest parts of man's brain the *communities* are gathered together in such a variety of combinations as to form an infinite number of highly complex *constellations*.*

In building up this plan of the nervous system from the lowest to the highest creatures, nature makes no sudden strides or leaps. It is a steady progression of piling up the simple series of nerve-cells, such as found in the ascidian, in increasing numbers and complexity of combination until we reach the form of constellations in the highest portion of man's brain. His intellectual attainments, his highest form of consciousness, his self-control, and dominance of the lower parts of his nervous system, run parallel with the activities of these constellations.

Comparative anatomy of the nervous system is invaluable as a method of going back through past ages and of witnessing how man's nervous system has been built up from the simple to the complex. All the chapters in the history of brain evolution are to come from the researches of comparative neurology. We must not expect to comprehend the architecture and phenomena of man's nervous system by considering it as something apart from the nervous system of the creatures whence he is derived. Nature did not make man's nervous system by a special fiat, nor in evolving it did she consider him to be any more or less than the final member of a continuous series in the progression of the evolution of life forms.

Man is to be looked upon as a creature of the past. For nature, in the evolution of the nervous system, has built man

* See Sidi^s, *Psychology of Suggestion*, chap. xxi.

on the same fundamental plan with that of an ascidian. Man's nervous system is a magnificent organisation, but in plan of structure it is the same in the ape, the dog, or even the earth-worm.

Comparative anatomy of the nervous system has often given us the most striking answers to complicated questions in man's brain. For instance, when certain animals leave their aquatic habitat and spend the rest of their existence leading a terrestrial life, special sense organs become useless and disappear during the terrestrial life. The following out of the changes of the brain incident to the loss of these sense organs has thrown most important light upon some of the complicated questions of the nerves in man's brain. The enfeebled development of eyesight in the mole, and the deficient development of his portions of the brain concerned with its visual impressions, have helped us in understanding the central mechanism of vision in man's brain. The enormous development of the sense of smell and of the parts of the brain devoted to the reception of olfactory impressions in the lower animals has been of much service in contributing to the knowledge of the structure of the parts of man's brain connected with his delicate but uncomprehensive sense of smell. In fact, in the study of man's brain we are constantly driven back into the past, when it was in a simpler form, in order to understand its mechanism and operations.

Comparative neurology is of value, not only in helping us to understand the architecture of the nervous system, *but it is also destined to be of great importance in imparting knowledge of the organisation of the nerve-cell as an individual, through the study of comparative cytology of the nerve-cell.* An individual nerve-cell, a single one of the myriads and myriads composing man's brain, is a microcosm taken by itself. We are far from knowing, aside from the problem of how nerve-cells are connected with each other in the brain, how they work as individuals, how they live and die and pass through their whole life history. If we had the most perfect knowledge of all the combinations, adjustments, and associations of the countless hosts of nerve-cells in the brain, in short a perfect knowledge of the architecture, it would be of comparatively little value in the study of insanity, unless we understood the *nerve-cell as an individual.* No one could build a bridge, even with the most perfect and detailed working plans, without knowing the constitution of the building materials. So it is with the nervous system. We

may know much as to its architecture, and in fact are actually daily gaining more and more of this kind of knowledge by a great variety of methods, but we know comparatively little of the working units of the nervous system, the nerve-cells.

The internal constitution of the nerve-cells is the most pressing question of the day in the study of insanity. The all-important question is how the nerve-cell works as an individual, how it conducts nervous impulses, how it assimilates food, its mechanism of elaboration of energy from the crude food-supply which the nerve-cell obtains from the blood-vessels. If there be one all-important question in the production of insanity, it relates to the *balance between food-supply of the nerve-cells and the work performed or withdrawal of nervous energy*. This is a practical question, because every one knows that if more energy is drawn off from the nerve-cell than can be produced from its food-supply, the result is bankruptcy of the nervous system. Any one may see this in his daily walk of life in the man who overworks and over-fatigues his nervous system. We see this bankruptcy of the nervous system everywhere about us in the endeavour to cheat time in the pressure of hurry and haste in the activity of large cities. People expend more energy from their nervous system than they supply through food and rest. Yet such a vitally important question as to the details of the cycles of expended energy of the nerve-cell with relation to food-supply is almost unknown. Here again we must have recourse to the aid of the comparative neurologist. We must ask him to tell us the internal structure and constitution of the nerve-cells in the lower animals, because here the problem may be studied under its simplest condition. We ask him to make experiments, and to select some favourable animal to illustrate the changes of fatigue in the nerve-cell, to tell us what happens when the nerve-cell is deprived of its food-supply, to recount to us the changes in the constitution of the nerve-cell when it is called to expend more energy than it receives in nourishment. Such questions as these are of the utmost importance. As a concrete illustration I might mention an off-hand example in some work which we had undertaken some three years ago in the electric torpedo to determine what happened in the nerve-cell when over-fatigued. Two torpedoes were placed side by side. One was irritated at regular intervals with a sharp instrument, until his electric shocks became less and less and finally disappeared. Thus the nerve-cells in the brain governing the electric organ were

completely tired out and could no longer work. Without giving these nerve-cells time to recuperate, or to gain new energy by assimilating food from the blood-vessels, the animal was killed and the cells compared under the microscope with those of the second torpedo, which remained completely at rest. Thus we had side by side under the microscope, the overworked fatigued cells, and those in a perfectly normal resting condition, which had a full supply of energy. The problem was to determine not so much any outward changes in the form and shape of the cell, as its interior mechanism. Definite changes were found between the two sets of cells, changes that throw some light upon the all-important problem of how the nerve-cell does its work, and carries on its life operations.

The guidance of this department is under C. Judson Herrick, M.S. (Denison University, Ohio).

III. DEPARTMENT OF CELLULAR BIOLOGY.

The science of the cell has accomplished marvels within the past few years, and from the days of Schleiden, Schwann, Purkinje, von Mohl, and Müller there have been vast strides. Inasmuch as the whole body is a vast assemblage of these tiny cells, some working together in a community, as in the kidney, the liver, and the brain, it ought to be easy to understand that the ultimate solution of the workings of the body, both in health and disease, resolves itself into a study of the changes of the individual cells. Virchow, fifty years ago, forecast that the ultimate study of disease processes, particularly in their beginning and essences, must be so devoted. The student of cellular biology looks upon the cell as a microcosm in itself, and his investigations have solved, at least to a large degree, the problem of the physical basis of heredity.

In studying the egg-cell, just after it has started on its growth to produce a new member of the species, the biologist has found that equivalent and equal amounts of a certain element of the cell are derived from both the father and mother. He has shown, furthermore, that these elements are by a most intricate process distributed in equivalent amounts to every cell in the whole body. It is on this ground that Huxley says the entire organism may be compared to a web of which the warp is derived from the female, and the woof from the male. We stand at last face to face with some

intelligent and fact-supporting basis of the mechanism of heredity, and can now have some glimpse of how immutable are the laws of heredity. This material—the germ-plasm—transmitted to the new individual, will surely pass on damages incurred by the ancestors. If a man exposes his germ-plasm to the poisonous influences of alcohol, or still worse syphilis, such damage is not confined to his individual life only, but passes on to the next generation. This damage plays a part in subtracting from the full development of the organism, especially in the most complicated tissue of the body, the nervous system. This subject of heredity is of most enormous importance in the study of insanity, but it were well that discussions of heredity in insanity might more generally rest upon the scientific basis of our present knowledge of the germ-plasm.

Cellular biology has also another province which cannot be disregarded, for we cannot expect to understand the diseases of the nervous system until we have a knowledge of the architecture and functional organisation of this system in the normal individual. The most reliable method of gaining this knowledge is to watch growth of the nervous system in the successive stages of development of the embryo, and thus realize the functional value of different parts of the nervous system. First, the lowest and most fundamental parts of the nervous system appear, those which have to do with the mere organic and vegetative functions of the body. Little by little the higher and more complex parts appear in their turn, so that we can trace, in the growth of the embryo, chapter by chapter, the whole story of evolution in a recapitulated form. The early stages of this study of the embryology of the nervous system naturally fall within the province of cellular biology, for it is in the developing egg that this science has gained its most brilliant achievements.

The province of cellular biology in regard to insanity is so intimately linked with the scope of pathological anatomy that it is difficult to dissociate the two sciences and to discuss them separately. Briefly stated, *pathological anatomy*, or the science which treats of disease processes in the body, *can make further progress only on condition of using the science of the cell*. The whole study of changes wrought by disease processes in the nervous system is absolutely dependent upon the principles and methods of cellular biology.

Perhaps the strongest argument for the value of cytology

or cellular biology in the study of the pathology of mental diseases can be realised when we perceive that Nissl's method itself is really an outgrowth and an application of the principles and exact methods of cellular biology to the nervous system. Without in the least detracting from the fame of its discoverer and the value of his great work, Nissl's method is to be considered more as an extension of the general cytological methods of cell study to the nervous system than as an innovation in a particularised technical method.

Nissl's method and its congeners should be viewed as methods of cyto-pathology which expose the morphology of the whole interior organisation of the nerve-cell in contradistinction to the crude and restrictive methods of the older pathological anatomy. These latter methods merely brought to light the external form and shape of the cells, and gave an account only of the coarser and grosser morbid changes which were so far advanced as to be destructive, inducing obtrusive changes in the *external form* and *contour* of the cells. Nissl's and the cytological methods generally (for Nissl's method of staining is but one of many of these cytological methods), however, exposing the *internal organisation* of the cells, present a hitherto entirely hidden view of the whole *normal* and *pathological metabolism* of the nerve-cell; that is, as far as the process can be comprehended from a morphological standpoint unaided by the conjoint application of physiological chemistry of the cell. It is herein that the Nissl type of method is so valuable for investigation of the diseases of the nervous system, for we are able to see the *beginning* stages of disease process in the *interior* of the nerve-cell.

The whole life history of all forms of mental and nervous disease, except the last chapters, courses hand in hand with morbid changes in the internal organisation of the nerve-cell. When the morbid process has gone on so far as to induce defects in the external configuration of the nerve-cell, it marks the closing scenes of its life. The nerve-cell then passes over into the grave, for these changes are beyond reparation; its life history is closed, its cycles of metabolism have ceased; its delicate mechanism, subservient to the expenditure and restitution of nervous energy, is irrevocably damaged, and no further expenditure of energy is possible except that issuing from the organic dissolution of the cell manifested in non-nervous energy or energy liberated in

the form of heat, or chemical reactions of organic destruction.

Future advances on the whole province of the pathological anatomy of mental as well as nervous diseases, depends upon the application of the principles and methods of cellular biology.

One exceedingly important topic also falls within the province of cellular biology, when linked with the investigation of medical sciences, and this is the study of disease processes artificially induced in the lower animals. The lower animals, even down among the invertebrates, offer us opportunities for elucidating wider and more fundamental truths concerning the cell microcosm than the higher animals, especially man.

Experiments in these lower animals, made up of relatively small colonies of cells in a simpler and more elementary form, constitute one of the most fruitful fields of inquiry as to the behaviour of the cell in the environment of disease processes. In man, and even in the higher animals, when disease processes are experimentally induced the conditions are much more complex, so much so as to frequently hide the fundamental changes of the reaction of the cell as an individual. Since man is simply an aggregation of cells, the same laws that govern the individual cell must also govern his organisation.

The experimental induction of disease processes in the more elementary organism, with a view to study the reaction of the cell in abnormal environment of pathogenic stimuli, under the simplest conditions, seems again, at first glance, to be straying from our proper pathway, the study of insanity. This, however, is not so. The nervous system is made up of myriads and myriads of the same kind of cells, marvellously organised into one organic whole. No other cell in the whole body can compare with the nerve-cell for complexity of shape and internal organisation. It is not sensible to attack the problem of cell-dissolution by selecting for study the most complicated cell in the whole body. It is plain that the proper way is to study first the course of disease processes in the simpler cells. Having learned this, we can forecast what ought to happen in the complicated differentiation of the ordinary type of somatic cell into a nerve-cell, and be prepared to understand what the changes in the nerve cell mean when it comes in contact with abnormal stimuli inducing disease processes.

We may be sure of one thing, that the nerve-cell was at one time much like any of the simpler cells of the body, and

that all these complex structures in the nerve-cells are not new creations or fiats in its evolution from the simple cell, but are merely devices and modifications of the structures present in its simply organised ancestor. In other words, a cell of simple structure like the general type of somatic cell, in undergoing the phylogenetic evolution into the nerve-cell, has not created new and specific elements in order to accomplish the duties of a nerve-cell, but has used its old and elementary structure, and by differentiations and modifications made them fit to accomplish the offices of the nerve-cell. In studying the cyto-pathology of the nerve-cell, one should hold in mind that, notwithstanding the marvellous adaptations of the cyto-reticulum and cyto-lymph of the nerve-cell wrought by evolution out of these fundamental cytologic structures common to all cells, the nerve-cell should not be considered apart from the other cells of the body. The neuron is not a specific cellular creation, its structures are homologous with other cells of humbler organisation in the body, and obey the same general basic laws governing normal and pathological metabolism. The laws which govern pathological processes (and some day these, it is to be hoped, may be expressed in terms of cell energy) operate uniformly for all of the cells of the body. Disease is a single process, but this process manifests itself in a great variety of phases corresponding with a protean expression of symptoms often grouping themselves in a distinct type as a distinct malady. One is, therefore, liable to wrongly consider the phases of the single process as individual entities and distinct processes. Hence various kinds of inflammations and cellular degenerations and other pathological processes are spoken of as individualised processes, whereas these are merely phases of the same single process.

The more cellular biology is used in the study of pathological anatomy, the less tenable becomes the idea of individualising specific morbid processes with specific diseases.

We find it advisable to recommend that provisions should be made for the associate who has the responsibility of this department to visit marine biological laboratories during a part of the summer season at least. Unfortunately, we have in this country, as compared with Europe, but few of such laboratories. Few, however, as they are, they are to be considered as the home and fountain-heads of knowledge in cellular biology. In these marine laboratories are found the best opportunities for extending knowledge of the cell.

Here is to be found a great variety of lowly organised, simply constructed marine organisms to study and experiment upon in the living condition.

Those who are studying the all-important problems of cell organisation by confining their investigations to the cell under normal environment only, hardly take the broadest conceptions of this problem. *The normal cell can never be fully understood without studying the abnormal and diseased cell.* In exposing the cell to the environment of disease processes, nature is conducting an experiment a hundredfold more ingenious than the student of normal cytology could ever devise. It will do no harm to repeat that in the sciences dealing with life phenomena the pathological method is the most fruitful.

Modern specialisation among the branches of science is creating gaps and clefts which contain more important fields for investigation than the individual departments of science themselves. He who can bridge over the rifts between the border lines of several of these sciences will discover the richest domains of investigation and gather in a good harvest of scientific truths. Unfortunately, few can occupy two fields of science, and cover the gap between. A most unfortunate gap, for instance, lies between cellular biology and the pathological anatomy of the human body—cyto-pathology—a term but newly coined. I do not hesitate to say that the overlapping of cellular biology and pathological anatomy opens the richest of all domains for the future progress of medical science.

The Department of Cellular Biology is under the charge of Arnold Graf, Ph.D. (University of Zürich).

IV. DEPARTMENT OF PATHOLOGY, BACTERIOLOGY, AND PHYSIOLOGICAL CHEMISTRY.

The departments of pathology, bacteriology, and physiological chemistry are so intimately linked together in the investigation of insanity that they may be dealt with collectively.

Pathology, comprising the sum total of human scientific knowledge concerning the origin, course, and results of disease, had very simple beginnings. At first noxious and evil humours were supposed to gain access to the blood, and to cause the departures from health. If we translate the term "humours" into the modern expression of toxic substances circulating in the blood, the "humours" of the

older pathologists are not so far from the truth. But whence the humours arose and how they gained access to the blood was all guesswork and speculation, and "humoral" pathology was a mere makeshift to define an unknown something which circulated in the blood and caused the phenomena of disease. In later days those who were concerned in the investigation of disease processes observed with the naked eye what they could of the changes in the body after death from any given disease, and were able to see that many of the symptoms corresponded to gross, coarse, and destructive changes in the various organs. As the microscope improved, and ideas of the cell as the elementary unit of the whole body became more definite and coherent, the pathologist studied these coarser and grosser changes in the organs under the microscope, but even here he saw results rather than beginnings of the processes. Professor Prudden quotes a line from Oliver Wendell Holmes, in which the work of the earlier pathologist is compared to an inspection of the fireworks on the morning after the show.

In those days the practising physician was also the pathologist. He combined both functions. He observed disease in the living, and sought to find out its havocs amid the body structures after death. His methods, however, were limited only to a study of the topography of the lesions of the disease, and *not to the pathological processes themselves constituting it*. In short, he saw results, but knew not whence and how they came. For the real solution of the origin of these processes lay hidden, not in the gross and terminal changes in great communities and masses of cells, but within the subtle recesses of the cells as individuals.

For many years the pathologist was bewildered by the phenomena of inflammation. He was able to describe with much precision facts and observations, but he failed to understand their significance. Meanwhile cellular biology progressed with rapid strides and disclosed the marvels of the cell microcosm. The older pathologists neglected the beginning and saw only the end.

What, perhaps, puzzled the pathologist most before he had learned to peer into the cell microcosm for the solution of his problems, was the great number of important and serious diseases of every-day occurrence which seemed to leave no traces whatsoever upon the body. This was especially the case in many diseases of the nervous system. It was exceedingly perplexing, for instance, to understand

how such a dramatic and dreaded attack of the nervous system as hydrophobia should leave no traces after death. These the pathologist set down as diseases "*sine materia*," or cast them into the makeshift category of "functional" or idiopathic diseases. To-day, however, we understand why no traces may be left in the body from such serious diseases as these. The *secret lies in changes in the very inmost recesses of the nerve-cells themselves.*

The older pathologist concerned himself but little with the cell as an individual. If its shape, form, and contour were unchanged, it passed muster as being sound and normal, without regard to a whole world of changes which might be present in its internal organisation. In scrutinising the effects of disease in the interior of the cell, he looked at the outside of the cell, and not at its vital organisation within, as one might attempt to understand the contents of a book by looking at its binding. Thus, naturally enough, the knowledge of a whole host of diseases, particularly of the nervous system, was passed over unnoticed.

At the present time the pathologist in studying the diseases of the nervous system is actually peering into the mechanism of life operations going on in the laboratory of the cell. He is endeavouring to study the changes in the body of the nerve-cell—changes going hand in hand with its assimilation of food and elaboration of energy. He is able to study the changes which happen within the cell when its food-supply is interrupted or interfered with. When the food-supply of the nerve-cell is by slight increments qualitatively or quantitatively diminished, or, on the other hand, the nerve-cell expends more energy—in states of pathological fatigue—than can be recruited from the food-supply in the blood plasma, the nerve casts off *dead material*, which is removed by the lymphatics. The excretion of these particles—the *metaplasm granules**—is most important in presenting a physical basis and a measure of the slow destructive pathological metabolism of the nerve-cell which is such a prominent factor in the genesis of very many mental and nervous diseases. When the nerve-cell begins to excrete these particles it is an indication of a lack of balance between the crude food-supply of the cell from the blood-vessels and the expenditure of energy. This *excretion of the nerve-cell* is also the indication of senile degeneration, and it is most interesting to view this

* Van Giesen, "Toxic Basis of Natural Diseases." *State Hospital Bulletin*, 1897.

indication of senility of the nerve-cell advancing prematurely in a host of mental and nervous diseases where the expenditure of energy of the nerve-cell has been of a pathological and persistent character.

The pathologist is now busily seeking the degenerations occurring in the interior of the ganglion-cell when exposed to poisons, especially to those generated in the great mass of general body diseases. In the poisoning of the nervous system from general body disease, the pathologist is able to show changes within the interior of the nerve-cell which account for the delirium in cases of typhoid fever, influenza, sunstroke, &c. We are able to study the changes in the nerve-cell wrought by fatigue, to watch the nerve-cell grow old, and the signs that indicate the approach of its decadence. It is particularly interesting to watch the *premature senility* and shortening of the life of the nerve-cell by chronic *alcoholism* and *sypilis*.

Definite laws of the manifestation of energy of the nerve-cell in both health and disease, the expenditure of energy of the diseased nerve-cell, its restitution of energy in recovery from disease, with their concomitant psycho-motor manifestations formulated at the Pathological Institute, are helping to clear away the mystery of the modus operandi of a whole host of mental and nervous diseases.*

The rise of bacteriology is too familiar and of too recent occurrence to need any detailed account of its relation to pathological researches in the nervous system. Bacteriology, in its great public practical services to sanitation, its application by boards of health in the prevention of infectious diseases, the almost miraculous practical outcome of bacteriological studies in the antitoxin treatment of diphtheria, its great service in protecting and forewarning the healthy against disease,—all these services of bacteriology ought to make it clear that the latter is one of the most important departments in medicine for contributing practical measures to the prevention of disease.

The department of bacteriology, it should be expressly understood, does not undertake to carry on researches in the whole domain of the biology of bacteria in general, but restricts its energies to useful ends in the study of insanity, namely, the identification of bacterial poisons which are associated with nervous or mental diseases. This department purposes, however, to keep in constant touch with the broader

* Vide *Archives of Neurology and Psycho-pathology*, April, 1898.

aspect of bacteriology in general as a science, and to keep cultures of many forms of bacteria for the purpose of determining experimentally the action of their poisons upon the nervous system of animals.

When the pathologist beheld the action of these disease-producing bacteria, he at last began to approach the proximate explanation of many morbid processes, and perceived their origin. He now sees that these disease processes are nothing more nor less than chemical reactions between the forces of the body on the one hand and poisons upon the other. The process of disease should in the future be discussed in terms of fluctuations of *cell energy*. For it was soon learned that bacteria are not harmful as a rule by their mere mechanical presence, but on account of the powerful poisons which they give rise to. It is now seen that inflammation is very often the expression of a conflict between the cells of the body and the bacteria with their associated poisons.

The conservative nature of disease processes is most beautifully shown in inflammation. Inflammation is found to be a protective mechanism in the struggle of the organism for its life existence, and is the outcome of a long series of adaptations on the part of the cell. This protecting mechanism against the proximate causes of diseases extends throughout the whole scale of animal life, even to the amoeba. Were it not for this protective adaptation on the part of the body cells, the highly organised forms of animal life, as well as the human race, could not exist, for by long odds the conditions producing disease, especially in civilised life, are in the ascendant over those contributing to normal health.

We must not over-estimate the direct bearing of bacteriology on the study of insanity. Bacteria are very seldom directly responsible for mental maladies, and comparatively rarely for nervous diseases. They do not attack the brain directly, nor is it to be supposed that there are specific bacteria for individual diseases of the nervous system. The action of bacteria in damaging the nervous system is indirect. The brain is so well protected against their incursions that they generally attack some other part of the body: but the nervous system is injured by the *poisons* which bacteria give rise to. The bacterial products enter the circulation of lymph spaces, come in contact with the nerve-cells, and poison them. Not an inconsiderable share of diseases of the nervous system in general take their primary origin in bodily diseases. These general body diseases, such as typhoid fever, pneumonia,

syphilis, smallpox, influenza, scarlet fever, &c., either by their poisons or by interference with the food supply of the nerve-cell, cause it to degenerate. In short, bacteriology and pathology are closely interrelated. It is not alone sufficient for the pathologist to recount the subtle changes occurring within the nerve-cell in disease, and render an opinion to the effect that these changes are due to the action of a poison. We must know what the poison is, and where it comes from. In the solution of this question bacteriology is indispensable.

The physiological chemist goes far deeper than the bacteriologist in identifying the proximate pathogenic stimuli. The devotees of medical science, particularly of pathology, are turning in eager anticipation for the ultimate solution of the question of cell degeneration to the science of physiological chemistry. What the pathologist observes under the microscope, even in the most delicate changes of cell organisation, is really far short of a causal explanation of disease processes. Behind all these morphological changes in the cell is a series of most complex chemical adjustments.

All disease processes are caused by disturbances in the chemical activities of the normal cell. The science of the chemistry of the cell is in its infancy, and the ultimate solution of the occurrence of disease processes can only be explained by the physiological chemist. For it is by means of this science that we can have any hopes of discovering the chemical composition of the cell; the reactions of the cells to poisons; the nature of these pathogenic poisons themselves, their origin, their interference with the food supply provided by the blood to the cells for the elaboration of their energy. When all these problems are solved, the abnormal changes in cells seen under the microscope will be more fully explained.

Physiological chemistry has its specific rôle in investigating insanity. Few of us realise the fact that at every moment of our lives poisons are generated in the body itself, which in health are obviated and eliminated. When, however, some slight hitch occurs in the delicate equilibrium of the chemical reactions going on in the complicated laboratory of the body, wide-spread havoc may occur. A poison generated within the body may escape into the blood, and while it may do comparatively little damage in the body, to the more lowly organised and more resistant body cells, it may still work harm to the sensitive and highly organised nerve-

cells. The nervous system is the most sensitive of all parts of the body to pathogenic toxic substances in general, but it is a most exquisite index of the presence of these poisons arising within the body itself. The conviction is daily gaining ground that many forms of insanity which arise so insidiously are due to self-poisoning. The microscope may show us traces of these poisons, but their source and nature can only be discovered by the method of physiological chemistry. Beyond a certain region of morphological research into the mechanism of the nervous system, the microscope alone proves an utter failure. These poisons generated by the body are of such subtle origin that it would seem almost beyond the power of science to identify or trace them. The physiological chemist attempts to identify them by examining the secretions or the blood. If unable to identify and separate them directly from other components of the body fluids, he is still able to indicate their presence: he injects the body fluids into animals and watches the physiological effects, by which he is enabled to tell whether the body is generating poisonous matters.

In identifying the poisons associated with bacteria the researches of the physiological chemist have been attended in many instances with brilliant success. In tetanus or lock-jaw, for instance, the bacteriologist at first identified the bacteria of tetanus, has studied their whole life history and habits, and has even found this germ in the wilds of Africa, where the natives smear their arrows with mud of certain swamps which become partially dry during the summer season. This earth contains the spores of the tetanus bacillus, and thus the strange fact explains why the victims struck by their arrows often die of tetanus.

The physiological chemist, however, has gone further than this. He has succeeded in isolating the poisonous principles associated with the tetanus bacillus, and is actually able to separate them in the form of a powder, so that one might carry round in his vest pocket the real agent of tetanus, were it not so sinister a substance and so extraordinary a poison, for 0.065 of a gramme is absolutely fatal to animal life. Such a poison transcends in intensity almost anything that we know of among drugs and inorganic poisons. A little of the tetanus bacillus poison goes a good way, and it is not unlikely that many other bacterial poisons are almost as powerful. The poisons formed within the body itself seem to be less fulgerant in their action, of milder intensity and

insidious character, but unfortunately they offset this mildness by their tendency to remain persistent, and this presents a great barrier to the restitution of the nerve-cell, for it is deprived of an opportunity to rest and recover its pathological expenditure of energy.

Seeing that a not inconsiderable volume of mental diseases is caused or prepared for by action of poisons upon the nervous system, especially those of general bodily disease, it is of the utmost importance to trace them and use, as far as possible, practical measures against them. I think, therefore, that pathology, bacteriology, and especially physiological chemistry, need no further words of commendation in the investigation of insanity.

With all of these wonderful avenues of investigation so recently opened in the research of nervous diseases, the pathologist, physiological chemist, and bacteriologist can go but little beyond the mere description of facts and observations. *The real meaning of the great majority of all these changes in the nervous system, especially in mental maladies, their significance and the manifestations associated with them during the life of the patient, can only be made clear through the science of psycho-pathology.*

A curious division has arisen between the practical fields of nervous diseases and mental diseases, which, having extended into the scientific investigation of both, has created a very unfortunate and artificial gap. However important it may be from a practical standpoint to separate nervous diseases, which do not interfere seriously with the intelligence, from mental diseases which require a radically different treatment, the division in the scientific investigation of the two sets of diseases has been a distinct drawback in the progress of both sciences. The progress of knowledge of mental maladies has suffered the most in being considered a field of investigation apart from that of the nervous diseases. The damage in nervous diseases involves the lower and more simply constructed parts of the nervous system, and were the understanding of these simpler conditions applied to the domain of mental diseases, more progress would have resulted. One distinct aim of the Institute in many of its departments is to BRIDGE OVER THIS ARTIFICIAL SCIENTIFIC HIATUS BETWEEN NERVOUS AND MENTAL DISEASES.

Now we find that the nervous system (even in its highest spheres) behaves like other parts of the body in the presence of disease processes. It was suggested in the preceding

section that the nerve-cell may exercise a protective agency against hurtful stimuli by retracting its arms, which also provided a period of rest for the cell to recuperate pathological expenditures of energy. When the hurtful stimulus becomes more intense, as in the case of poisons coming in contact with the nerve-cell, notwithstanding its superlative organisation, it behaves just like its humbler associates in the liver, the kidney, and elsewhere. It may undergo changes in its internal organisation in contact with the poisons of disease; its food supply may also be interfered with. We then perceive, under the microscope, signs of degeneration of the nerve-cell, as witnessed in other parts of the body when their cells are exposed to the influence of poisons. But even under the influence of poisons the nerve-cell has a wonderful degree of vitality and a large capacity for restitution, when the disease-producing poisons are withdrawn. It is a very important view to consider that the brain behaves like other parts of the body in disease processes. In studying, therefore, the changes in diseases of the nervous system, one must always hold fast to one fundamental truth, that the brain in disease must not be regarded as something apart from the rest of the body, and must not be isolated as an organ *sui generis*, having inaccessible mechanisms and mysterious powers.

It must be borne in mind that even the highest constellations of the brain are not composed of elements distinct or different from the humblest parts of the nervous system, or even the simple nerve which pursues its pathway anywhere throughout the whole body. The fundamental structure of the constituent elements is the same in each.

The study of pathology in the nervous system, then, in our Institute must always be guided by a most comprehensive knowledge of general pathology of the whole body. It is, however, extremely difficult for any one individual to have a working knowledge of disease processes in the body in general, and at the same time know enough of the nervous system to extend into this field the broad conceptions of *general* pathological research. This is the reason why the department of pathology at the Institute is at a great disadvantage; the department has not enough men to cover the whole field of pathology in its relations to the nervous system.

This insufficiency of working force in the department of pathology has also been a very serious drawback in the acquisition of that particularly valuable kind of material for

investigation which is not to be found within the asylum. The opportunity for acquiring this material, so valuable in the investigation of insanity, largely determined the seat of the Institute in the great metropolitan city of the State. This material is derived from autopsies on cases in which the nervous system is damaged by the great host of general bodily illnesses. The making of autopsies; the acquisition of autopsy material of nervous diseases; the preservation of this material with the requisite great care and detail,—all involve an enormous amount of work, and we have been unable to take full advantage of the very opportunity which led to the inauguration of the Pathological Institute in New York city, namely, the acquisition of material and facilities for the study of the first stages of insanity, the importance of which was emphasised in the introductory paragraphs of this report.

The department of bacteriology is in charge of Henry Harlow Brooks, M.D. (University of Michigan).

The department of physiological chemistry is in charge of Phœbus Levene, M.D. (Imperial University at St. Petersburg, Russia), and S. Bookman, Ph.D. (University of Berlin).

V (A). DEPARTMENT OF EXPERIMENTAL PATHOLOGY.

I have endeavoured to show that in these days of great specialisation it is out of the question for any individual to have the capacity to cover the entire territory. Twenty, perhaps even ten years ago, when methods of investigation in pathological research were in a comparatively elementary stage of development, and used uniformly for the investigation of disease processes in all parts of the body, a single individual could master the whole territory, and was a general practitioner and physician to boot. He could observe symptoms during the patient's life, bridge over the chasm of death, as it were, and write the sequel of the story of the disease by observing the changes in the organs under the microscope. At the present time the problems of pathological research have grown vastly more complex. The examination of different constituents of the body forms a distinct and specialised territory of research, each having particular and intricate methods adapted for its special purpose, which cannot be used uniformly for the investigation of all parts of the body. Thus the changes in the blood alone, associated

with disease, constitute a distinct field of research with specialised methods of investigation, and within the past few years an extensive literature has grown up emphasising the importance of specialised microchemical investigation of the blood.

The study of the general changes linked with disease processes throughout the body at large, including the study of tumours, constitutes a very wide field of research, and is more or less subdivided into distinct branches of investigation. The study of morbid processes in the nervous system constitutes another field of pathological research, which is in turn subdivided into many specialised branches of investigation. And the investigator who would explore this field must first traverse the domain of general pathological anatomy, must then learn the intricate architecture and construction of the nervous system in order to apply to it his knowledge of the general nature of disease processes.

Experimental pathology in its turn constitutes a highly important and specialised domain of pathological investigation. Studies in this field of research which seek to induce disease processes experimentally require special skill in conducting operations on animals, and of watching the abnormal physiological manifestations of the animal after the experiment has been performed. It can be seen then that this territory merges over into that of physiology. If pathology be restricted to the mere observation of *changes in form* within the organs and their constituent cells during the processes of disease, its power of investigation terminates quite abruptly in very many directions. We must not only observe the changes in form and structure within the cells during disease processes, but also attempt to study the changes in the *functions* of the organs and of the cells themselves. In brief, experimental pathology takes into account the *abnormal physiology* of organs when exposed to environment simulating that of disease. This most important branch of research in pathology, respecting the abnormal physiology of the organism during disease, is best conducted from the standpoint of experimental pathology. Experimental pathology fills up the gaps in knowledge of disease processes gained by studying them in the human subject alone.

Pathology embraces not only pathological anatomy and pathological chemistry, dealing respectively with changes in the structure and chemical reactions of organs, but must also take into consideration pathological physiology. Pathological

anatomy and pathological chemistry have already been touched upon in their relations to general pathology, and it is now in order to emphasise the important bearing of pathological physiology in the study of morbid processes in general, and of the nervous system in general.

As normal physiology deals with the functions of the different tissues or organs in the normal organism, pathological physiology investigates the abnormal functions in the diseased organism. But the questions which pathological physiology has to decide are much more complicated than in those of normal physiology, because of the protean aspects of disease and the great variety of phases of the process of disease. Disease is very seldom so simple a phenomenon as the expression of the abnormal functioning of a single organ of the body. The body is a united whole, and the various organs so indissolubly interrelated that abnormality of functioning in one organ may produce a wide-spread effect on the functions of the other organs. Disease is a whole complex of abnormal functions of various organs, although primarily it may result from the departure of a single organ or tissue from its normal structure, chemistry, and functions. In disease the pathological physiologist is confronted, as a rule, with a whole complex group of abnormal functions of several organs, and he has to sort out and differentiate how far the abnormal functions of each organ contribute to the general symptomatology, and to discuss the interrelation of the abnormal functions of the several organs.

Observation at the bedside is, to a large extent, a practical application of pathological physiology, but in most instances such observation can only state the substance of the question as to the nature of disease processes, namely, the origin, cause, and course of the disease, and is seldom able to answer it. Pathological anatomy may demonstrate that a given disease is followed by certain lesions in certain parts or organs of the individual, and may further show that the same lesions are always associated with the same disease, thereby making a certain relation between the two factors quite probable. But in order to change probability into certainty other methods of investigation are essential. It is necessary to reproduce the disease experimentally and artificially in animals. If the pathological lesions found in a given disease can be initiated experimentally in an entirely healthy organism, and disturbances in the functions of the organs similar to those of the disease result, the chain of

evidence demonstrating the association of the symptoms and lesions is complete. This plan is the great aim of pathological physiology.

In this experimental method, not only in pathology but in all biological science and natural sciences generally, lies the great power and advantage of modern methods of investigation over the ancient lines of research. In some instances the experimental method in the study of disease may be applied to human beings, more particularly in methods of treatment. In fact, all of our empirical knowledge of the action of drugs has been gained through experiments in pathological physiology. In fever, for instance, the modifications induced in the abnormal functions of the body by antipyretics or a cold bath are useful applications of the experimental method in pathological physiology. The opportunities for using experiment in abnormal physiological manifestations of human beings in disease are seldom afforded. Hence we have to make use of experiments on animals and compare the results with the phenomena of morbid processes in man. It may be said that pathological processes induced in animals cannot be compared with those occurring in human beings, for the organisation of each is different. This is certainly true to some extent. There are, for instance, pathological processes of the gravest import to human beings which, as yet, we have not succeeded in reproducing in animals, such as tumours, syphilis, epilepsy, the smallpox group, &c., and many diseases of the nervous system. There are certain factors vaguely grouped together under the terms predisposition and immunity, which make an individual of the human species prone to a disease process and shields an animal from the same process, and *vice versâ*. Still the idiosyncrasies of man to many diseases from which animals seem shielded only go to show how much we still have to learn of predisposition, immunity, and the factors of heredity and vulnerability in disease. These facts in themselves, on the other hand, emphasise all the more the imperative necessity of the more extensive application of the experimental method in pathology, for the diseases which seem beyond the reach of the experimental method were formerly and are now precisely the very ones which are most obscure and unsatisfactory of explanation. The exclusive privilege which man exercises over the rest of the animal kingdom in making himself heir to many diseases speaks volumes for the theory which I have advanced above, that

the predisposition of man for these diseases is due to degeneration (toxic) of his germ-plasm, and civilisation's abrogation of the laws of survival of the fittest in man.

In many instances, fortunately, one is quite justified in considering the abnormal functions of the organ in an animal, when a given disease process is induced experimentally, as equivalent to the abnormal functions in a human being in that disease.

The cardinal functions of the corresponding organs are the same in all animals with higher organisation, and the structure of these organs resembles each other remarkably closely. If then, having produced in an animal the same lesions in an organ corresponding to the ones such as are found in the human cadaver, and that animal manifests the corresponding set of symptoms, the causal relations of the abnormal functions to the structural changes rest upon a firm basis. This is the way that the brilliant and practical results of bacteriology have been achieved. Without the use of experimental pathology, bacteriology would indeed have been a sterile science in the practical domains of medicine. It would have resulted in a piling of Pelion on Ossa of mere facts of the life history of bacteria, and their all-important pathogenic qualities would have remained comparatively unexplored. We should not strive always to experiment on animals which, by the high and complicated development of their organisation, are more or less related to human beings, but, on the contrary, greater extension of the experimental method in pathology should be made in the lower animals where the brilliant work of Metchnikoff has given the key to the explanation of the phenomena of inflammation. The less complicated the organisation of the animal, the less complicated are its functions, and the easier it is to comprehend its structure and functions in either health or disease. But this field, experimental pathology in the lower animals, belongs to or is shared with the province of cellular biology, and has already been alluded to. From these studies it will then not be difficult to progress to the understanding of the aspects of disease in more complicated organisms. For our purposes, experiments to produce disease processes on the more *highly organised animals* belong more properly to the territory of experimental physiology.

When morbid processes are induced experimentally in animals, to compare the equivalence with disease in the human subject, the services of physiological chemistry, bac-

teriology, and pathological anatomy must be called upon; the secretions and excretions must be examined; the physical methods of examination used in the clinic or laboratory of normal physiology must also be taken into account. In addition, the tissues of the animal are to be examined by the microscope after death. To a casual observer it might seem then that pathological physiology, having no methods of its own, could hardly be called an independent branch of medical science. This is as little true of pathological as of normal physiology. The aims of pathological physiology, the questions it has to study and decide upon, are necessarily of its own kind, notwithstanding the fact that it applies methods of research used in other branches of medicine. Still this branch of science has an individual method, namely, animal experimentation conducted along a certain line peculiar to pathological physiology alone.

Like every other branch of medicine, experimental pathology or pathological physiology is closely, even organically, related to the other branches. It is a *connecting link* between *pathological anatomy, physiology, bacteriology, and physiological chemistry* on the one hand, and *clinical medicine and hygiene* on the other. Its work is indispensable, not only for progress in the treatment of disease, but none the less for advances in the highest art of medicine—the prevention of disease.

The study of the pathology of the nervous system is more dependent upon pathological physiology than any other system in the organism. All the other organs of the body differ from each other by the anatomical structure and by their functions simultaneously, while different parts of the central and peripheral nervous system have the same anatomical structure, and still their functions are entirely different. We can hardly see, for instance, any morphological or chemical difference between some parts of the brain, the irritation of which produces contractions of the muscles, or other parts of the brain, the irritation of which produces contractions of the circulatory system, rise of temperature of the body, and so on.

The fact that every part of the brain has only to perform a certain part of mental or nervous work in the physiological division of labour in the nervous system was shown first by Hitzig and Fritsch by the aid of animal experimentation.

They contributed a valuable part in enabling the physicians to find in a living man a tumour of the brain, and the surgeon to direct the knife to its location with almost mathematical

accuracy. Experiments of this kind corroborated the differentiation between focal and essential epilepsy, and it is to be hoped that the day is not far distant when the simulacrum of epilepsy may be artificially induced in animals through the labours of experimental pathology. If the simulacra of epileptic phenomena could be experimentally and permanently induced in animals, it would furnish the key of the explanation of this obscure process. All the facts which the pathologist and physiological chemist have gained in the study of this dire malady give no explanation at all of the *process* which gives rise to the epileptic phenomena. The key to the explanation of the process—the *modus operandi*—of epilepsy has only been given by the great genius of Hughlings Jackson.

Animal experimentation has also proven that extirpation of certain portions of the cortical part of the brain always produces a degeneration in the same nervous fibres, proving thereby the neuron theory and showing the location and topographical distribution of different groups of functionally related neurons. Many more examples could be added showing the value of pathological physiology for the study of the nervous system.

Morphology and chemistry alone are not now, and never will be, able to explain all the phases in the actions of the nervous system, not only because we are unable to differentiate morphologically or chemically one pathological process in the brain cell from another, but also because the same pathological process of two different parts of the brain, if their functions are different, can have a different influence upon the organism as a whole. It is, therefore, not sufficient to study the morphological and chemical changes of the nervous system in its pathological state. We must also see what influence such a diseased nervous system has upon the different systems of the organism, such as the action of the heart, the blood pressure, the respiration, the general metabolism, and so on, as these all depend upon the nervous system, and must be changed when the latter is changed. *Conversely the effects of changes in circulation, respiration, general metabolism, and changes in organic and vegetative somatic functions upon the higher parts of the nervous system must also be taken into account.* But this latter topic must be studied by the pathological physiologist and psycho-pathologist conjointly. We can illustrate this best by the plan of studying the influence of drugs or poisons on the nervous system. Let us suppose

that we introduce into an animal certain drugs that produce convulsions or sleep; no matter whether we find morphological or chemical changes in the nervous system or not, we will not know thoroughly the nature of the action of these drugs until we examine, by all the physical and physiological methods at our command, the influence of the drugs upon the nervous system itself and all other systems of the body, the action of which is regulated by and depends upon the nervous system.

From one particular standpoint, however, this branch of research deserves special emphasis, for it relates to some questions of ultimate and practical importance regarding the insane. One of the specific rôles of experimental pathological investigation, in psychiatric research, lies in the determination of the action of drugs upon the nervous system. It must be confessed that in the treatment of the insane our knowledge of the effects of drugs upon the metabolism of the nerve-cells is very obscure. No one will deny that it is of the utmost importance to know what we are doing to the nerve-cells in administering drugs to the insane. At present our knowledge of the action of the drugs given to the insane is simply that of their general physiological effects; we know nothing of the chemical reaction between the constituents of the nerve-cell and the drug itself. Our knowledge of the action of drugs on the nervous system is empirical to the last degree.

Epilepsy seems to be due to the action of some stimulus which, though mild in intensity, may by its persistence act in the higher spheres of the brain. The stimulus may come from a variety of places in the body. It may arise from the intestines in the form of a mild poison, which may escape into the blood from some departure in the complicated chemical operations attending digestion; it may travel up one of the many nerves of the body from some irritation which involves the ends of these nerves; it may be due to the irritation of a splinter of bone pressing on the brain after a blow upon the head, &c. In an individual of inherent instability of brain, this constant stimulus finally causes a sudden dissociation of this part of the brain from the lower spheres beneath, by means of the retraction of the tentacles of the nerve-cells. These nerve-cells in the upper spheres of the brain become fatigued through the constant reception of the stimulus, and retract their arms to avoid the noxious impulse. But in the sudden retraction of the upper spheres of the brain, which

grasp and control the lower portions, the energy of the latter is suddenly unbridled and loosened, and the epileptic fit results. Now it is a question, if in deadening and benumbing these upper spheres of the brain by the use of bromides, so that they no longer exhibit a sense of fatigue to the stimulus, that in the course of time much harm may be done. It is quite true that the symptoms of epilepsy may be controlled in this way, but are we not poisoning the nervous system to gain this end? It were far better to ascertain the cause of the epileptic fit—the persistent stimulus coming from some distant place in the body—and attempt to remove this rather than to injure still further the highest spheres of the brain by benumbing their sense of fatigue with a poison.

If large and continuous amounts of bromides be given to animals, as has been determined in one of the New York State hospitals, the result is manifested by the phenomena of degeneration. While the drug is not given in epilepsy in such poisonous amounts as in these animals, nevertheless it must act in the same way, though to a less degree. If a perfectly sane man were continuously loaded with bromides, it would seem almost certain that in the course of time he would begin to show a dissolution of the higher spheres of the brain, whose activities are concomitant with the manifestations of the highest forms of mental operations and consciousness. It must appear, then, from this single example, how important it is to know the action upon the nerve-cell of these drugs which are given in insanity. Hence I enter a plea for experimental pathological work at our institute, and have mapped out an extensive series of experimental researches to determine the action on the nerve-cell of the drugs used in the treatment of insanity.

We have no one on the staff at present who has the requisite time or specialised training to undertake and stimulate work in the field of experimental pathology. This associate should be able, in addition to his own special investigations, to perform all the operations on animals desired by the other associates in the course of their researches, and to devise new operations and experiments as may be necessary in the course of psycho-pathological, pathological, bacteriological, or chemico-physiological investigations. In addition to this he should conduct all the physical and physiological parts of the examination, transfer and apportion the morphological, chemical, and bacteriological

material to their respective departments for detailed investigation after the experiment has terminated.

V (B). THE INVESTIGATION OF BLOOD IN INSANITY.

The investigation of the blood in insanity derives its importance as a distinct field of research from the fact that this is the medium of conducting the food-supply to the nerve-cell. When the nerve-cell works it expends energy, and the elaboration of energy is carried on within the body of the nerve-cells from crude food materials derived from the blood-vessels. The theory has lately become more and more substantially founded upon facts and observations, that not an inconsiderable share of mental and nervous diseases are due to the actions of poisons upon the nerve-cell. These poisons, which comprise a very large group, are sometimes bred within the interior of the body; they are often derived from bacteria, and frequently taken into the body from extrinsic sources. But there is danger of carrying this explanation of the action of poisonous substances upon the nervous system too far, and thereby under-estimating the *equally important factors of deficient food-supply and pathological fatigue of the nerve-cell in the production of nervous and mental disease*. In observing the actions of poisonous reagents upon the nerve-cells, the concomitant impairment of *their food-supply in relation to the work they perform* must also be jointly taken into account, particularly where the poisons, although mild in intensity, are of a dangerous character from their persistence and chronic action.

Investigations of the blood in the living patient, then, are of paramount importance, because in changes in the blood we have a barometer, so to speak, of the fall or adulteration of the food-supply of the nerve-cells. We have not only to consider the specific action of poisons upon the nerve-cell, but the secondary factor of the interference and adulteration of food-supply of the nerve-cell, which this poison causes by circulating in the blood.

In one of the commonest forms of insanity—general paresis—constituting 40 per cent. of the patients in the hospitals near the large cities, the cause of the disease seems to be a slow, gradual, unrelenting process of diminishing the food-supply brought by the blood, thus inducing starvation of the nerve-cells.

The investigation of the blood of insanity has proved of

such practical importance as to enable one to base on it therapeutic measures, and to indicate the percentage of cases that may be benefited by a particular line of treatment. Herein is certainly a practical application of the value of investigation of the blood of the insane. If there be one factor more important than any other in the production of mental and nervous diseases, with the exception of toxic agents, it is the *quantitative and qualitative impairment of the food-supply carried to the nerve-cell in the blood-vessels.** Much important work remains to be done in establishing more definitely the factor of impairment of food-supply to the nerve-cell, in relation to the genesis of mental and nervous diseases, and our Institute can ill afford to neglect this branch of research, and provide for a *systematised extension of this work in the hospitals.*

This once more may serve as a good example to show the inefficiency of the working force of the Department of Pathology in having only one associate. Pathological research work covers so many specialised fields of inquiry that a staff of at least three associates is required. I trust, however, to find that the Department of Experimental Pathology and the investigation of the blood of the insane may be carried on by a single investigator.

To sum up the requirements that are necessary to pursue pathological research in the investigation of the insane, three sub-branches should be provided for, each under the charge of a single associate; these sub-divisions are—

- I. General pathological anatomy.
- II. Special pathological anatomy of the nervous system.
- III. Experimental pathology, including the pathological histology of the blood.

VI. DEPARTMENT OF ANTHROPOLOGY.

The importance of heredity as a factor in the production of insanity has been hinted at several times in this text. The facts of the relation of heredity to insanity are to be interpreted only by applying to them the remarkable advances of cellular biology into the nature of the germ-plasm. The

* The details of chronic over-fatigue of the nerve-cell with normal food-supply, or work of the nerve-cell under conditions of deficient food-supply, involve too many technicalities to be presented in this text. Some of these details respecting the significance of the excretion of the metaplasma granules from the nerve-cell in relation to pathological expenditures of energy are presented in "The Toxic Basis of Neural Diseases," in press for a future number of the *Archives of Neurology and Psycho-pathology.*

whole essence of the problem of heredity in insanity lies in a thorough appreciation of these definite researches on the germ-plasm, and the psychiatrist who does not familiarise himself with these researches in a sister-science can hardly expect to gain any clear insight into the factor of heredity in insanity. The discussions of this subject, frequently carried on with but vague and hazy recognition of the present status of cellular biological researches into the physical basis of heredity, bear testimony to the desolate isolation of some workers in psychiatry from all other branches of science.

What are the agencies which damage the germ-plasm and cause departures from its normal constitution? Precisely the same agencies, to a certain extent, which cause degenerations or induce disease processes in other cells of the body besides the germ cell. These agencies may be summed up as poisons and other factors which depreciate the food-supply of the body cells.

While in their whole life history the germ cells are set apart from the rest of the body cells for the distinct and sole office of propagating the species, it is not possible for nature to isolate them so completely as to shield the germ cells from the damage inflicted by poisons or deficient nourishment. Thus, for example, the poison of syphilis and chronic and persistent poisoning by alcohol, both of which seem to operate largely by diminishing quantitatively or qualitatively the food-supply of the body cells, not only cause degeneration of the nerve-cells, but damage the germ cell as well. This is the reason that the progeny of parents whose nervous systems are poisoned by alcohol and syphilis is notoriously defective in the weak organisation of the superlative and most intellectually endowed spheres of the nervous system. For if a very slight defect or chemical change occur in the germ-plasm as a result of the action of these poisons, the effect in the next generation will crop out in the highest and most complexly organised parts of the body rather than in the more lowly organised and comparatively undifferentiated parts. This is why the nervous system, and, above all, its most lofty portions, are found wanting in perfection when the germ-plasm is in a pathological condition.

According to the degree of pathological changes in the germ-plasm do the effects of development of the progeny pass successively from higher to lower and lower planes of organisation in the nervous system, so that all grades of degeneracy and mental instability may be witnessed down to the weak-

minded imbeciles and idiots. The exceedingly complex molecular constitution of the germ-plasm, and the complicated process of reduction or halving of the germ-plasm in maturation of the egg and sperm cells in relation to the action of toxic agents and deficient cellular nourishment is of such urgent importance that I have made plans for the Department of Cellular Biology to approach the problem from the experimental standpoint among invertebrates which afford good opportunity of applying toxic agents to the germ-plasm.

During childhood such inherited incapacity of the energy of these higher parts of the nervous system does not always appear, unless the hereditary effects due to damage of the germ-plasm be gross and severe, for at this period such higher centres are comparatively little used. During adolescence and later life, however, when these higher centres of the nervous system are called upon for the greatest and most extensive expenditures of energy, they may fail. We then perceive the outcrop of hereditary defects. It becomes worse in the next generation, for the reason that this unstable brain energy in the first generation is liable to cause the individual to commit excesses, to set aside moral laws in decent, wholesome living, to tamper with the nourishment of the body, and introduce alcohol or other poisons into the circulation of the blood. Thus the germ cell in the second generation becomes still further degenerated. Degeneration of the germ-plasm is liable to bring about pathological conditions in the nerve-cells and other somatic cells, disturbing the general metabolism of the body; and once established, tends to set up a vicious circle increasing the degeneration in each successive progeny. The third generation becomes still more unstable in the energy of the higher portions of the brain which hold the lower ones in check. It is from this or succeeding generations that are recruited the inmates of the prison, of the lunatic asylum, of the reformatory, and of the hospital for the epileptic. We are, however, among the masses, in such a backward state of general knowledge of all these phenomena that we cannot seize these things in the beginning, where they ought to be taken in hand, but must wait for the end, so that the State has to spend millions, taking care of sickly and incurable degenerates. Spontaneous variation and environment must, of course, be taken into consideration in the march of degeneracy. But from whatever sources or combinations of these sources the degenerate and the candidate for the

prison and the asylum springs, we must identify him and have knowledge of him in the first and early stages of his pathway.

Now as to the use and purpose of anthropology. The relation of anthropology to medical science is somewhat vague. No one seems to define clearly and exactly just what anthropology is to do, or what results we may expect from it; consequently one may avoid the ponderous definitions usually given, and attempt to explain in simple language the use of anthropology in the science of medicine. Anthropology is simply a convenient term to indicate that two or three sciences are made use of collectively to study not only individual cases, but also large bodies of men. In this way the science simply makes use of anatomy, physiology, and psychology, more or less simultaneously, in investigating normal and abnormal phenomena of human life.

Now our object with anthropology is to conduct these anatomical, physiological, and psychological investigations to determine the characteristics of men with abnormal nervous systems as compared with the normal. We wish to identify the degenerate; we wish to learn departures in the physical and psychical characteristics of men at various stages along the pathway toward the prison and the asylum. At the asylum we already know fairly well what departures the insane show from the average normal man. In the asylum, however, only the last stages of mental and physical abnormalities preponderate, and we depend on anthropology to work out the initial and intermediate stages in the course of degeneracy.

In determination of the mental characteristics of degeneracy, anthropological investigation must be under the guidance of psychology and psycho-pathology. The great difficulty encountered in this investigation is the selection of a normal standard whereby to measure the abnormal departure. In America, where the population is so heterogeneous, we are immediately confronted by the difficulty of finding a standard race type to measure by, and in fact we can find no absolute standard. A perfectly normal man is a creature of the imagination. Only a standard varying between certain small limits can be used.

I ask that our constituents be reasonable in expecting immediate results from this department. The amount of work falling within the scope of anthropological investigations of the early phases of insanity is stupendous. It can

only be done little by little, and must grow and develop in the course of years.

The expectation is also cherished that the commission will see the advantage of extending this work by a larger staff, not by spending more money on the department, but by allowing us to bestow honorary associations with the Institute upon those who may prove themselves proficient in doing scientific work in this department and desire to avail themselves of its opportunities for investigation. Any work to be of value must be most carefully planned. It cannot be forced along with undue haste in accordance with what American enterprise demands in all other walks of life. Scientific work must be exempted from this pressure of haste. I must therefore ask patience in expectation of results from this department, the more so since we have no established precedent to follow in our investigation. We are doing pioneer work, and this, as a rule, meets with failures, and often has to begin over again, profiting by its mistakes, and has frequently to readjust its plan and methods of work.

A very interesting piece of work now in progress in the Department of Anthropology is a study of the correlation of the mental and physical growth of some young boys in a disciplinarian school. This has been undertaken in conjunction with Doctor Downing, of Brooklyn, N. Y. Fortunately we have an opportunity of studying these boys for several years, in order that we may fully record the relationship of psychical and physical growth, and also identify those among them who tend to deflect into degeneracy. It must be seen how important is some attempt at gaining a coherent knowledge of the insane before they make their way into the hospitals. When this is known it is bound to be of practical benefit and yield economical returns by instituting some form of control of insanity before it reaches its more hopeless stages.

In brief, one prominent purpose of anthropology at the Institute is to ascertain the proportion of cases of insanity occurring in normal individuals—in individuals who have no hereditary predisposition toward insanity—and to compare this proportion with the other cases of insanity complicated with or resulting from hereditary predisposition. For in the former class of cases insanity is more or less of an accident, and in the great majority of cases recovery is to be expected; whereas in the latter class with predisposition recovery is much less liable to occur. The determination of the question, it is plain, is most important and practical.

The instruments required for this department are comparatively simple and inexpensive. It has apparatus for testing the acuteness of the senses (all of which have to be determined in the various phases of degeneracy) and sundry instruments for physical measurements of the human body; two instruments to measure the diameter and contour of the skull, one in duplicate for the use of the State hospitals; measures for determining the cubic contents of the skull; a stereograph for tracing contours and profiles of the skull, and an anthropometer used for taking general measurements of the body.

We hope also in the course of time to make a collection of skeletons of the insane, in order to study the stigmata of degeneracy in the osseous system. The Anthropological Institute at Paris is very proud of their collection of the complete skeletons of 13 epileptics, because their histories and behaviour during life are accurately known. Seeing that the histories of our patients at the hospitals are scrupulously kept, we ought to be able in the course of time to have one of the best collections in the world for studying the osseous systems of epileptics, criminals, and lunatics. The value of this collection does not lie in the fact that it is a mere conglomeration of bones, but that it should be possible to study each skeleton in connection with the life history of its possessor.

The Department of Anthropology is in charge of Alois Hrdlicka, M.D.

SECTION 4.—THE UNCLASSIFIED RESIDUUM.

In conclusion, a paragraph from one of Professor James's essays* is most appropriate:

"The great field for new discoveries," said a scientific friend to me the other day, "is always the UNCLASSIFIED RESIDUUM. Round about the accredited and orderly facts of every science there ever floats a sort of dust cloud of exceptional observations, of occurrences minute and irregular and seldom met with, which it always proves more easy to ignore than to attend to. The ideal of every science is that of a closed and completed system of truth. The charm of most sciences to their more passive disciples consists in their appearing, in fact, to wear just this ideal form. Each one of our various *ologies* seems to offer a definite head of classification for every possible phenomenon which it professes to cover; and so far from free is most men's fancy, that, when

* "What Psychical Research has accomplished" in the *Will to Believe and other Essays in Popular Philosophy*, p. 299.

a consistent and organised scheme of this sort has once been comprehended and assimilated, a different scheme is unimaginable. No alternative, whether to whole or parts, can any longer be conceived as possible. Phenomena unclassifiable within the system are therefore paradoxical absurdities, and must be held untrue. When, moreover, as so often happens, the reports of them are vague and indirect, whether they come as mere marvels and oddities rather than things of serious moment, one neglects or denies them with the best of scientific consciences. Only the born geniuses let themselves be worried and fascinated by these outstanding exceptions and get no peace until they are brought within the fold. Your Galileos, Galvanis, Fresnels, Purkinjes, and Darwins are always getting confounded and troubled by insignificant things. Any one will renovate his science who will steadily look after the irregular phenomena. And when science is renewed, its new formulæ often have more of the voice of the exceptions in them than of what were supposed to be the rules."

From the scientific standpoint the disordered states of consciousness in insanity form a very large "unclassified residuum." In correlating these branches of sciences we have avoided the danger which Professor James indicates of restricting a branch of science to some set, fixed, and narrow limits of observation. If a branch of science be thus restricted it soon becomes walled up within itself. It travels in a rut, repeats its old observations over and over again, trying to make them appear new by merely setting them forth in new words; it finally becomes worn out and mummified. On the other hand, if a branch of science seems to be nearing the limits of its capacity to formulate new generalisations, seems to have completed its possible activities in presenting the ideal closed system of truths to which there seems nothing to add, such a science when stretched out to the outlying domain intervening between a sister science may have to begin its investigations all over again in a new and broader light. It is the value of the domains between the various medical and other *ologies* that we have endeavoured to bring out into prominence in the study of insanity. It should not be considered that our Institute has overreached itself in bringing unnecessary or irrelevant departments of science to bear upon the problems, or that in taking a stand against the restricted study of insanity it has gone to the opposite extreme in too greatly diversifying this research.

In fact a practical working force of but one Associate for the comprehensive Department of Pathological Anatomy and no representative for the Department of the Normal Histology of the Nervous System shows that this projected plan of the correlations of branches of scientific research in insanity at this Institute is still not completely developed.

We have seen some of the natural shortcomings of psychiatry, inevitable in the evolution of its progress; let us now behold the greatness of its future.

It would be a carping and disrespectful form of scientific *lese majeste* to point out these shortcomings as a stigma on the name of psychiatry, for it is truly destined to be the most majestic of all the biological and medical sciences.

These shortcomings of psychiatry only serve to show the greatness, comprehensiveness, and difficulties of the science. The other sciences in medicine and biology are elementary beside psychiatry. They are but stepping-stones to physiology, psycho-pathology, and psychiatry. For the three must be worked together in the study of the abnormal phenomena of consciousness. Psychiatry should never be so narrowly viewed as being tied down only to *insanity*, but to abnormal phenomena of consciousness in general, the domain of psycho-pathology. The study of abnormal manifestations of consciousness presupposes a knowledge of normal psychology, while at the same time it is the only key to an understanding of normal mental phenomena.

It is not strange that psychiatry, the most difficult and comprehensive of all medical and biological sciences, has been one of the last to begin its scientific progress. Psychiatry has not lagged behind of its own accord; it has been held back and had no choice but to wait until its stepping-stones might be built. It has had to wait for the growth of psychology in general and psycho-pathology in particular; for cellular biology, pathological anatomy, neural anatomy, and their affiliated branches of research to attain sufficient development to cope with its difficult problems. When it is perceived how far these subsidiary sciences have had to develop before attaining the capacity to be of service to psychiatry, we can gain some idea of the eminence of psychiatry among the medico-biological sciences.

The spiritual trinity, psychology, psycho-pathology, and psychiatry, is destined to form the loftiest pinnacle of the temple of science. The scientific story of the rocks holds one spell-bound; the history of the egg or the mechanism of a tiny

organism has its fascination; mathematics and the laws which command the courses of the stars are awe-inspiring, but none of these sciences or their allies have the grandeur or are so deeply and essentially human as the three sciences, psychology, psycho-pathology, and psychiatry, for they unveil the greatest marvel of the universe, the human mind.

We may say with the great Scotch philosopher, "In the world there is nothing greater than man, and in man there is nothing greater than mind." A knowledge of mind, both of its normal and abnormal manifestations, is the science of sciences.

Psychiatry for the short history of its existence has done its utmost with the imperfect methods at its disposal, and is now looking for new methods to fertilise its soil, highly fruitful but difficult to till. Common neurologists and pathologists, in their mistaken nature of the true function of science, more and more lose sight of what lies beyond their microscopic field of vision. What is still sadder, they are absurdly proud of their narrowness, making a virtue of their shortcomings. They highly value the process of groping aimlessly in the dark for new details. It is only the best thinking men among them who begin to look for the light of a broad horizon. The psychiatrist, on the contrary, by the very nature of his studies, is forced more and more to broaden out the basis of his science. Nothing short of a *co-operation of all the sciences* is what psychiatry requires. The enlightened psychiatrist looks for an *organisation* of the dispersed and dismembered parts of medical science. Fortunately this enlightened spirit found a foothold in the Commission and Representatives of the New York State Hospitals, and for the first time in the history of medical science was an institute established on a broad scientific basis, an institute whose aim is to till the field of psychiatry by means of instruments and methods obtained through an organised *federation* of the most important and most vital branches of medical science. Such a federation will help the growth not only of psychiatry, but also of all the other branches of medical science. Science ought to be grateful to the psychiatrist for the mere fact that he is the first to call for a *general unified* activity of the many branches of medical science. For unification, generalisation means the discovery of *laws*, the true aim of science.

I may well acknowledge an inability to do justice to the future grandeur of psychiatry as a science, and its deep sympathy with humanity as an art. For this might better be

traced by a pen—if there be another—like the one which has wielded the most stately periods on traits of normal and abnormal human nature in the English or any other tongue—that of Henry Maudsley.

CLINICAL NOTES AND CASES.

A Case of Chorea Gravis,* reported by J. W. GEDDES, M.B., C.M., Assist. Med. Officer, and T. ALDOUS CLINCH, M.D., Pathologist, Durham County Asylum.

THE interest of the following case centres in the severity of the lesions, both macroscopic and microscopic, which were found post mortem.

The patient, aged 26, six or seven months pregnant with her first child, was admitted to the Durham County Asylum shortly after midnight, 17th May, 1898, in a state of continuous bodily movement and confined in a strait-jacket.

Family history.—An aunt is an inmate of this asylum. A father's half-sister died of phthisis. Several sisters died before the patient was born; one of these was very young, and succumbed to "brain fever."

Life history.—Previously healthy; has never suffered from chorea, fits, or insanity.

Present illness.—About two months before the illness began she moved with her vicious husband from one home to another, which, with systematic maltreatment and starvation, caused considerable depression. A month later choreic movements commenced, but she was not seen by any medical man till three days before her admission. Dr. Gordon Russell found her sane, but unable to walk owing to chorea, which increased in severity, while her mental state deteriorated *pari passu*. He recommended her removal to the workhouse infirmary, where she was certified insane and removed at once to the asylum.

On admission the choreic movements were wild and uncontrolled to an extreme degree, not limited to the limbs, but affecting the head and trunk also. Her face was flushed; she was bathed in perspiration; her limbs were considerably bruised. She paid no attention to questions, and only made inarticulate sounds.

* Read at the Annual Meeting of the Medico-Psychological Association, Edinburgh, 1898.

About 12.30 a.m. two drachms of paraldehyde were administered by the nasal tube. She slept till 3 a.m. In the forenoon of the same day she tossed wildly about, held in bed, for five or ten minutes, then she lay in an apparently comatose condition for about five minutes alternately. Paraldehyde again procured sleep till the afternoon. The lungs were then found to be congested, and the heart showed a mitral systolic murmur. On waking she fell into the same state as before. At six p.m. abortion commenced, and at 6.15 the membranes containing a dead fœtus were expelled unbroken. The uterus contracted well. Her strength rapidly failed, and she died at 8 p.m.

Post-mortem report.—Sectio cadaveris 18½ hours after death.

Body well nourished. *Rigor-mortis* passing off; lividity very marked, blotches on face and anterior aspect of trunk and limbs.

Head.—Scalp thick, tough and congested. Skull-cap thin, hard and very congested. *Dura mater* congested, otherwise normal. The great longitudinal sinus contains clot; the other sinuses contain fluid blood.

Beneath the dura on the right side, and practically corresponding in extent with the temporal bone, is a large blood-clot—soft and friable, evenly coloured throughout, and perfectly free in the subdural space. Its thickness at the centre is about 1.6 cm., and its volume, taken by the displacement method, is 28.4 c.c. Inferiorly it extends over the right side of the middle fossa and over the floor of the whole posterior fossa, descending into the spinal canal as far as the first cervical nerve-roots anteriorly. The source of this hæmorrhage was probably the posterior branch of the middle meningeal artery, but, except at the one point where it is injured, the vessel wall appears perfectly healthy.

On the left side there is a similar hæmorrhagic extravasation over the posterior half of the parietal lobe and over the external surface of the occipital lobe; no apparent source of this hæmorrhage could be found. It therefore appears probable that it arose from numerous minute points.

The pia arachnoid presents a smooth shining surface, engorged with fluid blood and intensely congested. In the pia arachnoid are many small hæmorrhages on the left side, chiefly at the anterior and posterior extremities of the hemisphere. It is slightly œdematous, very friable, but not thickened, leaving the cortex with difficulty, yet without tearing it.

There is very little speckling of the surface from bleeding points when the membranes are removed. The convolutions are but little wasted; on section the cortex is reddish brown, while the alternating areas of pallor are not so well marked. The white matter is only slightly congested, and of firm consistence. The ventricles are not dilated and the ependyma is normal; basal ganglia normal save for slight yellowish mottling of the optic thalami. The hemispheres are of equal weight.

The cortex presents a mottled appearance; areas of deep congestion alternate with areas of pallor, each being roughly of the size of a sixpence. One large patch of anæmia extends over the lower three quarters of the left motor area. Cerebellar cortex is congested. Medulla, pons, and basal vessels are normal.

Thorax.—Pericardium normal. Heart muscle firm, left ventricle slightly hypertrophied. Mitral valve slightly thickened; no vegetations.

Lungs congested and œdematous.

Abdomen.—Peritoneum normal. *Liver*, small patches of acute fatty change. *Spleen* normal. *Kidneys* normal. *Uterus* firmly contracted.

Microscopical Report.—Second left frontal convolution hardened in absolute alcohol and in formalin 10 per cent. Sections stained by Nissl's, Held's, Golgi's, and the Weigert-Pal methods, and with hæmatoxylin and eosin.

By Nissl's Method when hardened in Absolute Alcohol.—In the first layer of the cortex a few of the granule cells appear to be provided with longish processes, which are varicose and curly. In some preparations it is difficult to say whether or not these appearances are due to staining of the fibre of the tissue in the neighbourhood, but in others high magnification convinces us that these are genuine cell processes. The cells of the second layer show very marked degenerative changes, most of them presenting complete destruction of the chromophile elements. The nucleus generally shows a tendency to over-staining, and the perinuclear membrane is distinct. Held's method likewise reveals no structure where chromophile elements are absent. In many cells the nuclei have been destroyed, or dislocated, or dislocated and partially destroyed. It may be that these various lesions are due to faulty methods. In the third layer the destruction of the cells is less complete. Chromatolysis to a greater or less extent can be found in nearly all, and normal cells are only found with difficulty. Both layers likewise show cells or nuclei, which overstain and are shrunken, and also very thin, attenuated, and badly stained dendritic processes. Sometimes the cells are vacuolated.

In formalin specimens the methylene blue stain does not compare favorably with the alcohol-hardened, but in the former brings out the yellowish pigment, which is not at all conspicuous, and certainly not in excess.

In the hæmatoxylin specimens the cells are very badly differentiated from the surrounding matrix, but reflect the appearances of the Nissl method. In addition to this, however, they give a splendid picture of the axis-cylinders, which appear perfectly normal. The blood-vessels are distended with corpuscles, and there are a few capillary hæmorrhages. The walls are in many instances much thickened, and the nuclei do not stain normally, but

appear as somewhat lighter dots in the vessel wall (longitudinal section). Other appearances which suggest stasis are seen, such as the non-staining of the vessel contents, appearances like blood-plates, loss of distinctness of the corpuscles. In some of the larger vessels fibrin is distinctly seen spreading in threads among the corpuscles. The perivascular spaces are dilated, and in many instances granular *débris* can be seen in them.

The Weigert-Pal preparations stain very badly; the whole tissue appears speckled with minute blue dots resembling myelin, but too small to give a double contour. They are most common in the white matter, and gradually diminish in number toward the surface. The myelin sheaths scarcely take the dye at all when the fibres have left the white matter, and they appear broken and uneven; the usual varicose beaded appearance is never seen, probably because the myelin takes the stain so badly that it is not visible in so small a bulk. On the other hand, the vessels are stained exceedingly well, or rather the corpuscles in them are, and they stand out as clearly on the yellow background as the cells in a Golgi preparation. As in the case of the hæmatoxylin specimens, minute hæmorrhages are to be seen occasionally. The pia mater is infiltrated with corpuscles, which do not seem to be enclosed in vessel walls.

Golgi's method shows evidence of departure from the normal, the value of which it is more difficult to decide. There is a thick deposit of silver chromate in the first layer of cells and superficial part of the second one. Below this the second layer of cells on the sides of the convolutions is almost entirely unimpregnated, and impregnation gradually grows more perfect as the top of the convolution is reached, though even here it never reaches the same degree of perfection as the third layer. This layer, which is well impregnated, shows the following changes:—There are cells the bodies of which are swollen and rounded, giving off attenuated apical and other processes; there are other cells presenting a great diminution in the number and size of the processes. The absence of thorns is a common occurrence, and often renders recognition of the axis-cylinder no easy matter. Processes are often indicated merely by a series of fine dots, and in such cases no thorns or any appearance which suggests them are ever present. In other cases thorns may be represented by a row of fine granules at a distance from the processes corresponding with the end of a thorn; these dots in a few cases may have intermediate dots between them and the process; indeed, one finds stages between the complete thorn and the dot, and the dot may probably be regarded as the next stage to no thorn at all.

The changes so far described apply to the pyramidal cells. The next one we have seen only on the cells with the short or ascending axis-cylinder. This change consists of elliptical swellings or bulgings along the side of the dendrites. They are gene-

rally small, and may occur at the bifurcation of the process. In these cases the cell shows no thorns. They appear to be the same change, only less advanced, as that described by Berkeley in *Brain*, 1895, as occurring in the brains of alcoholic rabbits. Nearly all this type of cell show these changes. In a few instances pyramidal cells have been seen with a deep depression in their wall extending three quarters of the way across the cell; this appearance may possibly be due to defective impregnation.

Apart from cellular lesions, two other abnormal appearances have been shown by this method, and by no other. The one consists in globular swellings on the vessels like miliary aneurisms, and the other in large black globules like the ordinary amyloid corpuscle, but about twice their diameter. They look like osmic acid fat globules, but no osmic acid has been used in this method.

This completes the detailed account of the abnormalities found in this case, but we do not wish to suggest that all of them, more especially those seen by the Golgi method, are necessarily directly in relation to the disease.

To conclude, we find great congestion of the meninges, which has resulted in severe hæmorrhages. We note that the congestion diminishes in both directions as we depart from the arachnoid. The fact that the basal ganglia show no congestion to the naked eye is most interesting when it is considered how many high authorities consider them the seat of the disease. The yellowish pigmentation of the optic thalami is so constant that it cannot be regarded as having any causal relation to the disease. Microscopically we have noted severe degeneration of the cells and of the myelin sheaths of the axis-cylinders, a process also diminishing in intensity in relation to distance from the membranes. The appearances noted are, however, probably to be considered as a result rather than as a cause of the symptoms observed. Indeed, they bear a close resemblance to those reported when animals have been killed by depriving them of sleep. One change strikes us as unexpected, viz. the thickening, and that to no slight degree, of some of the blood-vessels. It is not confined to one coat of the vessels, but affects the media and externa chiefly. The appearances are those of a degenerative change occurring in previously diseased vessels, and the question arises as to the relation of this disease to the cause of death. Have these vessels, with their narrowed calibre, induced changes in inhibitory or regulating centres, which may have assisted in the provocation of chorea, or have they had no influence whatever?

The relation of rheumatism and chorea is one of perennial

interest. In the present case *we have no history of rheumatism, but a systolic murmur was present*, and we venture to state that, had this patient lived, the diagnosis would have been chorea with endocarditis. There was, however, no evidence of recent changes in any of the cardiac valves.

In conclusion, we draw attention to the acute fatty degeneration around blood-vessels of the liver, which may readily be overlooked. This points to a toxic cause, whether the toxin is introduced from without, or is produced by the body itself, or is manufactured by organisms within the body. If these latter had their seat in the cortex they would probably have been demonstrated by the methylene blue preparations, but we find no such appearances.

Our thanks are due to Dr. Gordon Russell and Dr. Wingrave for their kind assistance in endeavouring to obtain a complete history of the case.

Addendum on Methods employed.—In this work so many modifications of practical value have been introduced that it may be of interest to pathologists if I detail them as briefly as possible.

Nissl's Method.—Hardening in my own practice has always been accomplished by alcohol which is rapidly increased in strength till absolute.* The tissue is then fastened on a wooden block by melted paraffin, and cut under absolute alcohol on a sliding microtome as thin as possible. Paraffin embedding alone will give thinner sections than can be obtained in this way. As an alternative the alcohol may be washed out, the piece soaked for a few hours in dextrine, and then cut on a freezing microtome. After freeing the sections from alcohol or dextrine they are stained in the following fluid:

Methylene blue B. X. (patent Grüber)	. . .	3.75 grammes.
Green potash soft soap (Venetian)	. . .	1.25 "
Water . . . . .	. . .	1000 c.c.

The employment of soap is necessary for the cortex, though good results may be obtained from the cord without it. The special methylene blue is absolutely necessary.

For the cortex decolorisation is best accomplished by absolute alcohol alone. To facilitate mounting, the sections may pass from the dye for a few seconds into water. They

* 60 per cent. alcohol	24 hours.
90 " "	118 "
Absolute "	till hard enough to cut.

are then decolourised on a slide, cleared with xylol, and mounted with Canada balsam.

The methylene blue stain gives results which are in my opinion unsurpassed by thionine or methyl violet, while the method with the correct dye is simple in the extreme. Formalin as a hardening agent gives poor and dubiously permanent results.

Held's method demands such thin sections that in general paraffin embedding is resorted to. Nissl long ago pointed out that this process destroyed or disorganised the chromophilic elements, and I have experimented in this direction with the same results. Much work has been published which loses a great part of its value because of this defect. By mixing equal parts of Nissl's blue solution with a .75 solution of erythrosin a beautiful double staining is obtained: the Nissl granula are blue, the achromatic substance pink, the nuclear membrane and substance red, the nucleolus and intra-nuclear network purple. Decolorisation is obtained in absolute alcohol.

Golgi's Method.—After hardening for one or two months in formalin the pieces are placed in Müller's fluid for a week, and then with the usual precautions in 1 per cent. solution of silver nitrate (Bolton).

The silver is then thoroughly washed out by repeated changes of distilled water, the tissue soaked in gum (or dextrine) and cut on the freezing microtome. The embedding medium being washed out, the extraneous deposit of silver chromate is partially removed by strong potash (Bevan Lewis), which does not destroy these preparations as it does those hardened with osmic acid; they are then washed free from potash (at this stage, if desired, toning processes of various authors may be used), cleared with carbol-xylol (1—3), and mounted on cover-glasses in gum dammar. When thoroughly set these glasses may be turned upside down over a slide, the corners being supported by common glass beads fixed with gum dammar, for the slide must not come in contact with the mountant.

Weigert-Pal Method.—The method described by Bolton (*Journal of Anat. and Physiol.*, Dec., 1897) has been followed, except that a mixture of bichromate of ammonia and chrome alum is used as the mordant, 1 per cent. of each, and that the sections are stained till very brittle, as short of this stage full impregnation of the cortical nerve-fibres is not obtained.

If the sections are supported throughout on small pieces of tissue-paper the fragility forms no obstacle to success.

The steps are, harden in formalin, cut sections on freezing microtome without embedding or washing, dye in Kulschitsky's acid hæmatoxylin, differentiation by Pal's fluids, washing, dehydration, &c.—by these means the tracing of fibres in the cortex is rendered very easy.

Discussion.

Dr. CLAPHAM asked upon what grounds was the patient sent to the asylum? He had a similar case in Sheffield, which he admitted into the Royal Hospital. It differed in the fact that it was not fatal, but there was no difficulty in treating the case in the ordinary wards of a general hospital.

Dr. FORD ROBERTSON, with regard to the use of alcoholic fixation, said that Continental observations upon nerve-cells had been made almost entirely with the sublimate fixation, and by those authorities alcohol was always said to be practically of no use. He himself did not see that the nucleus could by any probability be fixed, and he was sure that the post-mortem changes would be very great. He was entirely in favour of sublimate in the fixation of nerve-cells.

Dr. CLOUSTON desired to express great thanks to the reader of this paper. It made them realise how all-important pathological work was, and how much they were indebted to the younger members of the Association. In regard to the causation of such an acute case, his (Dr. Clouston's) choice would have lain in the diagnosis between acute rheumatism and the toxic effects of the dead fœtus. He was not aware that a dead fœtus could cause chorea. Such a cause might produce convulsions, and undoubtedly it could cause pneumonia, but it would be a new fact if poisons from a dead fœtus could cause chorea; while, on the other hand, they knew that rheumatism was intimately connected with chorea. If there had been a record of high temperature he would have favoured the diagnosis of rheumatism.

Dr. ALDOUS CLINCH said he stated expressly that it was only in the study of the cell that he regarded alcohol fixation as sufficient. He made no reference whatever to the complete study of the nucleus in his paper.

Clinical Cases. By F. GRAHAM CROOKSHANK, M.D.Lond.,
Assistant Medical Officer, Northampton County Asylum.

1. *Post-epileptic Hysteria.*

A MAN, E. C.—, aged twenty-eight, is at present a patient in the Northampton County Asylum. This man has since childhood suffered from epilepsy, and although at one time the fits were for several years in abeyance, just now they are frequent and often severe. The attendants, who have known him for many years, state that while the severe fits are of the usual type, the lesser ones are often followed by "antics" and "playing the fool." In one of these less severe attacks, which I witnessed recently, the convulsions had all the characters of a genuine epilepsy, and were fol-

lowed by the usual stage of stertorous passivity. But this stage was of short duration only, the patient suddenly springing up and adopting the "segment of a circle" position, the occiput and heels alone touching the ground. Suddenly relaxing, he then raised his trunk from the ground and bent forwards towards his feet five or six times in succession. Then, falling on his back, the knees were flexed and the thighs drawn up on the abdomen, and then as rapidly stretched out. This he repeated several times. Drawing up the thighs again, he placed his hands on his buttocks and rocked backwards and forwards, shouting loudly a stave or two of "We won't go home till morning." Finally he burst into a loud laugh, gesticulated extravagantly, got up from the ground, picked up his hat, and sat down complacently on a bench. These last movements were performed quite automatically, and without the least evidence of conscious appreciation. In fact, he continued for some hours in a dreamy state, and not till the next day was he fully and clearly conscious. I have no doubt at all that the convulsion was a genuine epilepsy, and it is quite obvious that the subsequent performance corresponded in detail to the series of movements demonstrated by Richer in *hysteria major*.

In most text-books very little is said of the connection between true epilepsy and hysteria. The occasional occurrence of post-epileptic hysteria is noted, but nothing more. Such cases as this, in which phenomena usually regarded as hysterical occur as part of the series of phenomena of a true epilepsy, are both interesting and important. Surely it is of more than academical interest to inquire whether these "posturings" are simply phenomena naturally allied to the automatism and somnambulism which, as we know, may occur indifferently after hysterical or epileptic convulsions; or whether these posturings are essentially hysterical, and hysteria a mental condition accompanied by somatic disturbance, one of the causes of which is epilepsy. At any rate a knowledge of the occurrence of these symptoms of "*la grande hystérie*" in males after epileptic convulsions must lead to considerable diffidence in denying, even in women, the epileptic nature of fits succeeded by "clownism" and "zoopsea."

2. Congenital Aberrations of the Epiblast in an Insane Man.

An elderly man was a few months ago apprehended in Buckingham Palace Yard as a lunatic wandering at large.

He eventually became an inmate of the Northampton County Asylum, where he at present remains. He is a perfectly happy, merry, and well-behaved old man, who believes that he has some claim to the throne of England, and is content to await the public recognition which he is persuaded will not long be denied him. There is some reason to state that he has always been of an eccentric and singular turn of mind. Such interest as may attach to his case is due rather to his cutaneous than his mental eccentricities. The whole of this man's skin is thickly studded with warts, sessile and pedunculated, and with little nævoid growths. His ears are long, narrow, with the satyr's point well marked, and with an abundant growth of hair on the inner surface of each tragus. On the posterior fold of the left axilla is a well-formed mamma about the size of a pigeon's egg, and presenting a well-developed virginal nipple. Over the sacrum and the lower part of the lumbar curve is that localised growth of abundant and coarse hair so often associated with *spina bifida occulta*, and so frequently represented in a conventionalised form on classical statues of fawns and satyrs. On the knees and elbows are patches of inveterate psoriasis, a disease from which he has suffered throughout life. The palatal arch is wide and flattened out, and the whole facial expression irresistibly suggests that of a kindly and humorous old satyr.

When noticing, as in this case, the correlation of the insane diathesis with cutaneous abnormalities, one cannot forget that the central nervous system is, no less than the skin and its appendages, of epiblastic origin. There is, therefore, rational justification for acceptance of the clinical teaching that cutaneous abnormalities frequently indicate the "insane diathesis."

OCCASIONAL NOTES OF THE QUARTER.

The Annual Meeting of the Medico-Psychological Association.

Under the presidency of Dr. Urquhart, the Association met this year in Edinburgh after an interval of ten years.

The meeting was probably the most successful that has taken place since our annual meetings changed their character. The attendance was large, and several of the contributions were of high merit.

The members of our specialty who practise in less favoured countries visit Scotland with satisfaction. They see there much good feeling among fellow-workers, and an amount of kindness and confidence on the part of the profession generally and on the part of the public towards the labourers in our somewhat thankless branch which are often absent elsewhere.

The forenoon of the first day (July 21st) was occupied with business which will be found fully reported in the proceedings.

Dr. Beveridge Spence, who has served the Association so ably as Registrar since the formation of that office, was unanimously chosen President elect. Mr. Hine, the well-known architect to the London asylums, Professor Magnan of Paris, and Dr. A. E. MacDonald of New York were elected honorary members.

The auditors' report shows that the finances of the Association continue in a satisfactory condition.

Proposals with regard to the treatment of incipient insanity were discussed, and a resolution adopted after some opposition. We cannot think that these proposals are altogether retrograde, even if it should appear that they are not quite in harmony with the much too rigid existing provisions with regard to the care of the insane in England.

In the afternoon Dr. Urquhart, having taken the chair, delivered the Presidential address. It is already before our readers. Addresses from the chair, when they do not deal solely with some one definite question, are very generally hortatory and improving, or retrospective and self-applauding. Our President on this occasion has avoided the common stumblingblocks of such discourses, and in his well-balanced address has been instructive without being didactic, has been retrospective without either exultation over the present or derision of the past, and has dealt with present problems in an earnest, sensible, and enlightened manner. He pointed

out that the chief great reforms for which Conolly cried from the chair at the Edinburgh meeting in 1858 had now been accepted. His summary of the deductions to be drawn from the statistics of the Murray Asylum, which must have cost infinite labour to prepare, is most interesting, and shows that every generation has its own problems in treatment and management just as it has in pure science.

A very remarkable point on which Dr. Urquhart dwelt is the absurd disproportion between the increased amount of work to be done by the English Lunacy Commissioners and the stationary *personelle* of the Commission. This disproportion suggests that the law does not regard the work which the Commissioners have individually to execute as of much importance. Every year which passes sees an increase in the number of the insane, and every fresh enactment which is adopted increases the amount of restrictive routine, until it will become impossible to work the department save as a piece of State machinery, the ultimate direction of which must inevitably fall entirely into the hands of Civil Service clerks. Individual treatment is probably just as essential for us and for our institutions as it is for our patients, and insanity can no more be treated wholesale than any other disease. The notion of bulking insanity and pauperism, against which the President protests, evidently rests on the old belief that insanity is a social state, and not a disease. *Nous avons changé tout cela.* That belief is dead if not buried, and before long not even the most ignorant of the public will endure legislation founded thereon.

The President notes with just satisfaction the closer *rapprochement* of psychiatry and general medicine. The members saw a striking exemplification of this in Edinburgh, where next door to the Pathological Laboratory of the College of Physicians stands the Pathological Laboratory of the Scottish Asylums, tokens alike of enlightened liberality, of zeal for knowledge, and of kindly co-operation. Dr. Urquhart, however, is not the man to be content with this. He calls attention to the work of the psychiatric physicians attached to St. Thomas's Hospital, London, and the Sheffield Infirmary, and holds that it is a real reproach to Edinburgh that there is not a similar provision there. In this, no doubt, our President strikes a true chord. Never will the insane derive the best benefit from medical advice till they can receive it early and under conditions similar to other sufferers, before such time as their infirmities have separated them from

the rest of humanity. It is not enough for us to deplore the horrors of the old asylums. The past in this aspect may bury its dead. The danger in modern days is not premature confinement in a Bastille, but destruction of mental power resulting from neglect of early curable conditions, with all the misery which this destruction involves. We are confident that sooner or later (the sooner, let us hope, for our exertions) the people will see this for themselves, though mountains of prejudice may have to be moved, and acres of statutes repealed "drawn from the musty rolls of Noah's Ark."

Among recent enactments that are not to be regarded as sufficient or apt is that relating to habitual inebriates. The President discusses this subject in his usual broad-minded way. He is not afraid to say plainly what many of us, perhaps, have been painfully thinking for some time past, that our Association has not taken up this subject as vigorously as it should have done. He notes that it has not formed the subject of an address from the Chair. We are behind our Continental and American brethren in this particular. In spite of the frequent charge of hypocrisy levelled against the Englishmen by Continental writers, the truth is that, in this matter at least, we in our Association are too much afraid of posing among the rigidly righteous, are too shy lest we may be deemed "faddists," too much dread the reproof of adopting the nonsense of the "teetotalers." Yet our French brethren devote a division of almost every number of the *Annales Médico-psychologiques* to "Les Méfaits de l'Alcool," and surely we see not less of these misdeeds than they. Is it that we have grown accustomed to the horrors of alcohol, which have only more recently become generally known in more southern countries? If so, the sooner we imitate our Scandinavian colleagues and enter the lists against alcoholism the better. At least as much could be done here as has been done in the great northern peninsula—at least as much is wanted.

Dr. Ford Robertson read a paper of the utmost interest on "The Normal Histology and Pathology of the Nerve-cell in relation to Mental Disease." The work of the Italian school, especially of Lugaro, on the condition of post-mortem change in the nerve-cell, and on the histological results of certain poisons, which seems so full of promise, is being closely followed in the Laboratory of the Scotch Asylums, and Dr. Robertson's original work is inferior to none that has been done in this department of science.

On the second day (July 22nd) further business was discussed. On the motion of Drs. Whitcombe and Rayner a committee was appointed to consider and report upon the question of the prevention of insanity, and the reports of the Nursing Handbook and other committees were considered.

An interesting paper on "The Mismanagement of Drunkenness" was read by Dr. G. R. Wilson, of Mavisbank, which gave rise to much discussion. It was probably the desire of the reader of the paper to startle his hearers a little by the promulgation of views not now generally acceptable, and in this he succeeded. He was understood as denying almost absolutely the existence of the drink craving, and as minimising hereditary influence to such a degree as to almost forbid the assigning of this condition as a cause of alcoholism. It was also suggested that drunkenness could be checked by measures of a vigour which might be called Draconian. For purposes of discussion it is perhaps well that such views should be stated, but they are certainly not the last word on this important and difficult subject. However desirable it may be to check the tendency to mawkish sentiment with regard to drinking, however necessary it may be to inculcate self-restraint, it is clear that if the only method of dealing with alcoholism is by punitive measures, the treatment of drunkards will rightly pass out of medical hands, and we cannot think that that is a consummation to be hoped for.

Dr. Watson read a paper on "Sewage Disposal," detailing the method adopted at the new asylum at Hawkhead.

An excellent paper by Dr. Findlay, of the Crichton Institution, on the "Choroid Plexuses of the Lateral Ventricles of the Brain," brings our knowledge of these important structures thoroughly up to date. Dr. Aldous Clinch contributed a case of chorea gravis, and a case of imperfect porencephaly. The latter was carefully worked out, and forms a most important addition to our knowledge of this condition. These papers were read in the laboratory of the Scottish asylums, and were illustrated by demonstrations.

The annual dinner of the Association was held on the 21st July in the Balmoral Hotel. There was a large attendance, and the speaking was notably good. Dr. Sibbald, in responding to his health, made manly and touching reference to his approaching retirement from his seat on the Scottish Lunacy Board, a subject of universal regret among our members.

The British Medical Association.

The annual meeting of the British Medical Association was held in Edinburgh in the week succeeding the Medico-Psychological meeting. The meeting was one of the most successful that the B.M.A. has ever held, whether as to numbers of members attending or as to the quantity and importance of the matter discussed. Edinburgh possesses many advantages as a place of meeting. The fame of its great medical school is world-wide, and it is full of ardent workers who are determined to maintain and extend its ancient renown as a centre of medical teaching. The social amenity and the accessibility of the northern capital render it specially attractive to the southron.

Elsewhere we summarise the work done in the psychology section. Much interesting work was done in the section of neurology. A discussion of the treatment of cerebral tumours was introduced by Professor Ferrier; a discussion on the influence of micro-organisms and toxins in the production of diseases of the central and peripheral nervous system was introduced by Dr. Buzzard. Both subjects were very fully discussed.

The meeting of 1898 witnessed also the birth of some new sections. Notable among these is the section of tropical diseases, a class of affections hitherto strangely neglected in England, although so much of our mighty empire lies within the tropics. Many tropical diseases have points of special interest for the neurologist and the alienist, while the labours of Dr. McDowall have familiarised us with the feeling that the ever-present problem of the care of the insane is as pressing in the tropical as in temperate climes.

The Correlation of Sciences in the Investigation of Nervous and Mental Diseases.

In the present number we publish an interesting article by Dr. Ira Van Giesen, Superintendent of the Pathological Institute of the Commission in Lunacy of the State of New York, upon the above subject. The necessity for a many-sided, comprehensive study of insanity is earnestly represented by Dr. Van Giesen. It is very much to the credit of the New York State Lunacy Commission that it has recognised the importance of the collaboration of skilled workers in various

departments of science for the elucidation of the problems of mental and nervous disorders, and has established an adequately equipped institute where the work can be efficiently carried on. Each department of the institute is in charge of a trained investigator, and the whole is under the supervision of a Director. We question very much whether the like of this institute is to be found on the Continent—we refer, of course, only to the special department of work with which it is concerned. As for our own country, it may confidently be stated that we have nothing to compare with it. In London and Edinburgh the pathological laboratories in connection with the asylums are within easy reach of the great hospitals, where correlated branches of work are in vigorous existence; but this is a very different thing from having the several departments in association at a single scientific centre, in charge of officials working under one authority. Several inconveniences must attach to this dissociation of branches of work. Nevertheless we recognise the propriety of an attitude of grateful appreciation in respect to these departures. They certainly constitute a long step in advance of the condition of things obtaining elsewhere in the kingdom. Elsewhere local authorities have provided a mortuary in connection with their asylums, and of late we believe that a room “for the finer histological work”—a phrase somewhat familiar in official reports—has in many instances been added thereto. Imured therein the pathologist too often finds himself in need of the sympathy of workers in the sister sciences. Problems arise upon which he would fain have the light of bacteriology, of physiological chemistry, of animal experimentation, and his work must frequently remain stunted for the lack thereof. Such an institute as that now referred to is doubtless a costly undertaking, and could scarcely be expected from any local authorities in this country but the most wealthy, or from combination of the less wealthy. We anticipate that the Hospital for Acute Cases in the West Riding of Yorkshire will be opened shortly, and if, as we believe, there are to be in connection therewith various departments of investigation, this may perhaps with justice be described as the first step in this country in the direction of the ideal institute. Such a departure cannot fail to be watched with the greatest interest by those engaged in the treatment of mental diseases.

In Dr. Van Giesen's brief review of the work of the various departments of investigation at the scientific centre of the New York State Lunacy System we find abundant evidence

of progress, and an instructive illustration of the standpoint of the psychologist of to-day. From psycho-physics and anthropometry to histology and experimental pathology the tendency is constant towards observation and experimentation in contradistinction to speculation. It is no part of our purpose here to criticise the views and suggestions put forward by Dr. Van Giesen on cerebral pathology, but we are unable to pass over his comparison of the nerve-cell to an octopus. The statement is made that the nerve-cell, like the octopus, has power of movement over its "tentacles." To quote Dr. Van Giesen, "this retraction and expansion of the arm of the nerve-cell, in groups, systems, and communities of brain-cells, drawing it in or out of the circuit of transmission of nervous impulse, is the final unveiling of the secret of a whole host of mental phenomena which hitherto have seemed mysterious to the last degree." Again, "These attributes of extension and expansion of the nerve-cell hold one spellbound in the vast flood of light shed upon the explanation of insanity." We are told that among the phenomena to be explained by "retraction and expansion of the tentacles of the nerve-cell octopus" are those of double consciousness, hypnosis, hysteria, and of the "whole great important groups of psychopathic functional diseases;" also the cardinal symptoms of epilepsy in the manifestations of the fit, and some of the violent manifestations of insanity. What may be Dr. Van Giesen's basis for these remarkable statements and hypotheses we know not, but we are certainly impatient to learn upon what evidence they are grounded.

Criminal Evidence.

At last the Evidence in Criminal Cases Bill has become law. It is not necessary to say more of the statute itself here than that it makes every person charged with an offence, and the wife or husband of such person as the case may be, a competent witness for the defence at every stage of the proceedings, under the conditions specified in the Act. The arguments for and against this measure, which we believe to be a pre-eminently salutary one, have been agitated in this country for many years, and are familiar to every educated section of the community. The combatants on both sides will now be content to wait to see their predictions verified, or the reverse, by the event. The great danger against which the judiciary will have to guard

in superintending the administration of the new statute will, in our opinion, be the possible abuse by counsel, from excess of zeal, of the right of cross-examining prisoners electing to give evidence on their own behalf. But from the admirable manner in which the judges have confirmed the right of "summing up" enjoyed by counsel for the prosecution under Denman's Act, within safe working limits, we have no fear of the result of the fresh test to which the Legislature is now submitting their firmness and capacity.

Prison Reform.

Whether the flogging of prisoners in gaols for breaches of discipline is good policy or not is a question in regard to which experts may and do entertain very different opinions. But there will be little disposition in any quarter, we should think, to criticise adversely the provision of the new Prisons Act that such punishment shall only be inflicted in cases of mutiny and violence, and then after judicial inquiry by a Board of visiting justices, with a stipendiary magistrate to act with them if necessary, and after ratification of the sentence by the Secretary of State. This reform in the law will achieve several desirable ends. It will confine what is, under any circumstances, a brutal punishment to cases of real gravity and brutality; it will protect prisoners against the whims to which even visiting justices are subject; and it will secure that uniformity of practice in regard to prison floggings which has hitherto in England been conspicuous by its absence.

Inebriates Act.

The Inebriates Act of 1898 marks a very distinct and important advance in the treatment of habitual drunkards.

The power given to courts to order the detention of habitual drunkards guilty of crime, in an inebriate reformatory for not more than three years, will go far to end the "Cakebread" class.

Crimes of alcoholic origin, too, will be probably considerably reduced. Alcoholic homicides, for example, are commonly the result of a prolonged course of alcoholic violence, and such cases, it may be hoped, will in future be arrested before attaining their full development.

The inebriate reformatories which the Act empowers the Secretary of State to establish, or which may be established by the councils of counties and boroughs, will need to be

very promptly formed if they are to cope with the number of cases that will probably require detention very early after the bill comes into operation on the 1st of January next. The number of habitual inebriates coming periodically before the courts is very considerable, and if these are at once dealt with under the Act the existing accommodation would be utterly inadequate.

The application of the powers given by the Act, although very full and extensive, will no doubt give rise to many questions of difficulty, and we shall watch the progress of its use with interest. The Act promises to prevent a very large amount of suffering at present inflicted by the habitual drunkards on their families without check or hope of redress, and there can be little doubt that beyond this there may follow a considerable reduction of casual inebriates. The popular mind will soon recognise that the law regards drunkenness as criminal, and this, it may be confidently predicted, will result in drunkenness being considered, not as a harmless indulgence, but as a moral offence against law and order—a result greatly to be desired.

The Lunacy Bill.

The Lunacy Bill of the past session, after passing the Lords, was withdrawn in the House of Commons, owing to the lateness of the session.

Time, therefore, still remains to this Association to exert itself in influencing the coming legislation. The late bill, owing to our action and influence, was undoubtedly modified and improved, but much remains to be done, especially in ensuring a favourable reception of the pension clauses, in the House of Commons. In this direction individual members can do much in putting the special claims of the specialty in this respect before those members of Parliament with whom they are associated in any way. The bill will almost certainly pass next session, and if this opportunity is missed, many years will probably elapse before another is offered.

The Law of Settlement.

(The Plymouth v. Axminster Guardians.)

This case before the House of Lords was an appeal from an order of the Court of Appeal affirming an order of the

Recorder of Plymouth on a case stated by him. The question in dispute was whether a female pauper lunatic was settled in the appellants' union. The lunatic was born at Plymouth, but had gained no settlement of her own; her mother, a single woman, was born in the defendants' union, and had acquired no settlement.

Although the mother probably had a derivative settlement from her father, the Recorder decided that this could not be inquired into, and that the settlement of the lunatic was in the appellant's union in which she was born.

Lord Herschel gave judgment in support of this decision. He expressed the opinion that the limitation of inquiry into derivative settlements was intended by the Act to prevent the undue expenditure which such inquiries led to.

The righteousness of the decision is shown, for the cost of a disputed inquiry into the settlement of the grandparent of a lunatic might easily amount to more than the cost of the maintenance of the lunatic for many years. Decisions such as this, which limit the possibilities of litigation, are to be hailed with satisfaction by all interested in the true economy of poor law administration.

Lunacy Certificates.

Are two medical certificates necessary for a "not a pauper," lunacy case? The *Lancet* (July 30th, 1898) draws attention to a statement made by a correspondent that "the justices of his district are in the habit of signing removal orders for lunatics of the working and artisan class on one medical certificate only."

This action can only be taken under section 18 of the Lunacy Act, and on that portion of it which justifies the signing of an order on the ground that the person is "in such circumstances as to require relief for his proper care."

Section 13, clause 2, however, provides that in the case of lunatics not under proper control two medical certificates shall be obtained.

The question would appear to rest on the manner in which the justice is to determine whether the lunatic is "in such circumstances as to require relief for his proper care;" but in regard to the decision of this no guidance is given.

Justice demands that the presumably "not a pauper" lunatic should have the benefit of the doubt, and the advantage accruing from double certification would seem to be

very desirable in all cases removed directly to the asylum. Recent cases before the courts seem to render this advantage of tangible value.

The law's uncertainty in this matter ought assuredly to be set at rest. This might be done by a case brought before a court of law; or the Commissioners in Lunacy, having their attention directed to such occurrences, might reject or confirm the procedure. Many such admissions have evidently occurred, and have been accepted as valid; so that the question may be asked whether these do not act as precedents confirmatory of the practice.

The Act, however, evidently intended, in the 13th clause, that there should be the safeguard of the double certificates in these cases, and it is to be regretted that this should be abrogated by a clause referring to another category of lunatics.

Hypnotism and Will-making.

The recent will case, in which the possibility of undue influence by means of hypnotism was raised, is concluded, and the questions in relation to this possibility can now be considered apart from any reference to that particular case.

These questions would appear to be (a) whether a will could be obtained in an hypnotic condition; (β) whether a suggestion made in an hypnotic state could lead to the subsequent execution of a will; and (γ) whether repeated hypnotism can induce in the person hypnotised a feeling towards the hypnotiser of fear or affection which could fairly be considered "undue influence."

That a person in the hypnotic state might be induced to sign a document purporting to be a will is probable, but that a lawyer, acting in good faith, would draw a will for a person in such a state is most improbable, and the same improbability applies to the second proposition of will-making by suggestion.

"Undue influence" may be exerted over weak-minded persons quite apart from hypnotism, but there can be no doubt that persons who have been frequently hypnotised by the same physician often conceive a great liking for, or have an excessive belief in the powers of, that physician. It is therefore much more probable that such a person would be more susceptible to "undue influence" on the part of the hypnotiser. This is probably a result of the mental deteriora-

tion which hypnotism produces, and which is so markedly seen in what a recent writer naively describes as "fully developed" cases of hysterical disorder—cases that have been habitually treated by hypnotism over considerable periods.

Hypnotism as a direct basis of "undue influence" is probably a very untenable allegation, and one which it would be difficult, or almost impossible, to conclusively establish, although the fact of its having been habitually used might be advanced in support of such a contention. In the case already alluded to there does not appear to have been any proof of the testator having been actually hypnotised, and the allegation consequently altogether failed.

English law regards with great suspicion all wills made in favour of priests or lawyers, and the French law forbids a doctor attending a testator during a last illness from becoming heir to the estate.

This question of "undue influence" is probably much more one of "undue susceptibility to influence" than judges are apt to consider.

When a testator has made a variety of wills, first bequeathing property to this person and then to another, there can be little doubt that the disposition of the property rests solely on the accident of the particular person who is most in evidence for a time preceding death, and it becomes a question whether the services rendered or the affection engendered during that time are really commensurate with the reward. Many aged testators would certainly will their property to any kindly person with whom they were more or less completely isolated, or on whom they were dependent for care and attention. Yet it is certainly often unjust that such a great reward should be given, to the exclusion of the claims of kinship and of long-standing affection, even if this has been latterly disturbed.

The ease with which dissension is sown between a wealthy testator and the natural heirs, by the designs of the would-be inheritors, is also too little appreciated; the facts of the dissension are patent, but the ways in which they have been brought about are not seen. These family quarrels are, it is to be feared, often allowed too much weight in the judicial decision.

Hypnotism, as a direct means of obtaining a duly drawn and attested will, must be regarded as almost an impossibility, but that habitual hypnotism might end in the establishment of "undue influence" must be conceded as a probability.

Medical men, whether hypnotists or not, who are aware that they are inheritors, however deservedly, from a patient would do well to remember the French law, and obtain the aid of a colleague during the final illness. In this way only can they avoid the suspicion which so readily attaches to such an inheritance.

Lead Poisoning.

The public attention has been of late very much directed to the subject of the ill effects resulting from lead intoxication in industrial workers brought into contact with this poisonous substance.

The injurious effects are much more numerous than even the most alarmist of these reports show; for beyond the striking and obvious cases recorded are many of more insidious nervous deterioration, besides the cases of abortion traceable to this cause, and the less frequent but undoubted occurrence of idiocy and imbecility in the offspring of lead-intoxicated parents.

That legislation safeguarding the use of this noxious substance may follow on this direction of popular attention is to be hoped, but these outbursts of interest in health subjects are, unfortunately, but too easily forgotten. It is the duty, however, of our profession to periodically stimulate the social memory, and we must endeavour not to neglect the performance of this function.

Hypnotism.

The section of Psychology at the British Medical Association meeting again discussed this subject, but apparently nothing novel of actual fact was adduced.

The bold attempt of Dr. Milne Bramwell to prove that there are no drawbacks to the therapeutic use of hypnotism is, however, a challenge which should be promptly met. Very many observers have seen cases in which hypnosis has been followed by very definite and distinctly evil results. Many instances of this kind have been recorded, and good service would be done by their collection and tabulation, as a check to future assertions of this kind.

Hypnotism is an abnormal state of the brain, and although it may result in apparent benefit to less highly developed portions of the organism, the question remains whether this

benefit may not be too dearly purchased. Such conditions may be produced in a fairly healthy brain for a few times without any very tangible results, but in cases in which ill-health already exists there can be little doubt that very considerable harm may follow. Hysteria *plus* hypnotism, for example, probably develops into forms of complicated disorder which it very rarely reaches in cases uncomplicated by this form of treatment—a degree of disorder which a recent writer on this subject pithily described as “fully developed.”

Therapeusis admits the principle that a lower tissue may be sacrificed to save a higher. Thus the skin may be blistered for the advantage of an underlying organ, or the leg amputated to save life; but it is distinctly bad practice to harm the higher organ to release the lower, as it appears to us is the case in hypnotic treatment.

Mr. Myers' speculative theories are interesting, but give no ground for his conclusion that hypnotism develops organic concentration and recuperation. If this were true it would be obvious that the simplest way to promote human evolution would be to habitually hypnotise all humanity.

Pathologically hypnotism is related to somnambulism, hysteria, lata, and stupor, and is therefore worthy of the most careful scientific investigation. Hypotheses as to its nature may be useful, but should be carefully based on known facts, and not complicated by dialectical subtleties, such as the “subliminal consciousness.”

Therapeutically, hypnotism is related to the various varieties of faith-healing, the limitations of which are fairly well known and recognised. The assertion that it unlocks or re-develops some latent organic endowment is beyond possible proof, and is opposed to all evidence of organic evolution.

Hypnosis, from the point of view of our specialty, is a temporary disorder and weakening of the power of self-control, which by repetition must inevitably tend to be confirmed and increased. It is, indeed, a temporary shunting on one of those side-tracks of disordered mental function of which insanity is the terminus.

Priest and Physician.

In a recent number of the *Zeitschrift f. Psychiatrie* (published in May, 1898) Möbius devotes an article to the memory of Heinroth (dead now fifty-five years), who is chiefly famous for

the doctrine which he taught that mental disease arises from sin. He was, Möbius tells us, the first clinical teacher of psychiatry in Germany. It may therefore well be that he exercised an injurious effect, and that he was, as Kräfelin says, a dangerous enemy to the school of scientific psychiatry, then recently founded by Esquirol. Möbius, however, endeavours to point that he had nevertheless his merits. To us the matter is chiefly interesting as marking time. Such and such things a physician taught sixty years ago, and in the very next number of the journal which contains Möbius's historical notice we find how a priest writes to-day. In the *Zeitschrift f. Psychiatrie* published in June, 1898, there is a short review by the editor, Laehr, of a little work on "Pastoral Psychiatry" forming one of the volumes of an encyclopædia of Catholic theology, and setting forth views on sacerdotal work in asylums, which are published "with the approval of the Venerable the Vicariate-General of Freiburg, and of the Episcopal Ordinariate of Regensburg." The author, Laehr tells us, frankly begins by saying that the physician must take the first place in dealing with the insane, and must have the direction of the treatment. Insanity is described as a disease of the brain, and the causal connection of the mental processes with brain conditions is said to be demonstrable by psycho-physics. The author modestly claims that there should be for every large asylum a special chaplain, so circumstanced that he could devote the necessary time to his work and spend as long as possible in the institution, for (the italics are ours, and they feebly express our feelings) "*the acquisition of the necessary knowledge is not very easy, and the mode of intercourse with the various patients is not to be learned off-hand.*" It is a pity that this sensible sentence could not be engraven on the tablets of memory for those occasional asylum committee-men who conceive that mere election on an asylum Board makes them familiar with the last results of science, and capable of teaching his business to the physician who has devoted his lifetime to the work. And we must earnestly commend to our older judges, and especially to those venerable denizens of the Gilded Chamber who are finally appealed to as the infallible exponents of the common law of England, the following excerpts from Father Ignatius Familler's work as given by Laehr:—"In all the many intermediate stages between mental health and complete insanity the freedom of the will is always limited in the same degree as the mind is affected. Therefore,

such a person cannot be held entirely accountable for his actions, and is only responsible to a limited degree. If serious disturbances dominate any one region of mental activity, then complete irresponsibility must be held to exist, for the morbid errors of one mental sphere are almost never corrected by the part remaining in a better state, but on the contrary bring about a morbid condition of the entire personality" (das ganze Thun und Lassen krankhaft bestimmen). In a chapter "De Sacramentis" the author makes a most interesting distinction "between those lunatics who have been insane from their earliest infancy, and those who have been stricken by insanity after a longer or shorter period of sound mental health. The sacrament of Extreme Unction should never be administered to the former, for the possibility of committing a sin is taken from them by their irresponsibility. On the other hand, Extreme Unction must be administered to the latter when at all possible."

We think we may also recommend a course of Father Familler to those Evangelical clergy who during recent years have been making such nuisances of themselves in connection with the insane in some North German provinces.

Asylum versus Hospital.

Under this title Dr. James Russell, of the Hamilton Asylum, Ontario, read a paper before the American Medico-Psychological Association, and published it in the *Canadian Practitioner* for June of this year. He tells us that there is a growing tendency on the American continent to drop the term "asylum" in favour of the less suggestive title "hospital." In the recently published transactions of that Association it would appear that the designation "hospital" is applied to ninety-three institutions, as against "asylum," which is only used forty-eight times. In a peroration extending to nearly fourteen closely written pages, Dr. Russell inveighs against the disuse of the term "asylum." His paper is redundant with digressions, which touch almost every conceivable point in the domain of psychiatry; many of his statements are highly controversial, while his discursive argument is open to destructive criticism both from those who differ from his conclusions and those who, for other reasons, adopt them. It is not, for instance, because we are afraid of "trusting too much to scientific methods,"

the desire to remove prevalent prejudices arising from past abuses and present deficiencies by a species of transparent subterfuge. There is that of ingenuousness and *naiiveté* in the proposal which might enlist a certain amount of sympathy were it not for its patent offensiveness. Moreover its futility is apparent. Were it possible with the wand of a magician to remove lunatic asylums from the face of the earth to-morrow, the prejudice against insanity and the insane would not vanish with them. As Maudsley puts it, "there always has been, and for a long time to come there will no doubt still be, a feeling of distrust of, and repugnance to, the anti-social unit who has fallen from his high rational estate; . . . he will lie under a social ban, and the family to which he belongs will feel the reflected stigma." Might it not be added, "And so will the institution in which he is confined, christen it ever so skilfully"?

The faithful and arduous labours of our predecessors, and the remarkable scientific achievements of our contemporaries, have been to a large extent effectual in diminishing the strength of the hostile criticism and of the popular prejudices to which asylums have all along been subjected. Whatever the workers of the immediate future may do in this respect, their success will certainly not depend upon a desire to appear other than they really are. The views of Dr. Russell, as expressed in the following sentence, could scarcely be improved upon. He says, "I take no stock in that scientific sentimentalism which seeks to popularise itself with a name. Words are but symbols of ideas, and unless a name has behind it the merit of good works to commend it to popular favour, it will be but as a tinkling cymbal and a term of reproach."

PART II.—REVIEWS.

Die Darstellung Krankhafter Geistzustände in Shakespeare's Dramen. Von Dr. HANS LAEHR. Stuttgart, Neff, 1898. Demy 8vo, pp. 200. Price 3s.

A good many years have passed since any author in this country conversant with insanity has written anything of note upon the personifications of mental derangement to be found

insanity. The characters considered at length in Dr. Laehr's book are King Lear, Ophelia, Hamlet, and Lady Macbeth. This does not cover all the mad folk of Shakespeare. There is left out the maniacal misanthropy of Timon, the frenzy of Constance, and the blind fury of Othello. Nor does Dr. Laehr consider the amusing variety, all true to nature, which Shakespeare gives to the fools whom he places on the stage. But what Dr. Laehr gives us is well done. His remarks upon the dramatic touches which indicate the growth of insanity in King Lear are both true and subtle, such as only a skilful alienist could have noted. One is somewhat startled by the remark which he makes at the end, that the madness of Lear and Ophelia belong to the same type, "Akute Verwirrtheit," that is acute confusional insanity.

Our author cannot deny himself the luxury of an analysis of the character of Hamlet, which fills one third of the book. None of Shakespeare's dramatic creations have attracted nearly so much attention as the Danish prince, and some critics and actors have believed him to be insane throughout. We have to recall that Conolly held this view to prevent us treating it with disrespect. One should not throw away the clue furnished by the dramatist himself, in which Hamlet, after the terrible revelation given by his father's ghost, warns Horatio not to be surprised at what he might do :

As I, perchance, hereafter shall think
To put an antic disposition on.

It might be objected that this resolution appeared to be too sudden, but in a play the action must be rapid. Even without this clue, an attentive perusal of the play should convince the reader that Hamlet is simulating insanity. To the king Claudius and his sycophants he indulges in wild words, through which, however, there runs a purpose that they themselves suspect. While he does not entirely deceive the king and Polonius, to Horatio, and at last to his mother, Hamlet talks not only like a sane man, but with surpassing wit and eloquence. He even argues with his mother that he possesses his entire reason in a way which shows a ripe knowledge of insanity :

My pulse, as yours, does temperately keep time,
And makes as healthful music : it is not madness
That I have uttered : bring me to the test,
And I the matter will reward ; which madness
Would gambol from.

In "King John," Constance replies to the Cardinal Pandulpho's speech :

Lady, you utter madness and not sorrow.
 I am not mad ; I would to Heaven I were !
 For then, 'tis like, I should forget myself :
 Oh, if I could, what grief should I forget !
 Preach some philosophy to make me mad,
 And thou shalt be canonised, Cardinal ;
 For being not mad, but sensible of grief,
 My reasonable part produces reason
 How I may be delivered of these woes,
 And teaches me to kill or hang myself :
 If I were mad I should forget my son,
 Or madly think a babe of clouts were he.

It seems clear that Shakespeare must have observed curiously, seen, and noted not a few mad people to describe the symptoms of insanity so correctly. Dr. Laehr has a learned inquiry where the poet could have got his lunacy lore ; but a genius like Shakespeare gains knowledge through the very pores of his skin, which ordinary men fail to apprehend through their eyes and ears. Dr. Laehr's chapter on the personifications of insanity in the dramas of Shakespeare's English contemporaries shows much acquaintance with the literature of the time. He concludes with a *résumé* of the principal essays upon the psychology of the poet, in which he reviews some thirty contributions to the literature of this interesting subject. Amongst them Dr. Laehr's own work is entitled to take a high place.

Arbeiten aus dem Gesamtgebiet der Psychiatrie und Neuro-pathologie. Von R. v. KRAFFT-EBING. Leipzig: Johann Ambrosius Barth, 1897. 8vo, pp. 165.

The first of the papers in this volume appeared in 1883. It treats of transitory insanity supervening on neurasthenia brought on by cerebral excitement from mental overstrain. It would, however, serve no purpose to present to our readers a condensed form of these descriptions. As far as our experience goes, neurasthenia is not often followed by insanity, but that this occasionally should take place seems likely enough. Dr. Krafft-Ebing describes five cases in which he assumes an anæmic condition of the brain to be the cause of attacks of transitory insanity. He is inclined to believe that this brain anæmia is owing to spasm of the cerebral vessels, as indicated by the weak and compressible pulse, the wide and slowly reacting pupil, and the stuporose condition which disappears with an improvement in the circulation. He observes that every neurologist knows that epileptoid attacks

are every-day symptoms in many nervous diseases, especially in persons afflicted with neurasthenia. These symptoms include distress with outbursts of perspiration, precordial pain with appearances of spasm of the vessels, and disturbance of consciousness down to fainting with special spasmodic phenomena, dependent upon disturbances of the circulation in the brain. It is possible other physicians might say that these are the pathological substrata and symptoms of epilepsy itself, and call his epileptoid attacks epileptic ones. Some pathologists make a distinction between what they call true epilepsy and what they are pleased to exclude as epileptoid or epileptiform symptoms, a distinction which seems to me sometimes to be purely formal.

The third observation is curious. A man of forty-one, railway employé, without marks of degeneration, but in poor health with symptoms of neurasthenia, suddenly took it into his head that he had been made station-master, and went to take command of the office, whence he was roughly driven away. He was treated by the railway doctor. One morning after a good sleep he announced to his family that his fixed idea had disappeared. He confessed that he had dreamed that he was made station-master, and that the order appointing him was in a box. On awakening he had been content to assume this as true without taking the trouble to assure himself by looking. This Krafft-Ebing explains as owing to the incapacity of the exhausted brain to correct the belief acquired in a dream.

Dr. Krafft-Ebing's observations lead him to believe that the view of Samt that we may recognise an epileptic basis from the mental symptoms alone is untenable.

The chapter on Hemicrania and its connection with epilepsy and hysteria is quite a little museum of rare clinical observations. Dr. Krafft-Ebing's views are illustrated by rapid descriptions of a score of cases. He holds that we may have hemicrania in the simple form of hemicrania ophthalmica. If more severe, it may be accompanied by contraction of vision or scotoma, or even by temporary aphasia or paraphasia. Such attacks of hemicrania have generally an hereditary origin. Where it is acquired the prognosis is more serious, as the affection may be symptomatic of deep-seated brain disease, tumour, lues cerebri, paralysis, or tabes. Dr. Krafft-Ebing describes several cases in which the hemicrania ushered in an epileptic attack. It might be regarded as an aura, or, as some neurologist has described, as a sensory attack of epilepsy. In

certain cases described the disorder began with the sight of a bright spot or ring, sometimes a red spot succeeded by pain in the side of the head, and ending in a regular epileptic attack. Here is one of his observations. Miss V—, eighteen years old, no hereditary neurosis, has suffered since puberty with ophthalmic hemicrania, which at first used to last an hour and a half, and of late extended to four hours. When the pain was at its height, about half an hour after the appearance of light and of the scotoma, there was a feeling of powerlessness in the face, tongue, and arm on the same side as the pain. The day after the attack the patient complains of giddiness, is forgetful, confused, depressed, is awkward with the hand, paræsthetically affected, and lets things fall. She has only a dull remembrance of events during this stage. In the intervals she is quite well. The paper on transitory insanity with hemicrania is full of interesting clinical observations. Here is an abridged sketch of one case. Mrs. N—, fifty-five years old, labourer's wife, had suffered for eleven years from ophthalmic hemicrania. It begins with a broad perpendicular streak in the vision field of the right eye, which disappears in ten minutes, to be replaced by a scotoma, then bright yellow tufts and stars which last half an hour. She found that when she lies upon the right side she can shorten the duration of this stage. Shutting the eye causes the bright objects to be more apparent, the stars become bigger, then smaller till the apparition disappears. This is succeeded by acute boring pain in the right temple, which extends to the eye. Shortly after there appear faces, statues, pagodas, always in motion, lasting about ten minutes; when the patient shuts the eyes they still persist; if the left eye alone is shut the figures appear on a dull background. This is commonly succeeded by the apparition of golden stars which soon pass away. After this the patient feels senseless; she does not know herself, nor recognise her husband; has a fear of approaching insanity, and that she is followed by some one. During this stage, which lasts about five minutes, she cannot utter a word. She does not lose consciousness, but has a very painful feeling that her understanding is passing away. This state is generally succeeded by vomiting, and the descent of the neuralgic pain into the cheek and chin.

Other graphic sketches remain, for which the reader must go to the original book. Dr. Krafft-Ebing draws with a skilful hand, reproducing essential features and passing over immaterial details. No one, however experienced in psychi-

atry, can read this work without materially increasing his knowledge.

Die Heil- und Pflgeanstalten fur Psychischkranke des deutschen Sprachgebietes, in J. 1890. Von Dr. Heinr. Laehr. Mit geographischer Karte. Berlin: Heimer, 1891.

It would be a useful undertaking if some one would write a similar account of the asylums and hospitals for the insane in the British Isles and colonies; another would be needed for the asylums in the United States. We need not enlarge upon the use of this handbook in German-speaking lands. Dr. Laehr's own countrymen have already shown their appreciation of his useful work. The first edition was published in 1852; there was another in 1865, and we possess the one issued in 1875, which contains 183 pages, whereas the present book has 230 pages; the increase is mainly owing to the increased number of asylums and other institutions for the treatment of insanity and idiocy. We advise all members of our profession interested in the treatment of the insane who may be travelling in Germany, Austria, or Switzerland, to get a copy of Dr. Laehr's handy little volume. By consulting the map the tourist may know when he is in the neighbourhood of an asylum, which otherwise he might pass by. There are few such asylums from which something may not be learned. In those which we have visited we have always been received with courtesy, and it may be added that, owing to the linguistic attainments of our German colleagues, ignorance of their language is often compensated by one or other of the resident medical staff. The principal merit of German asylums consists in the large proportion of medical officers, the diligent study of each case, and the persevering endeavours at medical treatment. The notices of each asylum seldom exceed a page, often they are less. Dr. Laehr deserves praise for his clear and concise statements, and the judgment he displays in the selection of details. We give a short translation from the summary at the end.

In the following States of the German-speaking lands (Germany, German Austria, Switzerland, the Baltic provinces of Russia, and Luxemburg), with 67,742,109 inhabitants, there are 296 asylums for the insane, with 692 physicians and 70,028 patients (35,443 males and 34,585 females), and also 162 public asylums, with 489 physicians and 56,168 patients (27,977 males

and 28,191 females), and 134 private asylums, with 203 physicians and 13,860 patients (7466 males and 6394 females). Amongst these there are 56 institutions specially for idiots and epileptics.

The German Empire, with a population of 46,855,704, has 121 public asylums, with 366 physicians and 42,751 patients (21,197 males, 21,554 females), and 114 private asylums, with 172 physicians and 12,983 patients (7032 males and 5951 females). Altogether, 235 asylums, with 538 physicians and 55,734 patients (28,229 males and 27,505 females). There are also, in special asylums, 7537 idiots and epileptics (4116 males and 3421 females). There are therefore, for 100,000 of the population, 118 patients in asylums, to every 104 of these one physician. The establishments for inebriates and public hospitals are not included in this. There are psychiatric clinics attached to the Universities of Berlin (1832), Greifswald (1834), Jena (1848), Würzburg (1848), Erlangen (1850), Munich (1861), Göttingen (1866), Strassburg (1872), Marburg (1877), Breslau (1877), Heidelberg (1878), Halle (1879—85 in Nietleben), Königsberg (1879), Bonn (1882), Leipzig (1882), Freiburg (1887). In Giessen a clinique is being built, and one is being prepared in Rostock.

The institutions for the care of idiots are not sufficient. They are mostly supported by charitable contributions. As education is compulsory, it is to be hoped that public institutions like those in the kingdom of Saxony, Mecklenburg-Schwerin, and Berlin will be followed by others.

In the German Empire there are thirteen unions designed to help discharged lunatics. There are six periodicals especially devoted to psychology and psychiatry.

Casuistische Beiträge zur forensischen Psychiatrie. Von Dr. E. Siemerling, o. ö. Professor, Director der psychiatrischen Klinik in Tübingen. Berlin, 1897. 8vo, pp. 172.

In this volume the learned author gives us a report of four persons accused of crimes, who were examined by him with a view to ascertain whether they suffered from mental derangement. These were all pronounced to be sane and responsible; eight other persons, whose cases are described at length, were held to be affected with chronic insanity, and not responsible at law. The descriptions are carefully given, and show much acuteness and a ripe knowledge of insanity. Next to actual

experience, such reports are instructive and useful as guides to medical men likely to be consulted about cases of insanity, real or simulated. It would, however, serve no purpose to try to present to our readers a condensed form of these descriptions.

Les États neurasthéniques (The Forms of Neurasthenia). By GILLES DE LA TOURETTE. Paris: J. B. Baillière et Fils, 1898. Pp. 100. Price 1 fr. 50.

This little book contains an admirable epitome of the clinical forms, diagnosis, and treatment of neurasthenia. There was a real danger that the confusion of views of various writers and the extension of the term "neurasthenia" to cover obscure maladies with which it has no connection would ultimately lead to the general discredit of the condition, or rather the group of conditions differentiated under that name. The author of this book has cleared up many of the legendary misapprehensions which have grown as accretions round the literature of the subject, and he has to a considerable extent limited and defined those states which may justly be included in the meaning of the term.

Following Charcot, he divides neurasthenia into two kinds: 1, the true neurasthenia, an acquired condition brought on by overwork, exhausting diseases, malnutrition, or worry; and 2, hereditary or constitutional neurasthenia. The predicate "hereditary" used in this sense denotes a special or more intense nervous heredity, and by no means implies that underlying true neurasthenia there is no heredity to the neuroses. In other words, the word hereditary is used in the same sense as when applied to insanity, to indicate a special hereditary tendency.

The true neurasthenia is distinguished by occurring after the action of an evident cause, by the absence of vesanic complications, such as fixed ideas, fixed hypochondriacal delusions, and chronic mental enfeeblement; by its curability under suitable treatment, and by the intensity of the physical symptoms. The constitutional form, on the other hand, is chronic; the symptoms may arise in early life in the absence of definite determining causes; may continue constantly or occur periodically, with a gradual tendency to become worse, until ultimately many of the subjects spend their time passing from hospital to hospital, and from one physician to another. The mental condition gradually becomes involved, hypo-

chondriacal delusions develop, and without actually becoming insane the patients touch the border-land of many of the well-known forms of mental aberration, such as melancholia, general paralysis, systematised insanity, &c. Into the differential diagnosis between chronic neurasthenia and these forms the author enters at considerable length. A division of the book is assigned to the description of the association of neurasthenia with hysteria—a condition which, judging from the author's description, is by no means common in this country, unless it corresponds to the British form of railway spine, for we are told that it is frequently caused by shock, especially in railway accidents.

The chapter on treatment is particularly minute, and considering the space into which it is compressed, appears to be very comprehensive. Great stress is laid upon the efficacy of hydrotherapeutics, especially the cold douche. Static electricity, applied at intervals of two days, is said to be an infallible cure for the distressing headache. Bromide of potassium in small doses (30 to 40 grs.) is given once a day (in the evening) for sleeplessness. Very little reliance is placed upon medicinal treatment. The dietetic regimen may be summed up in one sentence: the most nourishing and most easily digestible foods are to be administered, frequently and in small quantities at a time; and alcoholic stimulants are to be avoided. On the whole the prognosis is not encouraging, except in the true form; and even then, unless the patient has plenty of money, or abundant leisure and an easy life, the chances are that he will sink into a hospital chronic, or end in moral and physical degradation, or become insane.

Névrosés. PAR ARVÈDE BARINE. Paris: Hachette, 1898.

Pp. 391. Price 3 fr. 50.

THIS volume is an interesting and carefully documented series of studies of certain highly neurotic, and in some cases insane, men of genius—Hoffmann, Poe, De Quincey, Gérard de Nerval. The studies are all well written and instructive. It is sufficient, however, to refer here to the essay on Gérard de Nerval, and that for various reasons: this writer is little known, his importance has only recently been recognised, and owing to the kindness of the successor of Dr. Blanche, in whose private establishment Gérard de Nerval was frequently placed, M. Barine has been able to throw new light on the life of his subject.

Gérard de Nerval's real name was Labrunie, and he belonged to Picardy. He adopted the name by which he is now generally known from a field belonging to his family, and in later years, when he gave his fantastic conceptions free course, he traced his ancestry back to the Emperor Nerva. His father was an army surgeon, from whom the son inherited a certain vein of eccentricity which developed throughout life. His life may be said to have been a perpetual waking dream: he was never able to distinguish very clearly between the real and the ideal; his work in prose and verse was the outcome of this confusion, and bears constant witness to it. Throughout the greater part of his life his visions and ideas appear to have been fundamentally insane, though they were so brilliant and expressed with such eloquence that they seemed to his friends not so much the utterances of delirium as "the cosmogonic dreams of a god drunken with nectar." At last, however, in 1841, insanity began to appear, not only in his ideas, but in his conduct: he was found in the Palais Royal leading a lobster at the end of a blue ribbon, and his friends put him in the hands of Dr. Blanche, much to his indignation, though a man of sweet and equable temper. "Why," he asked, "is a lobster more ridiculous than a dog or a cat? I like lobsters, they are quiet and serious, they know the secrets of the sea, and they never bark." In eight months he was dismissed as cured, having, as he wrote to Mme. Dumas, "recovered what is commonly called reason; but do not believe it, I am the same as I have always been;" and he added that he had passed through a very pleasant dream which he regretted. After this, however, he endeavoured so far as possible to conceal "whatever might shock the materialism of alienists and the public." When he felt a crisis coming on he would disappear for weeks or months until he felt that he had regained calm. On one of these flights, into Germany, he noted with much satisfaction that what was regarded as insane in France was not so regarded in Germany. With the idea of proving his sanity, he undertook a journey to the East, and at Lebanon met a beautiful Druse girl, the daughter of a sheik whom he persuaded with great difficulty to give his daughter to him in marriage. At the last moment, however, a sudden gleam of sanity induced Gérard to break off the engagement, and he returned to Europe with his mystical dreams still further fortified and developed. His manner of life favoured this development; he was incapable of the most elementary precautions in financial

matters, though always in a position to procure money; his meals seldom cost more than a few pence; he only possessed two shirts, and by preference he spent most of his nights in the open air. At the same time he maintained a strain of intellectual sanity, and his letters deal rationally with the most varied topics. In the spring of 1853, however, a serious crisis arose. His pleasant and fantastic illusions gave place to oppressive hallucinations which made work impossible. One Sunday evening it seemed to him that the stars were being extinguished, and in place of the heavenly bodies he saw a blood-red sun, and then a number of moons.* Only one clear idea remained. He had undertaken a French translation of Heine's works, for which Heine had paid him in advance, and Gérard felt—whether on account of his own illness or of the approaching end of the world remains uncertain—that he must return this money. He went to Heine's house and talked so incoherently that Mme. Heine sent him in a cab to Dr. Blanche's. A month later he wrote *Sylvie*, his masterpiece in prose. A few days after the publication of *Sylvie* in the *Revue des Deux Mondes* Gérard behaved so strangely in the street, that a threatening crowd surrounded him; he was taken to the Charité, where it was considered necessary to apply the *camisole de force*, and in the morning he was again transferred to Dr. Blanche. At this time he believed that he was charged with the direction of the moon's movements, and everything around him seemed full of mystical significance. At the same time he possessed the power of minutely observing and analysing his own mental states, and he was amassing the material which a few months later he was to use to such excellent purpose in *Le Rêve et la Vie*. In this book, it has been said, "Insanity dictates its memoirs to Reason." It is doubtless, as M. Barine terms it, "a physiological and psychological document of the first order, only to be compared, in the whole of literature, to De Quincey's *Confessions of an Opium Eater*." Gérard left Dr. Blanche's apparently cured, and spent a month quietly in Germany, sufficiently able to dissimulate the extravagances of what he called his "mystic brother;" but on returning to Paris the first intellectual effort caused a recurrence of the old conditions even more severe in character; he now had ideas of persecution, and instead of regarding Dr. Blanche with affection, he considered him his gaoler. He was unfortunately

* This may be an instance of a vivid visual hallucination producing after-images.

liberated, owing to outside pressure which he was able to bring to bear, and a few months afterwards, on an extremely cold night in January, 1855, he was found dead, hanging to a window bar by the cord of a cook's apron in one of the lowest and filthiest streets in Paris. It was shown that he had committed suicide, and had long carried the cord about with him, regarding it at first as Mme. de Maintenon's girdle, and afterwards as the Queen of Sheba's garter. In his pocket were found the last fragments of *Le Rêve et la Vie*.

It is now generally recognised by competent critics that Gérard de Nerval's work is not only of permanent interest and value, but that he was the forerunner, both in prose and verse, of the latest school of French literature, the so-called Symbolists, whose reputation and influence are now European.

Gérard de Nerval, as M. Barine points out, differs from Poe, De Quincey, and Hoffmann in this important respect, that they may be said to have killed their genius by alcohol or opium, and their morbid mental states may be said also in some measure to be the result of their marvellous gifts. Gérard, on the contrary, lived a simple and blameless life, though bearing within him the congenital seeds of insanity. He was one of those very rare writers whose genius has been favoured and not impeded by the development of insanity. It is that which makes him so interesting a study for the alienist, and it is to be regretted that M. Barine has not presented us with more detailed facts regarding the course of his disease. The author of this interesting volume has, however, at least succeeded in showing that Gérard "was only really a poet in those hours when he was not altogether sane, and when he wrote under the dictation of his 'mystic brother.' He raises in a more disconcerting and irritating shape than ever that great question, so often asked and never answered, concerning the relationship of genius to insanity."

Ueber die Sexuellen Ursachen der Neurasthenie und Angstneurose. Von Dr. FELIX GATTEL. Berlin: Hirschwald, 1898. Pp. 68. Price 1 mk. 60.

The remarkable investigations of Breuer and Freud, of Vienna, into the nature of hysteria—recorded especially in their *Studien über Hysterie*, published about three years ago—are probably less known in this country than they deserve to be. Starting as a pupil of Charcot, Freud (who has perhaps

chiefly developed this study) was gradually led to depart from his master's views in many essential points, and he was especially led to the conclusion, which was beginning to be regarded as antiquated, that a sexual element is almost an essential factor of hysteria and allied neurotic conditions, such as the liability to causeless fright (*Angstneurose*). Apparently possessing boundless sympathy, patience, and clinical enthusiasm (sometimes making use of a slight degree of hypnosis to obtain details of the early life of their cases), Breuer and Freud obtained a series of histories which have at once the interest of novels and the skill of acute and elaborate psychological analyses. These histories have served to show that in a considerable proportion, at all events, of cases of hysteria and allied conditions the morbid state may be traced back to a lesion of the psychic sexual region, a mental shock of sexual character, sometimes dating from childhood and no longer actually present to consciousness, sometimes instinctively thrust into the background of consciousness; and in many cases the mere open recognition and confession of this sexual origin has been sufficient to remove the resulting morbid conditions.

Dr. Gattel is a Berlin physician who has been much impressed by Breuer's and Freud's results, and during a six months' visit to Vienna he was stimulated to carry out an inquiry on somewhat allied lines, though quite distinct in character. In the out-patient department of the psychiatric clinic (Krafft-Ebing's) of the General Hospital he made notes of one hundred successive cases of functional disturbance, excluding obvious hysteria, with special reference to the sexual history. These patients belonged, of course, to the working classes, and therefore would not present themselves for treatment unless feeling really ill; though, on the other hand, there was the disadvantage that patients of this class are not skilled in self-observation. In nearly every case, however, the sexual history seems to have been fairly well ascertained. The results of the examination of the patients (158 men and 42 women) are arranged in a tabular form. The nervous disorders found were (in order of prevalence) *Angstneurose*, neurasthenia, and hysteria, or some combination of these, the cases of hysteria being, for the reason above mentioned, in a small minority.

The author reaches the conclusion that neurasthenia in the thirty cases in which it occurred was in every instance led up to by long-prolonged masturbation. The occasional attacks

of terror, on the other hand, were always found in persons living in a state of sexual repression. A neurotic heredity was only found in 12 per cent. of the cases; this is a result, however, on which we cannot lay much stress. Nor can we attach very great importance to the fact (on which the author insists) that not one of his cases presented what may be called a normal sexual life: we cannot at present speak very positively about abnormal sexuality until we know more than we yet know regarding the facts of normal sexual life.

The author thus takes what we cannot at present but regard as a very extreme position concerning the importance of sexual irregularities and sexual repression in causing nervous disorders. He has, however, carried out his inquiry in a commendable manner, and we may hope that his results will lead to further investigations in this difficult but important field.

The Subconscious Self and its Relation to Education and Health. By LOUIS WALDSTEIN, M.D. London: Grant Richards, 1897. Pp. 171, small 8vo.

This book (the English edition of a work printed in America) is a literary essay rather than a scientific study. Though many authors are named or quoted, there is not a single definite reference to literature throughout. There are no foot-notes, table of contents, or index; and while interesting original experiments are briefly described, they are never detailed with the precision demanded by a scientific reader.

It is evident, however, that the author possesses a competent scientific knowledge of his subject, and he conveys his information and ideas to the reader in a pleasant and skilful literary style, a well-bred style that is content to touch on every subject in the slightest and sketchiest way, never staying to drive home an argument with precision and energy. Among the subjects thus lightly touched on are genius, the artistic impulse, dreams, hallucinations, coloured hearing, suggestion, hysteria, hypnotism, &c. The general tendency of the essay is to minimise the influence of heredity in explaining peculiarities and defects of nervous organisation, and to dwell on the influence of early impressions as of paramount importance; while the author further points out that this view enables us more easily to treat and to prevent such conditions. Dr. Waldstein is clearly on safe ground, though he apparently fails to recognise that the factor of heredity

must still be taken into consideration, and pushes his argument too far,—as when he remarks that so great is the force of early impressions that modern inventions like the telephone and the phonograph as yet play no part in the hallucinations of the insane.

L'Année Sociologique. Publiée sous la Direction d'Émile Durkheim. Paris: Alcan, 1898. Pp. 563. Price 10 fr.

With this volume Prof. Durkheim of Bordeaux, whose important study of suicide we recently noticed, has inaugurated a series in which it is proposed to do for sociological studies what *L'Année Psychologique* is doing for psychological studies. As sociology in the modern sense is concerned with many matters which are of interest to psychologists, and as Prof. Durkheim is one of the few sociologists whose methods are truly scientific, it seems worth while to call attention here to this new and valuable undertaking.

Like M. Binet's year-book, which it resembles in appearance, the volume consists of memoirs and analyses, although at present there is no full bibliography. The memoirs are wisely limited to two, but one of these at least—Prof. Durkheim's study of the origins of the prohibition of incest—is of great interest and value. The author here traces the prohibition of incest back to totemism, to the primitive custom of exogamy and the condemnation of marriage within the clan. He shows how this custom led to a profound antagonism between sexual passion and the duties of kinship, which antagonism has survived long after the decay of exogamy. Incidentally also he shows how totemism led to blood being regarded as a sacred thing, and hence, in consequence of the phenomena of menstruation, to the view of women as possessing magic virtues of good or bad influence. Thus the almost instinctive separation of the sexes that prevails to-day, and the reverence of women enshrined in our literature and art, may be traced back, link by link, to the primitive phenomena of social organisation and the conception of taboo.

The analyses of current literature are arranged in sections which include a very thorough account of recent work regarding various aspects of religion (primitive beliefs, domestic cults, beliefs regarding the dead, folk-lore, ritual, myths, monachism, &c.), the family, marriage, law and morals, punishment, social organisation, demography, &c. A large

section is devoted to criminal anthropology and allied aspects of criminality.

Memory and its Cultivation. By F. W. EDWARDS GREEN, M.D., F.R.C.S. London: Kegan Paul, Trench, Trübner, and Co. (International Scientific Series), pp. 310. Price 5s.

The greater part of this book is occupied by a psychological description and explanation of memory. Less than sixty pages are devoted to the subject of the cultivation of memory. The book must, therefore, be judged almost entirely from a psychological standpoint; and on that ground it must be admitted that it falls lamentably short of modern standards. So far as the author is concerned, physiological psychology might never have existed; not only so, but he proclaims, without any apology, his adhesion to the phrenological classification, which he declares to be "the best system extant, so far as the discovery and definition of the ultimate mental faculties is concerned." The usual well-known list of phrenological mental qualities follows, and they are seriously, though briefly, discussed *seriatim*. No definition of the term "mental quality" is attempted; but we are informed that "there is not sufficient evidence at present to admit of the various faculties of the mind being localised in definite portions of the cerebrum" (p. 246); although in another part of the book the probability of such a localisation is, on the analogy of Ferrier's motor areas of the cortex, not regarded as utopian. Nor is there any explanation given of the relation which the author conceives to exist between the so-called mental qualities and the process of memory. We are only informed that there is a motor and a sensory memory; that the former has its seat in the corpora striata, and the latter in the optic thalami; and that when any of the mental qualities are specially developed the corresponding memory is increased in a similar degree. The theory bears a fantastic resemblance to Wundt's apperception theory, but is entirely unsupported by any argument or evidence beyond the author's assertion.

The peculiar psychology of the book may be illustrated by the following quotations, taken at random from among many others that might be selected:—"The difference in function" (between the ultimate faculties of the mind) "is so great that we should as soon think of the liver taking on the function of the stomach as the portion of the brain devoted to the senti-

ment of love perceiving a tune" (p. 45). . . . "In the insane it is rare to find all the faculties equally disordered, and it is very common for a single faculty to be specially affected, as in many varieties of monomania" (p. 45). . . . "Nervous force is a product of the cerebral cells in the same way that bile is a product of the liver cells" (p. 52). . . . "A child, when born, is in possession of the higher faculties, and these have the same functions then as in after life. . . . Sucking is a very simple movement, and one which, the sense of taste being in the tongue and palate, consists in getting those parts as close as possible to the object desired. . . . Having found that sucking its hand is unsatisfactory, it will suck some other object applied to its lips, as the nipple or the teat of a bottle. The successful result of sucking these objects is remembered;" &c. &c.

While a description of the operation of sucking is, in itself, interesting and perfectly permissible, an attempt to found, upon a teleological unconscious instinct, any explanation of conscious thought phenomena is palpably absurd.

The short portion of the book devoted to the subject of the cultivation of memory will be found by those interested in it to contain many useful and curious suggestions.

Crime and Criminals. By J. S. CHRISTISON, M.D. Chicago: The W. T. Keener Company, 1897. Pp. 117.

This book is not a scientific work, but of the order of "pot-boilers." It is conceived in execrable American-English, and teems with slang terms redolent of the Bowery.

Dr. Christison finds his generalisations on a study of twenty-three criminals, the description of each being, as we are assured on page 9, the product of an examination of two or more hours' length. At this rate he must have wasted at least forty-six hours in compiling this unnecessary work.

He finds that "with prison inmates the forms of head and the expressions of face, in the great majority of cases, will be seen to differ in some respects from the normal type"—the normal type being represented in the frontispiece by the head of that intellectual giant, Ian Maclaren. The foregoing discovery is not phenomenally new, but it is at least true, and is well shown in the photographs given of the author's cases, all of which exhibit the ill-developed occiput characteristic of low-type skulls according to Crochley Clapham.

Two other discoveries Dr. Christison is responsible for: (1)

that "crimes are now nearly five times as numerous as forty years ago"—which we venture to doubt; and (2) "that New York has grown wickeder in the last ten years"—which we are inclined to consider probable if possible.

Dr. Christison wanders off occasionally into what he would call Psychologics, during which he formulates the proposition that "mind molds (*sic*) matter, while matter conditions mind by its inherent limitations." Notwithstanding the above lamentable restrictions, he considers that "it is in every-day evidence that a fortunate education will produce the best character in spite of the physical deformities we call degenerate stygmata (*sic*). External features do not indicate the moral character, though they must always represent energies which, if not well directed, will run wild. It thus would seem that environment explains heredity, and that, strictly speaking, nothing is inherited but specie characteristics." "Specie" is good, and no doubt some reference is intended to the "stygmata" observed amongst the gatherers of the almighty dollar.

Another interesting observation of our author's is, "According to statistics, as woman encroaches upon man's sphere she becomes more and more liable to become insane or to commit crimes." This is rather rough on the New Woman.

We really cannot follow our author further through his tangle of "repeaters," "hard cases," "safe blowers," &c. &c. He winds up with a chapter on the degenerate ear, concluding as follows:—"But the ear is very sensitive to emotion, as it is but little influenced by the will, and thus it may betray emotion when no other part of the body does." It is just possible that the author's ears may "betray emotion" should he come across this review.

PART III.—PSYCHOLOGICAL RETROSPECT.

SOME ASYLUM REPORTS, 1897-8.

English County and Borough Asylums.

Berkshire.—This report, the first one which we take in hand, raises the cry of want of room, either immediate or in the near future—a cry which is met with in almost every other report received by us. The accommodation is in process of being raised from 630 to 800 beds, but before this addition is ready it is feared that the authori-

ties will be in sore straits. Dr. Murdoch is of opinion that several cases, sent from workhouses, did not require asylum care.

Bristol.—A change of the city boundaries in 1897 added no less than 139 patients to the number for which the city was already responsible. This and similar additions have led to the further erection of blocks, and the 1000 beds, for which the administrative centres were provided, will soon be in existence.

Chester (Upton).—The electric light has superseded gas, and has demonstrated its practical and financial superiority. The weekly maintenance rate is 7s.

Derby (Borough).—Of the 82 admissions, more than one quarter were readmissions. These included cases sent to workhouses, every one of which was returned as unsuitable. In speaking of the number of cases sent in, for the reception of which the asylum was not intended, Dr. Macphail says:

Another unsatisfactory feature about the admissions must be mentioned—the fact that 5 children under 16 years of age were sent here for treatment. Although in each case they were certified as violent and dangerous, and requiring asylum treatment, we found them only troublesome in the sense that their habits were not clean.

Dorset.—This report contains several excellent photographs of wards, &c. We think this is desirable, as giving an opportunity to the outside public of seeing what asylum wards are really like. The accommodation for private patients is evidently excellent. £2500 profit was made on out-county and private patients. We hear that already steps are being taken to add to the accommodation. Ninety per cent. of the admissions were “first” cases. This is an undoubtedly high proportion, and seems to justify Dr. Macdonald’s opinion that, in Dorset at least, “occurring” insanity is on the increase. In 80 per cent. of cases coming from Portland heredity was found.

Glamorgan.—Dr. Pringle is not only right, but he is wise in preaching to his local authorities their duty in sanitary matters.

Now whilst many of these causes are avoidable, others are wholly beyond the control of the individual, and must be dealt with by the community, whose duty it is to provide healthy surroundings, so as to enable everyone who wishes to lead a wholesome life. When one sees, even in the homes of the wealthy, no provision for letting either fresh air in or impure air out, it need not be a matter of surprise that in the homes of the working classes the only ventilation is by doors or windows, which practically means that during the winter months the same air is breathed over and over again, a lower vitality results, and, too frequently, a craving for alcoholics, owing to the sense of temporary comfort and well-being that they give.

The following statement may well be added to our vaccination facts.

A female patient was found to be suffering from smallpox shortly after the visit of her friends, who, I believe, infected her. She was isolated as well as we could in our overcrowded condition, and she made a good recovery, and no other cases occurred; but we took the precaution of vaccinating all the inmates, sane and insane, who had not been recently protected.

Gloucester.—This report invites criticism, in the first place as to the unsatisfactory statistical information supplied. As we have frequently pointed out, this is one of the very few institutions in which the Tables of the Association are seriously departed from. But it also is, in places, unnecessarily aggressive. Because Mr. Craddock has much dementia to complain of (how much cannot be discovered in his tables) he, in despair, writes :

When I read reports of a recovery rate of 50 per cent. on admissions, I can only admire and envy, though sometimes sorely tempted to wonder with the old gillie, whether "higher up stream there are bigger fish or bigger lears !"

There is a *tertium quid*, which no doubt the gillie hid from his master—big fish require much art in catching. Anyhow, it is not for one medical superintendent to suggest to the public that any of his more fortunate colleagues may be fraudulent in his returns. The Committee in 1896 ordered that "no references should be given to those leaving to undertake similar work in other asylums," with a view to "checking the restless spirit and love of change." This has had a marvellously good (?) effect. We take leave to question the morality and wisdom of such a procedure. How can it be expected that good and suitable candidates will apply in the face of an unusual and harsh condition? The right way to check restlessness is to give good wages and a fair pension. This might well have been tried at Gloucester in the first instance. We wonder whether the same provision is attached to the junior medical staff.

Kesteven.—We have to congratulate Dr. Ewan on his appointment to the asylum of this newly separated area. The patients, to the number of 102, have been temporarily lodged in the old Grantham Workhouse, which has been adapted to requirements. Land has been purchased for a new asylum at Quarrington, near Sleaford, and plans are being prepared.

Middlesex.—The Annexe for Idiots has been opened. The Commissioners at their visit recorded their opinion thus: "We can hardly adequately express our satisfaction at this arrangement; and the neatness of these children in person and dress, together with their contented looks, show clear indication of the care and kindness bestowed upon them." A similar opinion was formed by those members of the S.E. Division of the Association who attended the meeting at Wandsworth in March of this year, on the hospitable invitation of Dr. Gardiner Hill. Notwithstanding this substantial addition, a committee has been appointed for the purpose of providing a new asylum, where it is proposed to have accommodation for private patients.

Monmouth.—The County Borough of Newport is leaving this asylum, and must remove its patients before the end of 1906. The union between Monmouth, Brecon, and Radnor has been dissolved also, the latter two counties having to provide accommodation for

themselves. Thus there will be much building activity in these parts. The committee gave each of the seventeen attendants who obtained the Association's certificate a silver medal, a gratuity of £2, and a substantial addition to his or her wages.

Nottingham (City Asylum).—Dr. Powell suggests to the committee the provision of accommodation for private patients of slender means, since it is difficult to find such accommodation anywhere in the Midlands. 14·3 per cent. of the admitted cases were general paralytics, and 20 per cent. were due to intemperance.

Salop and Montgomery.—The admissions showed the unusually high proportion of 60 per cent. of acute cases, no less than 16 cases out of 202 being acute dementia. We could wish that Dr. Strange would adopt the Association's Table of Causes. A considerable addition to the accommodation is called for by the crowded state of the wards.

Stafford (Burntwood).—We are glad to see that arrangements are being made for erecting on the male side an infirmary block on the same lines as the admirable accommodation recently provided for the females.

The farm has, as hitherto, been invaluable in providing an outlet for the energy of many of our troublesome cases—especially of our turbulent epileptics, of whom we have a very large number; and as a restorer to health of those recovering from various mental disorders its usefulness cannot be exaggerated. The past year has, in addition, enabled us to show a good balance at the right side of the profit and loss account, and the professional valuers in their report write that they “found the farm in a very good state; in fact we have seldom, if ever, seen a better lot of stock or in better form.”

Sunderland (Borough Asylum).—Dr. Elkins has had but a short tenure of office here, having been promoted to the Leavesden Asylum in place of Mr. Case, whose death shortly after his retirement we greatly regret. Dr. Middlemass has succeeded him. The drainage has continued to give trouble, but it is hoped that this will now cease. The admissions have increased by leaps and bounds. The number of cases becoming chargeable and sent to the asylum (Durham County till 1895) have been in the last eight years respectively—59, 48, 72, 63, 73, 71, 103, 102. On turning to Table XI to see whether the large increase in 1897 has been due to the filling up of vacant accommodation with troublesome workhouse wrecks, we find no case of chronic mania or chronic melancholia, and only one of secondary dementia, among the admissions. We are forced to the conclusion that there is in Sunderland a substantial increase in “occurring” insanity. Heredity was proved in 41 per cent., general paralysis accounted for nearly 10 per cent., and intemperance was assigned in 22 per cent. as a cause.

We are pleased to see that in addition to table x, Dr. Elkins (who makes the report) gives another, in which the forms of

insanity on admission are arranged according to Skae's classification.

Sussex (East).—Dr. Saunders, as usual, gives a valuable little table in the body of his report showing his prognosis of cases on admission. Of the 243 admissions 65 had good, 52 fair, and 125 bad or hopeless prospects, the latter being in striking contrast with the analogous proportion at Sunderland. More than a quarter of the admissions were actively suicidal.

A large number of tenile cases are sent here—let us hope it adds to their *eutanasia*—but sometimes the thought springs to mind that, for a mere senile breakdown, a person might be spared the association of a lunatic asylum with their life's history. In this connection it may be mentioned that the combined ages of four out of nine females admitted in the month of February amounted to no less than 302 years.

This report always contains a table (which might well appear in all other reports) showing the exact disposition of every pauper lunatic of the county, whether in the asylum, workhouse, with friends, &c. On comparing this year with last year we are struck with a great diminution in workhouse patients. A foot-note accounts for this as follows :

Some re-classification of the infirm in mind has been made in the Brighton Workhouse, and these figures show a decrease of 94 persons now certified as compared with last year's return.

It is cheering to hear of another way of reducing the total amount of insanity in the country.

Worcester.—The present report of the superintendent is made by Dr. Braine-Hartnell, who has succeeded to the office vacated by Dr. Cooke on his appointment to a commissionership in lunacy. The latter event is recorded by the Visiting Committee in terms of congratulation, regret, and warm appreciation of the work which Dr. Cooke has done for the county.

GERMAN RETROSPECT.

By William W. Ireland, M.D.

The Significance of Deficiency of the Corpus Callosum.—It might appear that it would be easy to find out the function of the corpus callosum (*trabs cerebri*), of which the situation is so suggestive and the anatomical relations so clear and definite, yet neither dissections nor vivisections nor the study of degeneration nor development have solved the *Balkenfrage*. Dr. H. Zingerle has a long paper on this subject in the *Archiv für Psychiatrie*, Band xxx, Heft 2. He describes the case of a little boy three and a half years old in whose brain only the genu of the *trabs* was remaining; there was hydrocephalus internus sufficient to mask any possible symptoms following the destruction of the corpus callosum. Dr. Zingerle has made a diligent study not only of his

own case, but of the recent literature of the subject. The reader may be grateful for the following notes. He confirms the observations of Onufrowicz, who described a band of fibres under the corpus callosum connecting the occipital and frontal lesions, the fronto-occipital association bundle or tapetum. It appears from the observations of Flechsig that we have no want of association bundles connecting parts of the same hemisphere together, and Dr. Zingerle traces the bundles of fibres connecting the basal portions of the cerebral lobes which come into prominence in the absence of the trabs. What we should like to know is how the trabs work in connecting the two hemispheres, and how or why deficiency or section of this structure is not attended with any apparent derangement of mental function. Dr. Zingerle starts the interesting question whether in such cases there is not at least a partial substitution of functional connection of both hemispheres; but he fails to follow out this obscure indication. The development of the corpus callosum begins at the fourth month of foetal life, a little after both the transverse fibres and those of the tapetum get their axis-band. He remarks that a knowledge of the course of the fibres in the anterior part of the corpus callosum is still too much a matter of conjecture. Rossi, however, assumes that the fibres of the corpus callosum are connected with the pyramidal cells of the cortex. Kölliker was able to trace the fibres in part into the great pyramidal cells, and partly to the polymorphic cells. The fibres of the trabs are also believed to take part in the formation of the superficial nerve-fibres of the cortex. Through the normal trabs the fibres of the occipital lobe are connected with the temporal lobes of the other hemisphere. Dr. Zingerle gives us the result of his anatomical examinations in the following terms:

1. Through the failure of the trabs fibres there comes into prominence a long connecting system between the frontal, parietal, and occipital lobes (fronto-occipital association-bundle of Onufrowicz, F. subcallosus of Muratoff) and between the temporal and parietal lobes.

2. The fibres along the walls of the middle ventricle have axis-cylinders in spite of the deficiency of the trabs. The posterior horn is mainly formed by the prolongation of the fronto-occipital bundle.

3. The cingulum gives some of its fibres to the middle wall of the posterior cornu.

4. The long association bundles go to constitute a middle association layer, which also comprises the cingulum.

5. The shorter association systems form an outer association tract, the layers of which can only be artificially separated from one another.

6. A layer of the basal frontal bundle runs through the anterior limb of the internal capsule to the ganglia of the middle brain.

Flechsig observes that the projection and association fibres

mostly end in defined regions of the brain, and serve to keep up the association of the different sensory spheres. He distinguishes different brain areas in which only association centres are represented; especially he describes a frontal, a middle, a parietal, occipital, or posterior association centre. There are thus no long conducting paths by which the different lobes of the brain are connected, and the sphere of bodily sensation in the middle of the cortex appears to connect the frontal and occipital parts of the cortex. Dr. Zingerle puts the question how far the results of these minute dissections agree with those of Flechsig. It cannot, he thinks, be denied that there are projection centres in the brain which throw off a large number of fibres, and that these portions are richer in such fibres. Clinical and experimental observations also combine in showing that lesions in certain portions of the cortex are followed by no recognisable symptoms in the sensory or motor functions, that there are dumb portions of the brain which when injured only entail defects that may be brought out by a fine psychological investigation. Dr. Zingerle did not succeed in tracing the fibres of the corona radiata into the areas of the association centres. In the cortex the nerve-fibres lose themselves in a maze, through which the histologist can trace neither their beginnings nor their endings. Our author observes that Flechsig has brought no convincing proof of his assumption that the different sensory areas are separated by neutral areas of cortical substance. If Flechsig, for example, assigns the basal long bundle of fibres of the association system to the corona radiata, this has not been confirmed by clinical studies. Our case, Zingerle observes, does not chime in with Flechsig's views. We saw in the first place a long connection between the frontal and parietal lobes on the one side and the occipital on the other, through which it could be ascertained that some of the fibres had become atrophied along with the deficiency in the visual sphere.

It appears that the sensory spheres indicated by Flechsig contain richer association fibres, and not only short ones which are the means of a direct connection with the adjacent parts of the cortex, but also some fibres which run through the areas of the presumed association centres without interrupting their course. Anatomical observations have shown that there is also a direct connection of the different sensory spheres through the trabs,—for example, the visual sphere of one hemisphere is connected with the auditory sphere of the opposite one. In the relations of the two hemispheres we do not find the principle carried out that the utilisation of sensory impressions does take place in separate association centres.

Not only does the fronto-occipital association bundle serve to maintain a connection with the frontal and occipital lobes, but also with the parietal, as Muratoff has already pointed out. By this path there is an opening for the direct transmission of im-

pressions from the visual sphere to the motor centres of the parietal and frontal lobes; perhaps this has something to do with the co-ordinated action of the muscles of the eyes. Wernicke regards the lower portion of the parietal lobe as the optic motor field. Flechsig, on the other hand, describes a cortifugal path to the visual sphere, the fibres of which path do not get their axis-cylinders at the same time as the fibres of the visual sphere. This path allows excitations to reach the nuclei of the nerves of the muscles of the eye. Dr. Zingerle concludes his long paper with the following observations:

In order to understand the functions of the fronto-temporal bundle we must wait for further researches. Flechsig observes that in the first month the nerve-fibres of the path from the third frontal have been found to have axis-cylinders. This tract goes backwards to the outer capsule and thence to the anterior substantia perforata. At the same time there is a band of fibres also with axis-cylinders which goes from first parietal gyrus to the lenticular ganglion, and loses itself in the substantia innominata, where the first-mentioned tract from the third frontal seems to end. Flechsig does not say whether these two systems of nerve-fibres communicate with one another. This may turn out to be the case.

Innervation of the Vessels of the Brain.—Obersteiner describes a preparation in his museum ("Arbeiten aus dem Institut für Anatomie und Physiologie des Centralnervensystems," herausgegeben von Prof. Obersteiner, Heft v, 1897, quoted in *Centralblatt für Nervenheilkunde*, November, 1897) which shows a net of very fine branching nerves clinging to a small artery of the pia. The nerves had been coloured with chloride of gold. The intra-cranial arteries have a distinct muscular coat, of which the contractions and dilatations are no doubt regulated by these nerve twigs. The distinguished pathologist believes that the variations observed in the calibre of the minute arteries of the brain are dependent upon irregular innervation of the walls of the vessels.

Amusia.—Knauer describes this disorder in a patient with exophthalmic goitre (*Deutsche med. Wochenschrift*, No. 46, 1897, reported in *Neurologisches Centralblatt*, No. 5, 1898). She took a great interest in music, for which she had a high capacity, and had received good training. She suddenly lost in one night her ear for tones and musical sounds, although she had practised her music as usual the day before. At the same time the patient was troubled with noises in the ears, giddiness, sense of choking, headache, attacks of unconsciousness without any previous aura, dullness of hearing, and sleeplessness. There were also ringing sounds in the ear, generally excited by the hearing of melodies. If one person alone spoke to her she could understand, but when several spoke she only heard a confused noise. It was found by careful examination that she had lost the perception of tones, the under-

standing of musical notation, the power of singing after another person, the capacity of writing musical notes after hearing them, and of singing from notes, but she still retained the power of copying music and of spontaneous singing. Knauer treats this as a pure case of sensory amusia, or tone deafness, analogous to cases of aphasia, in which the power of using words or writing are more or less lost. He holds that there are analogous centres and conducting paths for the musical functions as for those of speech. The injury to hearing resembles those attending Menière's disease. He regards the affection as the result of intoxication on the brain following upon deranged function of the thymus gland.

Retrograde Amnesia after Hanging.—In the Hospital Tidende of Copenhagen (reported by Berger in the *Neurologisches Centralblatt*, No. 2, 1898) Dr. Knud Pontoppidan describes the following case. A man aged sixty-five, with a neuropathic heredity, had, under the pressure of care and sadness, long entertained thoughts of suicide. One morning he got up early and tied a thin cord round his neck; between the noose and the skin he put some pieces of cloth, and suspended himself by bending his knees. He hung for about two minutes before he was cut down. Carried to the hospital, he lay for twenty-four hours without consciousness. During this time the head was livid above the ring in the neck. This was succeeded by restlessness and agitation, which lasted two hours, after which the patient fell asleep. He awoke with full consciousness, but his recollection only reached back to the evening before the attempt at suicide. He remembered going to bed, but after that till he awoke in the hospital his memory was a blank. This remained the case a year after the event. With this patient there were all the marks of great hyperæmia, brought on by the asphyxia and the compression of the carotids. There was also a partial paralysis of the nervus accessorius, and of the branches of the cervical plexus, as a result of the pressure of the noose.

Dr. Pontoppidan mentions another patient who had also retrograde amnesia following fracture of the skull, and recalls other instances of the same derangement after epileptic attacks, poisonings, infectious diseases, and hysteria.

Tattooing.—Dr. Buschan has sent in a reprint of a short paper on this custom communicated to the *Handwörterbuch der Zoologie*, Band vii, and there is another paper on the subject in the *Centralblatt für Nervenheilkunde* for April, 1898, by Dr. Otto Snell. Tattooing is practised over the whole world, and has apparently been practised in primeval times. In the palæolithic deposits of France and Germany there have been found pins of bone with lumps of oxide of iron and bits of pottery similar to the utensils still employed for tattooing amongst savage tribes. The historians of antiquity have recorded many peoples addicted to this practice, the Assyrians, Phœnicians, the Hebrews, the Geloni, the Britons, and the Picts. To-day we find tattooing not

only amongst wild tribes, but amongst persons in the most civilised countries. Buschan tells us that it is most common with sailors, soldiers, shepherds, and labourers. I know that most fishermen in Scotland are tattooed, sometimes under the idea that it may serve to get their bodies identified should they be drowned. I believe Buschan is right in saying that in Great Britain even some members of the aristocracy are tattooed. This holds especially with naval officers. Lombroso found it very frequent with criminals, and treated this as a convincing proof of atavism, but we may regard it as the remains of a custom which has descended from ancient times rather than a sudden revival of a forgotten custom. Daguilhen, amongst 501 insane persons in the Asylum of Ville Evrad, found 62 tattooed. Snell tells us it is commoner with the lower class of prostitutes, especially in sea-ports: about ten per cent. were found tattooed in Copenhagen. Tattooing is much commoner with men than with women. It is difficult to understand why this method of disfiguring the skin should be so common with human beings. As practised by soldiers, sailors, and fishermen, the tattooed figures are often very simple and inartistic,—arms, swords, guns, anchors, names; a heart pierced by an arrow is a common device, or initials of sweethearts, often succeeded by others, are the most frequent. We have also seen figures beautifully executed in various colours. There are artists in Japan who are skilful in tattooing. The sites most frequently chosen for tattooing are the arms and breast.

Visual Disturbance with Dwarfism and Giant Growth.—Uthhoff (*Berl. klin. Wochenschrift*, No. 29, 1897, reported in *Centralblatt für Nervenheilkunde*, April, 1898) describes a case of stunted growth with injury to the sight. This was a child who remained quite sound both in body and mind till the ninth year. From this time, apparently after inflammation of the lungs, her bodily growth ceased. The girl is now fourteen, but presents the appearance of a child of about nine years of age. The thyroid gland has almost disappeared, the skin has a peculiar unhealthy appearance, is rather thinner than usual, and not baggy as in myxœdema. The intelligence seems unaffected. The injury to sight consists in a temporal hemiopia with descending atrophy of the optic nerve and hemiopic pupil reaction. The cause of the disease must lie in the neighbourhood of the chiasma. It probably consists in some anomaly of the pituitary body. Uthhoff also describes two cases of megalakria which were accompanied by loss of sight, anomalies of the field of vision, and disturbance of the muscles of the eye.

Isolated Hallucinations.—Traugott describes a patient who was treated in the Polyclinique for nervous disorders at Breslau (*Allgemeine Zeitschrift*, Band liv, Literatur Heft). She was a woman 75 years old, who had dimness of the lens in both eyes. She also complained of headache, giddiness, sleeplessness, and sounds in the ears. A singular symptom was hallucinations of sight. They

began with an appearance like a brightened cloud, which was succeeded by a procession of lively coloured images across the field of vision, generally from left to right, such as a ship and a company of men, which passed along and then disappeared. The woman fully recognised that these apparitions were the result of disease.

Artificial Production of Illusions in Delirium Tremens.— Professor Bechterew (*Centralblatt für Nervenheilkunde*, October, 1897) calls attention to Liepmann's experiments showing that in some cases of delirium following upon drinking, pressure upon the eyeball was sufficient to induce spectra of various kinds (see our German Retrospect for April, 1896). The apparitions were seldom those of beasts, rats, or mice, as is common in delirium tremens, but rather of inanimate objects or of men, and they were rarely of a threatening character. Professor Bechterew recalls the old observations of Jolly, who found that he could induce illusions of hearing by excitation of the ear through the continued current, as well as those of Köppe, who found that he could arouse illusions of hearing by the use of the ear speculum and similar manipulations; and Nücke found that visual illusions could be produced by irritations applied to the eyeball, causing flashes of light, which in the diseased brain were transmuted into apparitions. Alzeimer showed that by pressure upon the eyeball illusions might also be induced in paranoiacs, hysterical patients, epileptics, and paralytics, so that this was not a symptom peculiar to alcoholic delirium. Bechterew goes on to say, "In my old observations of the alcoholic form of mental derangement I have for many years given much attention to the artificial production of illusions of the senses, though not with the same methods. To produce illusions of hearing I made use of the monotonous of a hammer of the induction apparatus, to which the patient's attention was directed. To produce optic illusions the patient was made to gaze at a glittering object held near the eye, as is practised in hypnotising. In this and similar ways I found that I could easily induce illusions of the senses, not only during the period of delusional delirium, but also for some time after it had quieted down. I have had patients in whom no symptom of the delirium was left, and nevertheless it was enough for the patient to hear the sound of the induction apparatus when he heard a voice which uttered words. In the same manner were produced visions of objects and faces. In some cases these illusions could be brought back months after the subsidence of the delirium. A striking example of a similar condition was afforded by a patient who had an attack of acute alcoholic insanity, with hallucinations of hearing almost confined to the left ear. Years after the subsidence of this attack, on fixing his gaze upon a glittering object there appeared to him first the vision of a double watch, a little after that of a man gesticulating, then of a man with children. In this patient, hearing the sound of an induced

current battery excites illusions of hearing. These deceptions of the senses have little unpleasant or threatening.

Bechterew observes that it is not a sufficient explanation to assign these illusions to the heightened excitability of the sensory organs; they are much more owing to the suggestions of strained attention. These stimuli only succeed when the patients direct their attention upon them. When this is not the case they are followed by no such illusions. There is no doubt that whatever significance we may assign to peripheral irritation as a cause of illusions, the great excitability of the psychical centres plays an important part. Bechterew observes in conclusion that such illusions are common in alcoholic insanity, although they may appear in other forms of mental derangement.

In a succeeding paper, "On the Suggestive Influence of Hallucinations of Hearing," Bechterew comments upon the mixture of acuteness in argument and unreason in a patient who heard a male voice in the left ear. Though the impressions of all his other senses were correct, this hallucination commanded his complete faith. There are cases, observes the Professor, in which the hallucinations of the senses are so lively that they seem more convincing than the representations of another person. In this case, however, the voice was confined to one ear, which was generally the seat of a subjective noise, and the hallucination was accompanied by an abnormal sensation in the outer ear and the parts around the ear muscles. Under these circumstances the Professor feels much surprise that the patient would not admit the force of his arguments as to the falsity of the hallucination, and defended his own belief by fanciful remarks and ingenious questions.

The Influence of Alcohol on Muscular Activity.—Professor Destrée of Brussels has made some experiments on this question (*Monatschrift für Psychiatrie und Neurologie*, Band iii, Heft 1). There are two views of the action of alcohol; one that it is exciting, the other that it is paralysing to muscular action. Using Mosso's ergograph, Frey reached the conclusion that alcohol has an injurious action upon an unwearied muscle, and a favourable action upon a wearied muscle. Destrée finds that alcohol has a favourable influence both on an exhausted and upon a fresh muscle, but that this influence passes so quickly away that if one waits above fifteen minutes this stimulus has disappeared, to be replaced by the paralysing effects of alcohol.

From his experiments with the kilogrammeter Destrée concludes that the favourable influence of alcohol follows almost immediately after its enjoyment, but is only of momentary duration. After this the paralysing effect of alcohol comes into play. The muscular capacity sinks about half an hour after the use of alcohol to a minimum, and it is difficult again to raise it by new doses. The paralysing influence of alcohol much surpasses the short

exciting effect, so that the total muscular capacity is actually lessened by its use. Such depressing effects are not observed after the use of tea, coffee, and kola.

Cardiac Deficiency as a Cause of Insanity.—Dr. Jacob Fischer has a paper in the *Allgemeine Zeitschrift für Psychiatrie*, Band liv, Heft 6, upon the "Influence of Heart diseases in producing Insanity." After quoting the views of a number of authors on this question, amongst whom are Dr. Mickle and Dr. Farquharson, and describing some cases which he himself has observed, Dr. Fischer states the following conclusions:

1. Diseases of the heart may become the exciting cause of insanity in predisposed persons. The different symptoms which accompany such disorders, such as pain in the precordial region, palpitation, exaggerated heart-sounds, feelings of constriction, difficulty of breathing, headache, and giddiness, may all, by causing derangements of sensation and illusions of the senses, become the starting-points of insanity.

2. Deficiencies of the heart's action may lead to mental affections in persons not predisposed, partly by deranging the circulation of blood in the brain, and partly by altering the chemical action of the blood. The mental disorders thus caused generally take the form of mania hallucinatoria, confusional insanity with hallucinations. The hallucinations take their colour from the abnormal organic feelings.

3. If the heart disease goes on without alleviation or betterment, the hallucinatory derangement may pass into dementia.

The Etiology of General Paralysis.—Dr. Heiberg of Copenhagen observes that almost all the cases of general paralysis in that city find their way into St. Hans Hospital. It is therefore interesting to compare what is known of the prevalence of syphilis with the deaths from dementia paralytica. The mean time from luetic infection to the outbreak of general paralysis is estimated at twelve years; the mean duration of the latter disease at three years. In fact, there was observed a maximum of syphilitic cases in the year 1869, and a maximum of deaths from this and paralytics in the year 1884. There was another rise in the frequency of syphilis in Copenhagen in the year 1886, and so we may expect a corresponding rise in the mortality from general paralysis at the beginning of the next century.

In this connection it may be mentioned that Dr. Müller, in a contribution to the statistics of general paralysis in the *Allgemeine Zeitschrift für Psychiatrie*, Band liv, Heft 6, 1898, informs us that out of 96 cases of general paralysis (65 male and 31 female) which he examined in the Asylum of Gabersee, in Upper Bavaria, he only found lues in 14·6 per cent., *i. e.* in 17·7 per cent. of the men and 6·4 per cent. of the women. This, Dr. Müller observes, agrees with statistics obtained from the asylums at Munich and Deggen-dorf. Kundt found for the latter place syphilis certain in 8·4 per

cent. for the men and 7 per cent. for the women. Heilbronner for Munich found it certain in 16.26 per cent. of the men and in 6.3 per cent. of the women, and that it was very probable in 9.4 of all cases, in 6.2 per cent. of the men and 16.1 per cent. of the women.

Dr. Müller is somewhat apologetic at not making out such a large percentage as is done in circles of the better and more intelligent class of society, which amount to 50 and more per cent. He treats his own lower percentage as owing to the difficulty of gaining information of the past history of his patients.

The Differential Diagnosis between Lues Cerebri and Dementia Paralytica.—Dr. Wickel has given the results of his studies in the Psychiatric Clinique of Professor Tuzcek of Marburg in the *Archiv für Psychiatrie*, Band xxx, Heft 2. The paper occupies 78 pages, and is illustrated with a wide lithographic plate and twelve woodcuts of handwritings. Dr. Wickel begins by stating that there are two ways in which syphilis acts injuriously upon the nervous system, by well-known anatomical changes of a specific character, and through a chemical poison engendered by the luetic process causing post-syphilitic degeneration. To the last of these lesions belong tabes dorsalis and general paralysis. This assumed poison acts first upon the nerve-fibres, and then causes infiltration of the nerve-cells much in the same way as diseased maize, ergot of rye, alcohol, lead, opium, bromide of potassium, and atropine, all which intoxicants may be the cause of a pseudo-paralysis resembling dementia paralytica. Dr. Wickel cites some statistics to show that syphilis holds the first place as a cause of general paralysis. It is known that there are cases of insanity following on syphilitic infection which bear a close resemblance to general paralysis. There is a like alteration in the reaction of the pupils, mental weakness, excitement, depression, and finally an apathetic state—symptoms common to both. The difference is that in dementia paralytica the mental degeneration is more progressive; in pseudo-paralysis syphilitica the disturbances of the muscular apparatus of the eyes are of a shifting character, there are fleeting and chronic aphasic symptoms, passing pauses, and mental weakness not advancing. The decisive test is recovery under treatment with iodide of potassium and the repeated inunction of mercury. Dr. Wickel describes six cases at great length. In all the evidence of luetic infection was decisive. Four of these patients recovered through antisiphilitic treatment. One of them died, a man forty-two years old, who had lues thirteen years before. The insanity lasted about three years. Attempts at treatment were of no avail; the disease seemed to take on more and more the typical character of general paralysis. The post-mortem appearances are described at great length. There were endarteritis and arterial changes, and meningitis visible to the naked eye, and thickening of the membranes, discoloration of the arachnoid, with adhesions of

the pia mater. It might be advanced that when the cause is identical and the symptoms are so much alike, it is a mere matter of literary arrangement to call the one false and the other true general paralysis, because in the latter case the malady is so virulent that it will yield to no treatment. It seems, however, certain that there are instances of general paralysis which do not arise from syphilis either hereditary or acquired, and that in ordinary cases antisyphilitic treatment is of no avail.

The Mental Derangements of Old Age.—*Die Geistesstörungen des Greisenalters*, von Dr. Hermann Schmidt, of Dalldorf. Sonder-Abdruck aus *Deutsche Medizinal-Zeitung*, 1898, Nos. 9—15.

Neuere Arbeiten über die Dementia Senilis und die Atheromatöser Gefässerkrankung basirenden Gehirnkrankheiten.—Referiert von A. Alzheimer, *Monatsschrift für Psychiatrie und Neurologie*, Band iii, Heft 1.

Ueber Miliare Sklerose der Hirnrinde bei seniler Atrophie. Von Dr. Emil Redlich, *Jahrbücher für Psychiatrie und Neurologie*, Band xvii, Hefte 1 and 2.

Of late years there have been several studies of senile dementia, some of which have opened new points of view, while others have deepened our knowledge of the symptoms and histology of this form of alienation. It is not to be wondered that senile insanity should have some well-marked features. It is difficult to understand how the periods of pubescence or adolescence should have any causal connection with mental derangement, as these are times of healthful growth; but old age as a period of decline seems liable to loss of and perversion of function. Such studies are somewhat dismal. A man is not bound to have epilepsy or general paralysis; but all men not prematurely cut off become old, and in describing the degenerative changes of that period pathologists can hardly forget that they are recording their own future. It is some consolation to bear in mind that in the natural progress of life the blunting of the faculties is gradual and almost insensible, and that some old men retain their intellectual power, their acquired knowledge, and acquired skill almost to the last. Indeed, old age may have certain advantages and compensations, as shown by Cicero in his treatise *De Senectute*. Passing over the examples of Fabius, Cato the Censor, Masinissa, and other heroes of antiquity, we have proofs in our own day of what old men can do in von Moltke, Radetzky, and Lord Clyde. It is needless to mention their powers in deliberative assemblies and in writing history, which seem the most natural occupations for men who have led long lives distinguished by action and ripe studies.

The following observations are less cheerful, giving the pathological side of natural decline. It is not easy to fix an average time when old age may be said to commence. In some men, indeed, it begins twenty years after others, nor does it equally affect every function of the body. As the two powers of assimila-

tion and absorption slacken, the vital processes are less active on the surface of the body than in the central organs, and thus the nervous system retains its capacity for some years longer.

In old age there has been noted a diminution in the volume and weight of the brain. It has been found, Dr. Schmidt tells us, quoting Demange, that at the thirtieth year a man reaches the weight of 587 grammes for each hemisphere, after which there is a diminution of about 10 grammes for every five years. It is remarkable that the brain should keep about the same weight from the fiftieth to the seventieth year. After that age the weight rapidly diminishes, so at the age of eighty-five the total brain loss is about 207, of which the larger half, 106 grammes, is borne by the physiologically higher left hemisphere.

In women the brain attains its highest weight about the twenty-fifth year. From this time till thirty-five there is a loss of weight. From sixty to eighty-five the diminution is about 90 grammes. Such a loss can only be accounted for by a decrease in the mass of the brain. Alzheimer observes that we are indebted to Noetzli for a fresh statement of brain weights in senile dementia taken with exactness, and after a method free from objection. Of especial interest are the forty cases of senile dementia without any inflammatory deposits. The mean brain weight was for men 1195, for women 1099 grammes. The brain weight of a healthy man is taken as 1400 grammes, of a healthy woman as 1300 grammes. Thus in senile dementia there was noted a decrease of about 200 grammes. The atrophy of the cortex was found to be greater than that in the cerebellum and pons and medulla. Dr. Alfred W. Campbell has observed that in senile insanity there is almost invariably a decrease in the diameter of the spinal cord, and a diminution in its weight. It may be here noticed that both Schmidt and Alzheimer frequently quote from Dr. Campbell's valuable paper upon "The Morbid Changes of the Aged Insane," which was published in the *Journal of Mental Science* for October, 1894. It is not my business to reproduce the information given by Dr. Campbell, which is generally confirmed by the German pathologists.

All observers are agreed that the most noteworthy degeneration of old age is in the arterial system. Demange states that in 500 examinations of the bodies of old men there was not a single case in which there was no atheroma. Alterations visible to the naked eye are found in the aorta, the coronary arteries of the heart, and the basilar arteries of the brain. The occurrence of atheromatous degeneration in the larger vessels is an indication that such changes are also to be found in the smaller ones, but their absence in the aorta or radial artery is no proof that the brain of a senile dement is exempt from them.

The degeneration of the larger vessels seems to begin with diminution or closure of the calibre of the *vasa privata*. These

changes implicate more or less the other internal organs of the body, especially the kidneys and liver; but we shall confine our attention to the lesions observed in the spinal cord and the brain, which are of the same character. Kostjurin found in his examination of twelve brains of old persons between sixty-five and eighty-eight a strong deposit of pigment in the ganglion-cells, whilst in the young the cells are free from pigment. In two of these brains there was observed a decrease in the number of the nerve-fibres, sclerosis of the vessels, atheromatous degeneration of their walls, with calcareous deposits, a slight increase of pigment in the adventitia, a great increase of the neuroglia, thickening of the neuroglia layer of the cortex, and a greater or less number of corpora amylacea in the same situation. These bodies are also observed in the spinal cord, especially in the anterior fissure. In the cord the increase of the neuroglia is sometimes very marked. The nuclei in the ganglion-cells of the spinal cord do not colour with osmic acid. They are affected by dyes more like the protoplasm. The cell nucleus of the aged is shrivelled in an irregular way; the nucleus of the wearied cell is also shrivelled, but colours more readily. Alzheimer confirms the observations of Bevan-Lewis and Campbell as to the increased number of spider-cells in the brain of persons affected with senile dementia. They are especially numerous in the furrows between the gyri.

The changes noticed in senile dementia are of the same character as those in extreme old age, though more marked.

Alzheimer remarks that there is a doubt whether the arterial sclerosis of the brain vessels be the sole cause of the degeneration of the brain in senile dementia. It may be preceded by primary atrophy of the nerve-cells. There are other forms of disease in which the atheromatous degeneration stands in the middle of the degenerative process. In arterio-sclerotic disease of the kidneys the result is much the same whether the whole parenchyma is attacked at once or whether this is the result of divers morbid processes. In the kidney one cell has the same function as another, but in the brain, owing to the diversified function of its different anatomical elements, the order and succession in which the different tissues or localities are invaded by morbid action must produce different clinical symptoms. In like manner Redlich puts the question, Is the disappearance of the ganglion-cells the primary lesion, the changes in the neuroglia the secondary, or the reverse? These are problems still to be worked out.

After noticing the distinction traced by Dr. Campbell between the enlarged soft spider-cells met with in paralytic and alcoholic insanity, and the increase of spider-cells in senile dementia, Alzheimer thus goes on:—"The first layer of cells of the cortex is generally diminished in depth. An extensive degeneration of the ganglion-cells is always observed. One finds cells in all states of decay. The typical change is the pigmentary degeneration, which

affects cells of all sizes. One notices cells whose protoplasm is wholly replaced by pigment. There is an increase of pericellular nuclei and of the nuclei of the neuroglia. The blood-vessels of the cortex are in some places not easy to distinguish. The perivascular spaces are mostly dilated and contain pigment, some leucocytes, and detritus. The tissues around are full of fibres, and contain spider-cells. The basal ganglia show still more marked changes in the vessels and their vicinity. The perivascular spaces, through the destruction of the surrounding tissues, widen into irregular cysts, which contain remains of fibres and cells, blood-globules and detritus. One often finds a squeezed blood-vessel on the wall of such hollows. The tissue which surrounds the cyst appears brown, infiltrated with crystals of hæmatoidin, and there are also heaps of spider-cells. Some sections show the evolution of these cysts from small extravasations of blood produced by the decay of the surrounding tissues." The description of the changes in the spinal cord are taken from Campbell's paper. Well-marked and important changes are also observed in the peripheral nerves in senile dementia; also acute parenchymatous degeneration of single fibres, a notable diminution in the number of the large nerve-fibres, which are replaced by connective tissue. There are also bundles of fine nerve-fibres, which have only a thin sheath thickening of the peri- and epineurium, which are infiltrated with fatty cells, and great thickening of the vessels with proliferation of the intima. Nissl has pointed out the dividing of the nuclei of the neuroglia of the cortex in senile dementia.

Alzheimer observes that in some cases the peri-vascular sclerotic process is confined to some parts of the cortex. To this form he gives the name of perivascular gliosis of the cortex cerebri, on account of the remarkable degeneration of the neuroglia with which it is associated. He has met with perivascular sclerosis of the cortex in persons from fifty to seventy years old. In such cases the clinical symptoms vary with the site of the lesion. There may be aphasia, paralysis, word-deafness, or word-blindness. The decline in senile dementia is often not general, but there are breakdowns at some weak points in the organism.

Dr. Redlich describes at length a case of advanced senile dementia in which there was much atrophy of the whole brain, especially marked in the frontal and parietal lobes. Redlich's microscopical observations coincide with those of Campbell and others, that the alterations in the ganglion-cells and nerve-fibres, and the appearance of pigmented spider-cells, are characteristic of senile atrophy.

Peculiar to the case described by Redlich was the appearance of very small patches of miliary sclerosis. They were rare in the molecular layer, and most diffused in the pyramidal layer, to become again scarcer in the deeper parts of the cortex. This microscopist is uncertain whether the miliary patches, which he carefully

describes and figures, are the result of the degeneration of glia cells and fibres. The fibres in the patches are sometimes observed to pass into glia fibres; but they do not take on dyes in the same way, and the military degeneration is most frequent in the localities of the ganglion nerve-cells.

Dr. Schmidt calls attention to *senium præcox*, or *dementia senilis præcox*, which sometimes attacks adolescents after infection of malaria, intoxications and long illnesses. Charpentier describes this form as sometimes resulting from purely mental causes, such as a change in the surroundings of the patient. The most usual symptoms are sleeplessness, want of appetite, listlessness, melancholy, and loss of memory. Alzheimer thus describes *dementia apoplectica*:—"It is sometimes observed that even in young persons apoplexies, which need not be in the cortex or hemispheres, are followed by a slowly progressing dementia which closely resembles that of old age."

Alzheimer found that the anatomical substratum of this declining mental power consisted in alterations in the cortex, even in the hemispheres unaffected by the hæmorrhage, changes which bore a close resemblance to those of *dementia senilis*. Beyer has lately described the mental condition in *dementia apoplectica*. He finds it characterised by listlessness and apathy, indifference to what is going on in the outer world, dislike of moving about, tendency to tell stories, weakness of the memory for recent occurrences, with a good recollection for events long passed. The speech is often slow, drawling, and varying in tone. Often there are tremors and difference in the facial muscles and contraction of the pupils on one side. The reflexes are normal or increased.

We have not space for the clinical descriptions of the symptoms of senile dementia, which are of a diversified character. Indeed, those who make a special study of the affections of senility sometimes trace their lines too exclusively. Old people generally die of the same diseases as adolescents. The difference is that their vital powers of resistance are lower. Dr. Clouston has lately shown that diseases of the nervous system become more frequent in advanced life; and no wonder, since most people who have lived long in this age have their nervous system most severely tried.

PART IV.—NOTES AND NEWS.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

ANNUAL MEETING.

The fifty-seventh annual meeting of the Medico-Psychological Association of Great Britain and Ireland was begun in the hall of the Royal College of Physicians, Edinburgh, on Thursday, July 21st, Dr. McDowall (Morpeth) presiding. The following members were present:—Dr. T. W. MacDowall (President), Drs. A. R. Urquhart (President elect), J. B. Spence, J. Rutherford, H. Hayes Newington (Treasurer), J. G. MacDowall, T. Seymour Tuke, H. Rayner, T. S. Clouston, G. J. Swanston, W. Rooke Ley, A. H. Stocker, A. Campbell Clark, T. Aldous Clinch, John G. Havelock, James Rorie, Neish Park Watt, James Chambers, Fletcher Beach, W. R. Watson, E. Powell, Walter S. Kay, Bedford Pierce, D. Yellowlees, F. Sidney Gramshaw, R. Langdon-Down, L. R. Oswald, A. R. Turnbull, E. B. Whitcombe, F. Perceval, John Mills, Harry A. Benham, C. S. Morrison, C. Mercier, J. Carlyle Johnstone, D. G. Thomson, P. W. MacDonald, W. Ford Robertson, G. M. Robertson, J. Peeke Richards, John Keay, Conolly Norman, James Hyslop (Natal), Crochley Clapham, Richard Legge, J. A. Campbell, T. R. Macphail, and Robert Jones (General Secretary).

Congratulatory telegrams and letters of regret for non-attendance were received from Drs. Ireland, David Nicolson, Wigglesworth, Briscoe, A. Friis, Benedikt, Virchow, Jolly, Bianchi, Boeck, Magnan, J. H. Paul, E. Cowles, Kurella, Ludwig Meyer, Sir William Gairdner, Sir Grainger Stewart, and Oscar Woods.

The SECRETARY (Dr. Jones) read the minutes of last meeting, held at Newcastle, and these were confirmed.

ELECTION OF OFFICERS AND COUNCIL.

The following were elected Officers and Council of the Association :

<i>Officers.</i>	
<i>President</i>	A. R. URQUHART.
<i>Treasurer</i>	H. HAYES NEWINGTON.
<i>General Secretary</i>	ROBERT JONES.
<i>Registrar</i>	J. B. SPENCE.
<i>Editors</i>	HENRY RAYNER.
	A. R. URQUHART.
	CONOLLY NORMAN.
	EDWIN GOODALL.
<i>Auditors</i>	T. SEYMOUR TUKE.
	T. OUTTERSON WOOD.
<i>Divisional Secretary for South-Eastern Division</i>	E. W. WHITE.
<i>Divisional Secretary for South-Western Division</i>	P. W. MACDONALD.
<i>Divisional Secretary for Northern and Midland Division</i>	W. CROCHLEY CLAPHAM.
<i>Divisional Secretary for Scotland</i>	A. R. TURNBULL.
<i>Divisional Secretary for Ireland</i>	A. D. FINEGAN.

Other Members of Council.

A. LAW WADE, J. CARLYLE JOHNSTONE, A. W. CAMPBELL, T. S. SHELDON, JAMES CHAMBERS, OSCAR T. WOODS.

PARLIAMENTARY AND EDUCATIONAL COMMITTEES.

It was agreed, on the motion of Dr. BOWER, seconded by Dr. CROCHLEY CLAPHAM, to re-appoint the Educational Committee.

The re-election of the Parliamentary Committee was proposed by Dr. BOWER and seconded by Dr. CLAPHAM; but Dr. RAYNER proposed, and Dr. ROOKE LEY seconded, that Dr. G. Thomson and Dr. Gardiner Hill be added to their number, which was carried.

ELECTION OF MEMBERS.

The following were elected ordinary members of the Association, Dr. Whitcombe acting as scrutineer.

Ashton, George, M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Claybury, Essex (proposed by Robert Jones, T. E. K. Stansfield, H. Hayes Newington); Blair, David, M.A., M.B., C.M., Assistant Medical Officer, County Asylum, Lancaster (proposed by D. M. Cassidy, James F. Gemmell, Frank A. Elkins); Gill, Frank A., M.D., C.M.Aber., Deputy Medical Officer, H.M. Prison, Manchester (proposed by David Nicholson, W. Crochley Clapham, Robert Jones).

ELECTION OF HONORARY MEMBERS.

Dr. POWELL proposed the election of Mr. George Thomas Hine, architect, as an honorary member of the Association. He had devoted himself almost exclusively for the last twenty years to the designing of asylums for the insane, and those of them who had the management of the asylums which Mr. Hine had erected could speak very highly of the extremely able manner in which they had been planned. Mr. Hine stood in the very first rank of asylum architects, and the Commissioners of Lunacy had appointed him their consulting architect. There was a precedent for electing a gentleman who was not a medical man. He referred to Sir William Wyatt, who was chairman of the Colney Hatch Asylum.

Dr. HAYES NEWINGTON, in seconding the motion, said that the Honorary Membership of the Association was given to those who were distinguished members of the medical profession, those who were eminent in psychology or those branches of science connected with the study of insanity, or who had rendered signal service to humanity. Mr. Hine by his ability had done much to produce a good machine for the treatment of insanity. He was eminently worthy to be enrolled among their honorary members.

Dr. CLOUSTON, Edinburgh, proposed the election of Dr. V. Magnan, Paris, as an honorary member. He was one of the most distinguished neurologists in France, the head of psychiatry in Paris, and the highest living authority on alcoholism.

Dr. URQUHART seconded the nomination.

Dr. RAYNER, in proposing Dr. A. E. Macdonald, New York, for honorary membership, said he was a gentleman in every way worthy of that honour. He was general superintendent of the Manhattan State Asylum, had written on different phases of insanity, and he had been delegated to represent the American Medico-Psychological Association in this country for two years in succession.

Dr. URQUHART seconded the nomination.

All these gentlemen were unanimously elected.

TREASURER'S REPORT.

Dr. HAYES NEWINGTON, in presenting the balance-sheet, pointed out that the disbursements were a little higher this year in consequence of there being more secretarial work. Under "Miscellaneous" the sum was higher in consequence of the Memorandum of Association. They had also this year the Jubilee Address to Her Majesty and the address to Dr. Beach. On the other side the income from

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—For the Year 1897.

REVENUE ACCOUNT—January 1st to December 31st, 1897.

1896.	Dr.	Expenditure.	£	s.	d.	£	s.	d.	Income.	£	s.	d.	Cr.	1896.
547 17 6	To Journal, Printing, Publishing, Engraving, Advertising, and Postage	Examinations, Association Prizes, and Clerical Assistants to Registrar	497	15	10½	...	...	...	Dividends	...	190	13	0	1896.
75 2 2	" Petty Disbursements, Stationery, Postages, &c.	Annual, General, and Divisional Meetings	75	5	9	...	...	...	" Sale of Journal	...	16	1	4	£
36 12 6	" Rent of Premises at 11, Chiswood St., care of Office, &c.	Audit and Clerical Assistance	47	13	11	...	...	...	" Sale of Handbook	...	11	0	6	s.
96 7 8	" Miscellaneous	Balance	102	0	7½	...	...	...	" Advertisements	...	44	3	0	d.
45 15 0			48	12	6	...	...	...	Fees, Certificates of Psychological Medicine	...	80	10	6	1896.
6 6 0			6	6	0	...	...	...	" Fees, Certificates of Proficiency in Nursing	...	...	...	£
26 10 6			39	3	1	816	17	9	" Subscriptions	...	...	...	s.	
97 5 10			...	...	...	70	19	7	...	...	...	...	d.	
£928 17 2			£887	17	4	£928	17	2	...	...	...	...	£

BALANCE SHEET—31st December, 1897.

1896.	£	s.	d.	Liabilities.	£	s.	d.	Assets.	£	s.	d.	
44 17 4	Journal Account, balance of	...	49	13	6	...	...	Lloyd's Bank :—Bankers	...	174	4	2
5 9 2	Petty Disbursements Account, balance of	...	7	13	8	...	...	New Zealand Stock	...	340	10	1
3 19 1	Examinations Account, balance of	...	1	0	0	...	...	£34 per cent value at this date...	...	363	7	10
10 0 0	Meetings Account, balance of	...	5	1	1	...	...	Hack Tuke Memorial	...	115	13	4
3 5 11	Gaskell Fund	...	4	5	7	...	...	Sales Account, balance	...	90	16	6
...	Rent account	...	...	...	...	...	...	Subscriptions Account, balance	...	...	...	...
...	Miscellaneous	...	...	...	...	...	...	Gaskell Fund...	...	...	...	...
581 13 4	Balance :—Balance on 1st January	...	581	13	4	67	13	10	...	...	...	...
...	Add :—Balance of Revenue Account	...	70	19	7	...	...	...	...	...	...	...
...	Increase in value of New Zealand Stock	...	13	19	10	...	...	...	...	...	...	...
...	New Zealand Stock (Hack Tuke Memorial)	...	353	7	10	...	...	...	...	...	...	...
...	Deduct :—Subscriptions written off	...	1020	0	7	1006	18	1	...	...	...	...
...		...	13	9	6	£1074	11	11	...	...	...	...
£2647 4 10			£1074	11	11	£2647	4	10	...	...	...	...

H. HAYES NEWINGTON, TREASURER.

E. WOODINGTON, C.A.

E. B. WHITCOMBE, }
T. SEYMOUR TUKK, } Auditors.

dividends was slightly larger in consequence of their changing their Stock from Consols into New Zealand Stock. The sale of the JOURNAL was a little lower, but that was a matter of accounting. The sale of the Handbooks, of course, was considerably below, because they had been out of print for some time. The fees came to very much the same, but the subscriptions were considerably higher—£536 against £511. He should like to point out, further, that the amount of subscriptions written off last year were £13 2s. 6d., and this year it would be less. Last year also there was a great improvement on the year before. Generally he might add that the Association was flourishing and seemed to be in a perfectly sound position, the balance of £526 being a good deal in excess of what it was last year. The cost of the July number had yet to be met, but undoubtedly they were in a better position this year than last year.

The Auditors' report, which was read, certified the accounts as correct. They were glad to be able to report that the financial condition of the Association was satisfactory. They had carefully examined the present system of bookkeeping, and strongly advised that no alteration be made in it without the consent of the Council. The report was signed by Drs. Whitcombe and Seymour Tuke and Mr. Woodington, C.A.

The Treasurer's report was put from the Chair and adopted.

The TREASURER said he had to make a statement of the payments on both sides in respect of the Gaskell Memorial Fund. Last year the balance was £4 5s. 7d. to the credit of the Association. This year they had spent more than they received. The payments on the one side were £18 5s., and on the other at the credit of the Gaskell Fund £64 4s. 9d. The Association at this time held £51 19s. 9d. of the Gaskell money. The figures would all appear in the Treasurer's report.

Statement of Payments made and received by the Treasurer on account of the Gaskell Memorial Fund.

Dr.				Cr.				
1897.		£	s. d.	£	s. d.			
Oct. 6.	To Mr. Wyon			July 24.	Balance	4	5	7
	for 3 gold			Oct. 8.	From deposit account	18	5	0
	medals	15	15					
	2 silver ditto	2	10					
			18	5	0			
1898.	Balance	51	19	9				
			£69	4	9			
								£69
								4
								9

Dr. CLOUSTON moved a vote of thanks to the Treasurer for the great trouble he had taken and for having adopted a very clear mode of stating the accounts so as to enable them to compare one year with another.

Dr. RAYNER seconded the motion, which was cordially agreed to.

PARLIAMENTARY COMMITTEE'S REPORT.

Dr. HAYES NEWINGTON, as chairman of the Parliamentary Committee, said the report had been printed. They had held two meetings, one in April, which decided to send the result of their deliberations to the Lord Chancellor, who was good enough to acknowledge receipt, and to say that he would give the matter before him careful consideration. Nothing had resulted of any importance. The other meeting was held in May. They had not been able to do very much good, but the Lunacy Bill was not likely to pass this year. No doubt many members would feel a great amount of regret that the Pension Clauses would drop again. For reasons

he gave he begged to move, with the approval of the Council, that a sum of not more than twenty-five guineas be allowed the Parliamentary Committee to take the opinion of counsel on certain points, if this was found on further consideration to be advisable. There was a strong feeling that great injustice was being done in different parts of the country to asylum officers, and it was thought that this was a matter in which the Medico-Psychological Association might well interfere, and that there were few subjects on which it could expend its available funds to better purpose. He had suggested also to the President that it might be useful to hold a conference to-morrow morning of asylum officers who happened to be in Edinburgh at this time.

Mr. WHITCOMBE proposed and Dr. ROOKE LEY seconded the adoption of the report, which was unanimously agreed to.

Dr. HAYES NEWINGTON said another question was discussed in the annual Committee. Five members were appointed to meet five members of the British Medical Association to form a Joint Committee to study the question of clauses for the treatment of incipient insanity somewhat on the lines of the Scots clauses. The Joint Committee had met several times, and had produced a clause to which he thought nobody could object on account of its application. It simply provided that in obtaining a certificate from a registered medical practitioner to the effect that a person was suffering from incipient insanity, and might well be treated in his house, he should not be exposed to the application of the section which imposed penalties on those who took into their houses lunatics without proper provision. The clause was as follows:—“(1) Where a medical practitioner certifies that a person is suffering from mental disease, but that the disease is not confirmed, and that it is expedient, with the view to his recovery, that the patient should be placed under the care of the person whose name and address are stated in the certificate for the period also therein stated, not exceeding six months, then during that period the provisions of Section 315 of the Lunacy Act, 1890, shall not apply. (2) A medical practitioner who signs such certificate shall within three days after signing the same send a copy thereof to the Commissioners, and it shall be lawful for any Commissioner to visit the patient. The person under whose care the patient is placed shall not be the person who signs the certificate. (3) The person who receives a patient under such certificate shall within ten days after the expiration of the period mentioned in the certificate, or if he ceases to have the care of the patient under the certificate at an earlier date, then within ten days after such earlier date send a report to the Commissioners stating whether the patient recovered, and if not, in what manner he was dealt with when the person making the report ceased to have the care of him under the certificate.”

Dr. RAYNER moved that the report be adopted, and that the Parliamentary Committee be asked to press still further on the Lord Chancellor the desirability of this change in the law.

Dr. MERCIER opposed the proposal. The clause practically superseded the Lunacy Acts, seeing that it allowed lunatics to be received and treated in private houses without any safeguard whatever. He thought it was a most pernicious proposal. It was said to deal with cases of incipient insanity, but who was to decide on incipency? At the present time among the better class it was exceedingly difficult for them or their relatives to decide sufficiently early in the interests of patients whether they were to be placed under control. If this clause ever became law that difficulty would be greatly aggravated, and they would have lunatics of the better class at large without control all over the country. It was a thing this Association ought not to sanction, and he protested against it. He proposed as an amendment that this clause be not proceeded with.

Dr. WHITCOMBE seconded.

Dr. URQUHART said that a similar clause had been in operation for many years in Scotland, and they had experienced no such difficulties as Dr. Mercier had conjured up. He considered it one of the most valuable of their legal instruments. Patients were not kept out of asylums by reason of that clause, except those who

should not enter asylums. As for its retaining patients under private care without proper supervision, they knew that England was full of such cases at the present moment; that it was a disgrace that any person was permitted to keep an insane patient if he could get one. It was reasonable to deal with cases in the initial stages of mental disease without the full apparatus of certificates and orders; and he thought it would be greatly for the benefit of England if such a clause were adopted. He should like very much to hear if anybody in Scotland who had practical experience of the matter had ever had cause to regret that the clause was part of their law. He did not believe any one would be found to say he had.

DR. RAYNER said that he felt that this clause would help them greatly in the early treatment of insanity. Those concerned would have no hesitation in putting their insane friends under such care, where they would not place them under certificate. It would rather help than hinder the work of the asylums.

DR. HAYES NEWINGTON said, in reply to a question, that the clause was not exactly the same as the Scottish clause. This distinctly provided for the detention of the patient because it abrogated the only section of the English Lunacy Act which punished a man for detaining a person illegally. He did not think that the power of detention was settled in Scotland.

DR. CROCHLEY CLAPHAM said in Scotland under this clause they did not require to send notice to the Commissioners at all.

DR. URQUHART in explanation said the Scottish clause merely exempted a person who received a lunatic for money from the operation of the law to which he would otherwise be liable. That was one distinction; the other distinction was that it was not compulsory in Scotland to send notice to the Commissioners. Most of them thought that it would be a good thing if that were adopted, but not for the purpose of entering these patients on the Register of Lunatics. It was tried in England to make the proposed clause wider so that no question should arise out of it. In Scotland it had never been decided what the powers of detention were.

DR. P. W. MACDONALD said he felt inclined to agree with a good deal of what Dr. Mercier had said; he also agreed with a good deal that Dr. Hayes Newington had said. He was afraid a happy state of things existed in Scotland that they did not find in England. If he thought that this clause would lead to early treatment of the insane, of course he should not oppose it, but he was not convinced that it was going to do so. The effect of it would rather be that insane people would be sent into private houses and never reach an asylum.

DR. YELLOWLEES (Glasgow) said that in Scotland they had no difficulty in carrying out the clause. Many patients within the six months' limitation recovered who would otherwise have had the stigma of the asylum placed upon them. The provision which allowed this class of patients to be received into a private house for six months seemed to them in Scotland to be a valuable one, and he could not understand why they in England should not rejoice to obtain similar provision. Under the Scottish system the Commissioners did not take cognisance of these cases. One object of the clause was to keep these people off the roll of lunatics, but whether they might not be visited by the Commissioners was another matter.

DR. HAYES NEWINGTON, in reply to Dr. Macdonald and Dr. Mercier, said he had been led to favour this clause by a consideration of the treatment of insanity in private houses in England. They thought that if such procedure as the clause suggested was recognised people would be bound to adopt it. At present there were a great many patients kept in private houses without certificates, and the Commissioners had had little power to come down effectually on these people. There had been notorious cases of their failure to secure convictions. If there was a simpler procedure, such as the clause suggested, for dealing with such cases benches of magistrates and juries would not be so inclined to let off people brought before them.

On a division seven voted for Dr. Mercier's amendment; and on the motion being put, it was declared carried by a large majority.

EDUCATIONAL COMMITTEE'S REPORT.

Dr. CLOUSTON asked Dr. Mercier to explain the amended regulations for nursing, for he (Dr. Clouston) had been unable to attend the meetings of this Committee.

Dr. MERCIER said he had little to add to what he had said at Newcastle in reference to this report, which had received a great deal of careful consideration on the part of the Educational Committee. It embodied certain very important alterations in the nursing regulations. It was therefore thought at Newcastle that these ought to be before the Association for a year before arriving at a final decision. The draft of the proposed regulations had now been before the Association for about fifteen months, and as this present meeting was a very large and representative one, he should trust that a decision would be come to that day. He thought it would be convenient if the regulations were read and discussed *seriatim*.*

On Paragraph 2, Dr. MERCIER said there were two debatable points in this section. The first and most important was whether the period of training, which hitherto had been two years, should be raised to three years; and further, another point was whether the training should be in an institution for lunatics.

Dr. CROCHLEY CLAPHAM said the North Division were in favour of two years.

Dr. TURNBULL said that Scottish opinion was pretty evenly divided. The majority, however, was in favour of two years.

Dr. MACDONALD said that at Oxford they were unanimously in favour of two years.

On a division, twenty voted for three years and twenty-one for two years.

On the point that the training of nurses should be in "an institution for lunatics,"

Dr. CARLYLE JOHNSTONE moved that in the clause the words "institution for the treatment of mental diseases" should be inserted instead of "institution for lunatics," leaving the point regarding the recognition of any such institution to the judgment of the Council.

After some debate, Clause 2, as thus amended, was then passed by a majority.

On Paragraph 3, Dr. CLOUSTON moved that the word "one" should be substituted for "two" years in the fifth line.

Dr. YELLOWLEES moved that two years stand.

On a division eleven voted for one year, while for two years there was a large majority.

On Paragraph 5, Dr. CARLYLE JOHNSTONE moved under Sub-section "a" "That practical instruction in nursing and attending on the insane be arranged at the discretion of the medical superintendent."

Dr. MERCIER said it was assumed that all these regulations were done under the eye of the medical superintendent. If he was not specifically mentioned in these regulations it was for the sake of brevity. They were keeping up the general system of education both among the attendants themselves and also among the petty officers of the institution.

Thirteen voted for the amendment and eighteen against.

On Paragraph 9, Sub-section "d," Dr. HAYES NEWINGTON said it would be impossible to carry out the proposal unless they increased the fee beyond 2s. 6d. To equalise matters in the various districts, candidates' papers examined should be paid for each at the rate of some definite sum. The reports of divisional meetings showed them dead against any increase over 2s. 6d.

Dr. JOHN MILLS said that as the Association was making a profit of £80 a year on these examinations, he did not see any difficulty in appointing paid examiners.

Dr. YELLOWLEES moved that the fee be raised to 5s. Dr. CARLYLE JOHNSTONE seconded.

* Cf. draft of proposed amended regulations sent out as circular by the Educational Committee.—ED.

Dr. MACDONALD moved that the fee stand at 2s. 6d. Dr. BENHAM seconded.

On a division, Dr. Yellowlees' motion was carried by a large majority as against thirteen for Dr. Macdonald's amendment.

Dr. TURNBULL moved that two examiners be appointed for each section of the Association. Dr. STEWART seconded.

Dr. J. A. CAMPBELL suggested that two examiners should be appointed for Scotland, two for Ireland, and four for England.

Dr. SPENCE desired that a scheme should be proposed and brought before the Council showing how this could be carried out. The principle had been accepted, the money had been provided, and the details should be carefully considered before taking definite action.

Dr. Spence's suggestion was agreed to *nem. con.*

On *Sub-section "f,"* Dr. CARLYLE JOHNSTONE moved that instead of the word "superintendent" the words "examiner or examiners appointed by the Association" should be inserted. Dr. CAMPBELL seconded.

Dr. HAYES NEWINGTON hoped there would be no alteration of this clause, which was the result of a careful compromise after a long debate. It had worked very well, and he hoped it would be continued.

Dr. YELLOWLEES said the point was that the superintendent of the asylum, who had himself trained the nurses, ought not to be the actual examiner. He certainly ought to be present, but the coadjutor ought to ask most of the questions.

Dr. CLOUSTON said they ought to follow the precedent of the Universities. Where they had two examiners they could not make one the inferior to the other.

The amendment was not pressed.

On *Paragraph 10*, Dr. YELLOWLEES said they ought to have it stated in the certificate much more clearly than it was that it was not a certificate of the moral character of the person holding it, but simply a certificate of proficiency in mental nursing. The endorsement on the back of the certificate should be on the front page, but it would please him best if every reference to moral character were struck out of the certificate.

Mr. WHITCOMBE did not think they should now change the form of their certificate, which had been granted to thousands of persons, on account of exceptional cases which had come under the notice of Dr. Yellowlees.

Dr. SPENCE said he felt so much in favour of what Dr. Yellowlees had said that he ventured to suggest that the point should be remitted to the Educational Committee for their consideration.

Dr. YELLOWLEES agreed, provided the Committee reported next morning. His amendment was that the certificate should run "that A. B. has, after examination by us, and after two years' training, shown that he has obtained proficiency in nursing and attendance on insane persons," and that all reference to his character and conduct be deleted.

Dr. Spence's suggestion was agreed to, and all the other clauses in the report were unanimously adopted.

AFTERNOON MEETING.

On resuming after lunch, the retiring President (Dr. McDowall) said the duty he had now to perform was to introduce the new President, Dr. Urquhart. They knew what an excellent officer he had been in this Association; that for many years he had done splendid work for the JOURNAL, and that in other departments his services had been highly appreciated. In leaving the chair he (Dr. McDowall) had to thank them again for the great honour they did him in electing him President, and he had to thank the various officers and members of the Council for their great assistance in carrying on the affairs of the Association.

Dr. YELLOWLEES moved that the thanks of the meeting be given to the retiring President, Dr. McDowall, for the admirable manner in which he had filled the chair, last year. They all remembered the admirable address he gave them at Newcastle, and his splendid hospitality there; and they knew how assiduously he had attended

their meetings in the course of the year. He had presided over these meetings with ability and with courtesy, and he was sure it was the feeling of the meeting that they should express their thanks to him. (Carried by acclamation.)

FRIDAY'S MEETING, JULY 22ND.

SECOND DAY.

The Association met at eleven o'clock in the Library of the Royal College of Physicians, Dr. URQUHART, the President, in the chair. He called upon

Dr. CLOUSTON, who said in regard to the form of the nursing certificate, which was referred to the Educational Committee for consideration and report, that the Committee had a full meeting that morning. It was composed of men with great experience in this matter of granting certificates, together with the Registrar as their adviser. They all knew how much they owed to him. The Educational Committee felt that this was a question that the Association should have time to carefully consider. The result was not to come into operation till 1900, and they came unanimously to the following conclusion:—"That Paragraphs 10, 11, 12, 13, 14, and 15 be referred to the Educational Committee for consideration and report to the next annual meeting." The Educational Committee pledged itself that it would so conduct this matter that every member of the Association would have an opportunity of voting on it. Their report would be circulated by their honorary secretary in due time to secure that. He moved the adoption of the resolution of the Educational Committee.

Dr. MERCIER seconded, and on the PRESIDENT putting the motion to the meeting, it was unanimously adopted.

Dr. CLOUSTON further intimated that the Educational Committee recommended firstly, that the examiners be nominated to the General Council by the Educational Committee; secondly, that the examiners should be three in number; and thirdly, that their fee be the extra half-crown added to the former fee as fixed by the meeting on Thursday. He moved the adoption of these recommendations.

Dr. RAYNER seconded, and the motion was agreed to.

REPORT OF THE HANDBOOK COMMITTEE.

Dr. HAYES NEWINGTON submitted the report of the Handbook Committee, which stated that the new edition of the handbook would be ready in five or six weeks. It was now in print, and had been revised, considerably extended, and improved. It was proposed to issue another 6,000 copies. They had sold 9,000 of the old edition. The report was adopted.

THE LIBRARY REPORT.

Dr. FLETCHER BEACH submitted the report of the Library Committee, which stated that a considerable addition had been made to the library by the gift of books by the late Sir John C. Bucknill.

The report, after a statement by the TREASURER as to the reinvestment of a funds in New Zealand Stock, which would realise more income, was adopted.

REPORT OF COUNCIL.

The present number of members is 574 (including 36 honorary, 12 corresponding, and 526 ordinary members). At the date of last annual meeting there were 557 members, the increase for the year being 17.

Two members, whose subscriptions were each three guineas in arrear, were removed from the roll. In 1897 there were 29 new members and 21 names removed—5 by death. In 1898 to the date of the annual meeting 36 have joined and 6 removed—3 by death. The chief accession of new members has been at the General and South-western meetings.

Three general meetings have been held, and each division has held two meetings during the year.

At the May examination for the Nursing Certificate 599 candidates, drawn from 55 asylums, and 1 private nurse, sent in schedules duly filled up. The asylum candidates were drawn from 23 English county asylums, 11 borough asylums, 6 private asylums and hospitals, 8 Scotch asylums, and 7 Irish asylums. Of the 600 candidates (260 males, 340 females), 471 (198 males, 273 females) were successful; 102 (49 males, 53 females) failed to satisfy the examiners; and 27 (13 males, 14 females) withdrew from the examination. Deducting the number of candidates who withdrew, 82.19 per cent. (80.16 males, 83.74 females) gained the certificate, and 17.80 per cent. (19.75 males, 16.25 females) failed to do so.

At the examination for the Certificate in Psychological Medicine 8 candidates presented themselves—4 in London and 4 in Edinburgh. One man examined in London failed. There was 1 candidate (male) for the Gaskell Prize. He was not successful. The Bronze Medal was awarded to Dr. John R. Lord, Hanwell.

The library has been enlarged by a gift of books from the collection of Sir J. C. Bucknill. Additional bookshelves have been erected at a cost of £12, and binding has been done to the amount of £13. It is proposed that the catalogue should be issued in connection with the JOURNAL, in the same form as the "Index Medico-Psychologicus." The Committee have been re-appointed, with the addition of Dr. Outterson Wood.

The letter of Dr. Beattie Smith, published in the July number of the JOURNAL, has had the attention of the Council.

THE PREVENTION OF INSANITY.

Dr. E. B. WHITCOMBE moved:—"That a small committee be formed to consider the subject of the prevention of insanity, and to suggest means whereby this may be accomplished, and report thereon to this Association at a subsequent meeting." Dr. RAYNER seconded.

Dr. CARLYLE JOHNSTONE said that in the year 1890 a committee of this Association was appointed to formulate proposals as to the care and treatment of the insane. They had taken up the question of prevention of insanity. After reading the report of that committee in so far as it dealt with the proposal of Dr. Whitcombe, he would ask Dr. Whitcombe whether he thought that it was within reasonable expectations that they would be able to add anything worthy to what that committee had already formulated. If Dr. Whitcombe felt that he could, then he (Dr. Johnstone) would suggest that Dr. Whitcombe be appointed the committee, with powers to add to his number. Dr. PERCIVAL seconded.

Dr. CLOUSTON said the difficulty lay in carrying out the suggestions of the committee of 1890, and he considered it was quite possible that some plan might be devised to instruct the public on such an important subject.

Dr. WHITCOMBE, replying to the discussion, said the committee of 1890 was for care and treatment only, and besides that he hoped that Dr. Johnstone did not hold that there had been no advance since that time.

The motion was adopted *sem. con.*, and a committee was appointed, consisting of Dr. Turnbull, Dr. Drapes, Dr. Mercier, Dr. Spence, Dr. Rayner, and Dr. Whitcombe.

ASSOCIATION PRIZES.

The PRESIDENT intimated that the Gaskell Prize had not been awarded this year. The Bronze Medal of the Association had been won by Dr. John R. Lord, Assistant Medical Officer, Hanwell, whose essay will be found at page 693.

VACANCIES IN THE COUNCIL.

The PRESIDENT said that the secretary informed him that Dr. Robert S. Stewart, Dr. Maury Deas, and Dr. L. W. Rolleston had been removed from the Council, by rule, in consequence of non-attendance at meetings, and further that the Council unanimously recommended that Dr. Ewart, Dr. Soutar, and Dr. Hotchkiss should be elected in their stead. This was agreed to unanimously.

PAPER.

Dr. G. R. WILSON, Mavisbank, read a paper on "The Mismanagement of Drunkards," which is printed in this number of the JOURNAL (see page 711).

AFTERNOON MEETING.

At half-past two o'clock, in the Laboratory of the Scottish Asylums, the President in the chair.

Dr. HAYES NEWINGTON moved a hearty vote of thanks to the Royal College of Physicians for their very kind hospitality and for the use of their Hall, in which they had met with so much comfort. It could not but add dignity to the proceedings of the Association to hold its meetings in such a home of learning.

Dr. NORMAN seconded, and the resolution was carried by acclamation.

Dr. McDOWALL proposed a vote of thanks to the Scottish Asylums Laboratory Committee and their worthy director, Dr. Ford Robertson, for permission to meet there that day. He took that opportunity of warmly congratulating their colleagues in Scotland on their position there, on the evidence of progressive work, and on the very good results, which they hoped to see yet augmented.

Dr. FLKTCHEER BEACH seconded, and the resolution was also carried by acclamation.

Dr. R. JONES said it was his privilege to propose a vote of thanks to Dr. Turnbull, who had been responsible for the arrangements, and who had carried them through this their fifty-seventh annual meeting. The success of his labours would be measured by the success of the meetings. He (Dr. Jones), as General Secretary, was personally indebted to Dr. Turnbull for having managed the meetings of their Congress and arranged the papers. He ventured to say that all that had been done reflected great credit upon Dr. Turnbull.

The vote was carried by acclamation.

PAPERS.

Dr. FINDLAY then gave a demonstration on the "Choroid Plexus," with photographic lantern slides. These are published in this number of the JOURNAL (see page 744).

Dr. ALDOUS CLINCH and Dr. GEDDES read a paper on "A Case of Chorea Gravis," published in this number of the JOURNAL (see page 811.)

Dr. ALDOUS CLINCH made a preliminary report on "A Case of Porencephaly," which, with relative photographs, will appear in a future number of the JOURNAL.

The PRESIDENT said that he was sure of having the entire support of the meeting in conveying their best thanks to those who had so kindly brought the results of their investigations before them. The papers read had been of outstanding excellence, and represented much honest work.

Dr. HAYES NEWINGTON spoke in support of the President's remarks, and congratulated him on the success of the meeting, which had been as well attended as any of recent years.

After a brief acknowledgment by the PRESIDENT, the meeting terminated.

EXCURSIONS.

TO LARBERT AND GARTLOCH ASYLUMS.

Not the least agreeable of the many pleasant arrangements made for the benefit of those members of the Association who were able to be present at the recent annual meeting in Edinburgh was the excursion to Larbert and Gartloch, where every opportunity was afforded for an inspection of the asylums under the superintendence of Drs. Macpherson and Oswald. Larbert may be looked upon as an example of an asylum brought up to date under judicious and experienced supervision, Gartloch as typical of all that is modern in asylum design and construction. In both institutions the wards for chronic patients call for no special comment,

save, perhaps, that a word of commendation may be permitted for the excellent taste displayed in the decoration and furnishing of the dayrooms and dormitories at Larbert. The administrative centre at Gartloch leaves little to be desired, while the wards and offices are admirably adapted for their various purposes. What, however, chiefly attracted the attention of the visitors was the well-equipped detached hospital blocks with which these asylums are provided, all the arrangements being of such a nature that a patient suffering from acute mental disorder has every chance of recovery afforded him, while the treatment of bodily ailments is quite up to the standard of the best of the large metropolitan general hospitals, with the added advantage of pure air and the most delightful surroundings. Much interest was manifested in the system of staffing these hospitals throughout with female nurses, and many practical difficulties connected with the details of management in this and other particulars were freely discussed and explained, so that the visit, from an educational point of view, could not fail to have been suggestive and instructive to every member present. But what can be said of the all too generous hospitality which awaited the visitors at both Asylums! Luncheon at Larbert came as a most agreeable rest by the way, and the votes of thanks to Major Dobbie and to Dr. Macpherson only very feebly conveyed the gratitude of the guests to their kind and most hospitable entertainers. At Gartloch, where tea was provided, the ex-President happily expressed the pleasure of all present at what they had seen, and especially thanked Mr. G. B. Waddell, a member of the Board of Management, who, with Dr. Oswald and his colleagues, had made the visit so great a success. The only drawback to the complete enjoyment of the day was the feeling that more time might usefully have been passed in the inspection of institutions which reflect so much credit not only upon all immediately concerned in their direction and management, but also in no small degree upon those members of our Association who have by their energy, persistence, and example educated public opinion to recognise the necessity for, and economical advantage of such admirably equipped hospitals for the mentally afflicted.

TO MELROSE.

A small party of ladies and members of the Association made a very pleasant excursion to Melrose and the "land of Scott." Under the guidance of Dr. Carlyle Johnstone they visited Abbotsford House, Melrose Abbey, and Dryburgh Abbey. Scott's romantic dwelling-place, with all its hallowed memories, his last quiet home amid the desired walls and ancient trees of Dryburgh, the windings of the classic Tweed, Bemersyde Hill and its glorious prospect, Melrose Abbey, most beautiful in its decay—all these, and the perfect day which illuminated them, will not soon be forgotten by that little company of Saxons, Scots, and Americans.

AFTERNOON EXCURSIONS.

On each afternoon of the meeting Mr. Marr, acting as deputy for Professor Patrick Geddes, unable to attend owing to indisposition, accompanied the members round old Edinburgh and the vicinity. Mr. Marr was heartily thanked for the courteous and interesting explanations he gave, and for his trouble in conducting the party to various places of interest. Dr. and Mrs. Clouston also kindly extended their hospitality towards the members of the Association.

THE ANNUAL DINNER.

The annual dinner was held in the Balmoral Hotel. There was a large company, the President in the chair, the croupiers being Dr. Jones, Claybury, and Dr. Turnbull, Fife. The company included the following:—Sir William Turner, Edinburgh; Sir Alexander Christison, Dr. Sibbald, Dr. P. A. Young, the Rev. A. Fleming, Professor Chiene, Mr. Joseph Bell, Sheriff Jameson, Q.C., Dr. Macdonald, New York, Mr. James Cadenhead, Dr. Norton Manning, &c. Apologies for inability to be present were received from Sir W. T. Gairdner, Sir Arthur Mitchell, Sir T. Grainger Stewart, Sir J. Batty Tuke, Sir J. Struthers, Dr. Fraser, Dr. Philip, Professor Geddes.

The CHAIRMAN, after the toast of "The Queen," gave the toast of "The Navy and the Army." Sir A. CHRISTISON replied.

Dr. SIBBALD proposed the toast of "The Learned Professions." He need not say so much about the clergy, because the medical profession was always glad to recognise the cordial way in which they were met by the Church. With regard to the law, the branch of the medical profession they were connected with very often criticised the legal view of insanity, and he believed that the members of the legal profession criticised the medical view. He was in the happy position of thinking that a great deal could be said in favour of the medical view, and that he thought the lawyers were very often wrong. If, however, there were not those differences of opinion, the lawyers, he believed, would be the first to complain.

The Rev. Mr. FLEMING, in reply, said he did not think that any of the learned professions could look with more constant interest upon that class of subjects with which the Medico-Psychological Society was concerned than the profession to which he had the honour to belong, and which was always standing, he might say from day to day, in constant contemplation of that mysterious borderland where mind and body seem to mingle. He thought it was one mark of the disappearance of narrowness and bigotry of mind that now they would no longer meet with the clerical bigot who would say that it was a heresy to suppose that mental trouble of any kind could be accounted for by partly physical causes, and he thought, on the other hand, the medical bigot had disappeared who would maintain that it was ridiculous and superstitious to imagine that no cause but a partly physical one could account for the painful phenomena which came under his notice. He thought more and more was due to the professions that they might be mutually helpful to each other.

Sheriff JAMESON, in reply for the law, spoke of the sense which lunatics had of right and wrong and the knowledge and fear of punishment, and said he had always great doubts about letting criminals off on the score of lunacy unless he was very clear about the matter. The protection of society, he always held, should be the first consideration in dealing with cases of lunacy.

Professor CHIENE, in reply, regretted that the surgeons had not been able to help psychologists as much as they wished. He knew there was no branch of the profession which could raise so much enthusiasm for humanity as the branch to which they belonged.

Dr. YELLOWEES proposed the health of Dr. Sibbald, and paid a tribute to his services on the Scottish Lunacy Board, from which he was about to retire. Dr. SIBBALD thanked them for the honour they had done him, and having stated the ideal which he had set before him when he was appointed commissioner, he said he felt a great hiatus lay between that ideal of the functions and his own performances. If by any ill-considered words or acts he had appeared to have been unkindly or really giving pain unnecessarily to any one he very deeply regretted it. He was very much obliged to them for all their kindness in the past.

Dr. A. E. MACDONALD gave the toast of the Association. Dr. URQUHART briefly replied.

Dr. McDOWALL proposed "Kindred Associations," and Dr. BELL replied in a happy manner.

Dr. SPENCE proposed the toast of "The Medical Institutions of Scotland," and Sir WILLIAM TURNER replied.

Dr. TURNBULL proposed the toast of "The Guests," to which Dr. YOUNG replied, and the company thereafter separated with the expression, "Floreat res medica."

RECENT MEDICO-LEGAL CASES.

REPORTED BY DR. MERCIER.

[The Editors request that members will oblige by sending full newspaper reports of all cases of interest as published by the local press at the time of the assizes.]

Crichton and Another v. Ferguson and Others.

A complicated probate case, in which the will was opposed on the usual grounds. The judge charged the jury that they had not to try the question whether the testatrix was sane or insane; they had to consider the will, and to say whether the testatrix had mind enough to understand it, and whether she did understand it. They must not break the will unless they thought either that she had not sufficiency of mind to make it, or that she was weak and was led into making it by other people. It will be seen that the terms of the charge are much narrower than is customary in the English courts. Nothing is said as to the capacity of the testatrix to appreciate the several claims upon her bounty of those whom she excluded and those whom she included among the beneficiaries under her will. All that is left to the jury is whether she "understood" the will. The jury found for the pursuers and against the will.—Court of Sessions (the Lord President).—*Scotsman*, July 23rd, 1898.

Bristol Royal Infirmary v. Arlett.

The testator was a man admittedly of great eccentricity, but exceedingly shrewd and competent in business matters. In June, 1887, he went to live with his sister, and in the following September instructed his solicitor to make a will in her favour. In May of the following year there was some "tremendous disturbance" in the home, which ended in the testator being taken to the police station and charged with attempting to murder his nephew. Shortly afterwards he instructed his solicitor that he wished to leave all his property to the plaintiffs. In May, 1891, he executed, despite the opposition of his solicitor, a will in this sense, and took the precaution of depositing the will at Somerset House for safe custody. He died in May, 1897. The jury found against the will.—Probate Division, May 18th, 1898.—*Times*, May 19th.

Reed and Another v. The Solicitor to the Treasury and Others.

Probate case involving the validity of the will of a person who admittedly suffered from delusions at the time of execution of the will. The solicitor who took instructions for the will had been informed of the condition of testatrix, and tested her sanity as well as he could. The judge charged that it was quite clear that in this case the delusions had in no way affected the making of the dispositions in the will, which, moreover, seemed a most sensible and reasonable will, and which he pronounced for.—Probate Division (the Right Hon. the President).—*Times*, July 14th, 1898.

The solicitor who took instructions for the will knew that the testatrix suffered from delusions, and tested her sanity as well as he could. It does not appear—and the omission strikes us as lacking in reasonable precaution—that any expert in lunacy was employed to ascertain the disposing power of the testatrix. Fortunately, if strangely, no ill result followed.

Barker v. Barker and Dearsley.

The testator had lived with his wife "in perfect peace and amity" for thirty-two years until 1894. In 1870, 1878, and 1894 he executed wills entirely in her favour. In 1893 he had a fall, and his mind became affected, so that he had to be detained in Wandsworth Asylum. In November, 1894, he was released at his wife's request, and thereafter his mind was greatly affected. He talked about "conspiracies" and of having his revenge, and complained that his wife and other people were whispering about him; became addicted to the use of foul and disgusting language towards his wife, and had various delusions that he was wanted by the police, &c. In June, 1896, he made another will, under which his wife took only a life interest.

The judge told the jury that a testator must have a proper appreciation of the property that he possessed, and of the claims of those whom he ought to remember. With regard to delusions, to be material they must be such as would affect the

making of the will. The jury found for the will.—Probate Division, April 25th, &c., 1898 (Mr. Justice Barnes).—*Times*, April 28th.

Another illustration of the tenacity with which juries will cling to a will. Hostility to his wife was a prominent element in the testator's delusions. The effect of the will was to prejudice the wife's interests. Yet the jury upheld the will.

Donald Ross v. William Ross's Trustees and Others.

A probate case. The pursuer, D. Ross, sought reduction of the will of his brother, W. Ross, on the grounds that the testator was of unsound mind and incapable of managing his affairs, and that the will was impetrated from him when he was weak and facile by the defenders. The evidence was of the usual contradictory character, and the judge summed up strongly for the will; but the jury, notwithstanding, found a verdict upsetting the will, but exonerating the defenders.—Court of Session (the Lord President), March 14th and 15th, 1898.—*Scotsman*, March 15th and 16th.

This case shows that it is very much easier to upset a will in Scotland than in England. In England the "pursuer" would have been very ill advised to bring an action, and would certainly have lost it.

Spence v. Spence.

This was a probate action, the will being disputed on the usual grounds. It was proved that the testator was a habitual drunkard, that he was "always soaking," "almost always delirious," and had been repeatedly under treatment for delirium tremens. By his will he left the whole of his property to his wife, to whom he had been married a few months, and whom, it was said, he had known only for a month before marriage. The jury found for the will.—Manchester Assizes, March 1st, 1898.—*Manchester Guardian*, March 2nd.

Browning v. Green.

Plaintiff was a nurse, and in that capacity had the care of defendant, a dangerous lunatic. Defendant, in an outbreak of violence, struck the plaintiff a blow in the eye, whereby the sight was permanently destroyed. For the defence the facts were admitted, but it was pleaded that defendant, a lunatic, was not liable for an assault. The jury found for the plaintiff, with £78 damages; and upon an intimation from the judge that he hoped nothing more would be heard of the point of law, the defence was abandoned.—Birmingham Assizes (the Lord Chief Justice), March 24th, 1898.—*Times*, March 25th.

Re Charles Clarke.

This was an important appeal, involving the rights of a judgment creditor as against a receiver subsequently appointed under Section 116 of the Lunacy Act, 1890. The case, however, is of no medical interest.—*Times*, March 8th, 1898.

In re the Earl of Sefton.

This case in the Court of Appeal decided an important point with respect to dealing with the property of a lunatic, but is of no medical interest.—*Times*, June 15th, 1898.

In re Lamond.

An inquiry into the state of mind of Miss Cordelia Warde Lamond. It was proved that the lady had employed eleven detectives and thirteen solicitors in connection with her affairs. She had brought two actions against the Hôtel Métropole, two against Sir George Lewis, one against the Hôtel Cecil, five against officers of the Irish Rifles, and one against a naval officer. Most of these actions were for slander, and all had failed. In her bankruptcy there were thirty claims against her estate—seventeen by solicitors and five by detectives. The jury found that she was incapable of managing her affairs, but capable of managing herself, and was not dangerous to herself or others.—Before Mr. J. Fiskier, Q.C.—*Times*, June 22nd, 1898.

Thus by the sapience of a jury a person with delusions of persecution is let loose upon the public.

Harward v. The Guardians of the Hackney Union and Frost.

Plaintiff was taken by Frost, a relieving officer, to the workhouse infirmary as a lunatic. A magistrate who saw him there discharged him as sane. Action for false imprisonment.

The wife of the plaintiff applied to the relieving officer for the removal of her husband as a lunatic, saying that he had threatened to commit suicide and to kill her and his children. Upon this application the defendant Frost directed the removal of plaintiff to the workhouse infirmary, which was accordingly done. Subsequently plaintiff was seen at the infirmary by a justice, who found him sane, and he was discharged. Frost deposed that he honestly believed that it was for the public safety or for the welfare of the plaintiff and others that the plaintiff should be brought to the infirmary and placed under care and control, and that he was actuated by no other motive except that of doing his duty.

The man who removed plaintiff on defendant's instructions was asked by the judge if he saw anything to lead him to think that the plaintiff was a lunatic.

"I cannot say that there was; but I am no judge of that matter. I never thought about it, but simply obeyed my orders."

Dr. J. J. Gordon, one of the medical officers to the infirmary, said that he saw the plaintiff on admission. Plaintiff was then very excited, considered himself persecuted by his wife and some other relatives, and that he was the victim of a conspiracy.

The judge directed the jury that if they thought that Frost had honestly satisfied himself that the plaintiff was a lunatic and should be placed under restraint, then the defendants would be entitled to their verdict. In any case, there was no case against the guardians.

The jury found for the plaintiff, damages £25, on the ground that Frost did not exercise reasonable care to satisfy himself that plaintiff was of unsound mind and dangerous to be at large before arresting him.—Queen's Bench Division (Mr. Justice Hawkins), Jan. 19th and 20th. 1898.—*Times*, Jan. 21st.

On appeal the verdict was set aside, March 22nd.

Reg. v. Irving.

Ellen Irving was indicted under Section 315 of the Lunacy Act, 1890, for taking charge of a lunatic for payment in an unlicensed house. There were other counts in the indictment charging that the person mentioned was an alleged lunatic, "was received to board and lodge," and had been "detained." It appeared that in February, 1897, Miss Irving, who kept a convalescent home at Clacton-on-Sea, received a telegram asking her to receive a lady patient. The following day she received a letter from the patient herself asking for a cheerful room. The patient came alone by train, and at this time there was no suspicion that she was of unsound mind. In about ten days' time, however, she became very troublesome and violent. Her friends were communicated with, and in March the patient was removed. The defendant pleaded guilty, but it appeared that she was ignorant of the provisions of the statute.

For the prosecution it was stated that the Commissioners in Lunacy had no wish to press the matter. Their only object was to make it widely known that the reception of a lunatic under the circumstances was illegal.

The judge emphasised the importance of diffusing this knowledge, at the same time stating that the prosecution did not in the smallest degree reflect upon the defendant, whom he bound over to come up for judgment if called upon.—Chelmsford Assizes (Mr. Justice Hawkins), July 1st, 1898.—*Times*, July 6th.

It is satisfactory to find that even in one case, and that a very unimportant one, the Commissioners have been able to prosecute and to secure a conviction under Section 315 of the Lunacy Act, 1890. It is notorious that this enactment is being

daily violated in hundreds of instances throughout the country, but the difficulties of obtaining evidence are great, and the difficulties of obtaining a conviction are much greater. The British public, with its usual logical acumen, looks with approval upon the detention of lunatics in unlicensed houses, where they are under no sort of supervision, and are in charge of ignorant lodging-house keepers, and regards jealously their detention in institutions for lunatics that are legally so constituted, and in which the welfare of the patients is secured by a myriad of minute and stringent regulations.

Reg. v. Weaver.

Charles Weaver, 39, butcher, was indicted for the murder of Annie Brownell. On indictment counsel for the prosecution asked his lordship whether, in view of the report of Dr. Law Wade, a jury should not be empanelled to say whether the prisoner was fit to plead. This was accordingly directed, and Dr. Wade proved that prisoner was suffering from various delusions.

The Judge: Do you think he is capable of understanding the proceedings taking place with regard to him at the present time?—Not fully so as to conduct his defence. Is he able to understand, as a reasonable and intelligent man would, the nature of the proceedings he is called upon to plead, and to give such instructions as are necessary for his defence?—I don't believe he is. The Judge instructed the jury to say whether the prisoner was at that moment in a condition to understand the character of the proceedings and reasonably to instruct counsel for his defence. The jury found that he was not, and the trial did not proceed.—*Somerset Assizes*, June 9th, 1898 (the Lord Chief Justice).—*Western Gazette*, June 10th, 1898.

The report shows the character of the questions that a witness must be prepared to answer when the ability to plead to the indictment is the issue tried. The case is of interest from the peculiarly brutal character of the murder committed by a lunatic who had been known for months to be suffering from delusions of persecution, but who had never been considered dangerous, and had been allowed to be at large and to pursue his calling of butcher. It is another illustration of the duty that lies upon medical men who are cognisant of insanity to spread the knowledge that a person suffering from delusions of persecution is always a potential homicide.

Reg. v. English.

Archibald English, 43, cook, was indicted for shooting at Henry Pearce, with intent, &c. Dr. Scott, medical officer of Holloway, said that in his opinion the condition of the prisoner's mind at the time was not such as would enable him to distinguish between right and wrong, and that he would be incapable of appreciating that he was doing wrong. "Guilty, but insane."

Dr. Scott said that the prisoner was no longer insane. The judge said that he was bound by statute to make an order for the prisoner to be detained during Her Majesty's pleasure, but his friends could present a petition to the Home Secretary for his discharge.—*Central Criminal Court* (Mr. Justice Hawkins).—*Times*, December 16th, 1897.

An unusual instance of the recovery of a prisoner between committal and trial, illustrative of procedure.

Reg. v. Murphy.

Francis Rowland Murphy, 33, labourer, was indicted for the murder of his two daughters, attempting to strangle his infant son, and wounding Gertrude Heaster, the woman with whom he lived. It was proved that the couple lived happily together, that the prisoner was an affectionate father, that several of his relatives were in asylums, that he had had a severe blow on the head necessitating an operation and the removal of part of the skull, and that he had suffered in America from sun-stroke. At the time of the murder he was suffering from influenza and bronchitis, and after a very restless night passed in choking and coughing, he said to the

woman, "I have got pneumonia. If I have I shall die, and if I am going to die you must die with me." Shortly afterwards he committed the acts for which he was indicted.

Dr. Annger said that when the prisoner was admitted into the Royal Infirmary (apparently on June 10th, immediately after the crime) he was in a dazed condition, and did not realise where he was or anything that had happened. In this condition he remained for the next twenty-four hours.

Dr. Price, of Walton Gaol, said that prisoner had been under his observation since June 20th. During that time he had been perfectly sane, but confessed to an utter want of knowledge as to what had passed during the period from 10 p.m. on June 9th to 8.30 on Sunday the 12th.

Dr. Wigglesworth had visited prisoner on July 23rd, and found that he was quite sane. Witness considered that prisoner was not capable at the time of the tragedy of understanding the nature and quality of the act he had committed.

His Lordship told the jury that the prisoner appeared to have been for a time not a human being at all. No conduct such as was ordinarily associated with humanity offered a parallel to what occurred on June 10th. It appeared that from the time he awoke on that morning until he came to consciousness again he acted like a wild beast rather than a man, and as if he was not in possession of his faculties. If the jury considered that this was so, it was their duty to find that the prisoner was not responsible for his actions. Guilty, but insane.—*Liverpool Assizes*, August 1st, 1898 (Mr. Justice Ridley).—*Liverpool Daily Post*, August 2nd.

A good instance of the complete freedom which a large-minded judge assumes when the facts are strongly in favour of the insanity of the accused. It does not appear from the report that the judge considered himself bound in any way to refer to the rule of law. He allowed a wide latitude to the medical witnesses, and charged the jury in terms which left that rule on one side.

Reg. v. Norris.

Prisoner, a solicitor *æt.* 35, had lived happily with his wife for nine years. On the early morning of February 13th he shot her with a revolver while she was asleep in bed. He then cut his throat in four places. Indicted for shooting with intent, &c. It was proved that prisoner had always been on affectionate terms with his wife, and that they had never had a quarrel; that he had been much overworked for a long time, that he had complained lately of sleeping badly, of bad dreams, and that "he could not distinguish between his dreams and his thoughts when awake." He had always been a strict teetotaler.

The judge told the jury that there was only one verdict that they ought to find, and that was that owing to overwork and not having sufficient change the defendant's mind became uninged, and that he did what he did in a fit of temporary insanity, and did not know what he was doing, and that he was not responsible for his actions at the time. It was only a passing fit of brain exhaustion, and he hoped that with change the defendant would soon recover, and that he would go back to his business as good a man as ever. "Guilty, but insane,"—*Central Criminal Court*, March 11th, 1898 (Mr. Justice Grantham).—*Times*, March 12th.

Another instance of the freedom assumed by a judge who forms a strong opinion on the depositions.

Reg. v. Woolford.

The prisoner, *æt.* 29, of no occupation, was seen kneeling outside the church door at Heckfield, dressed in a torn shirt only, and praying aloud. Some neighbours saw him and tried to induce him to come home; but he became very excited and violent, and seizing a ladder, tried to batter down the church door. He fought and shouted, got away, ran along the Reading road, assaulting a bicyclist in his way, ran on to a farmhouse, jumped the hedge, and seeing a child in the garden, knocked her down and knelt on her, beating her about the head and face with his fists, and so injured her that her life was for some time in danger. It was proved that the prisoner was subject to epileptic fits, and the medical evidence was that he

was not responsible when suffering from the fits, and was not safe to be at large. Guilty, but insane.—Winchester Assizes (the Lord Chief Justice), June 28th.—*Times*, June 30th.

One of the numerous instances of crime committed by a man who ought not to have been at large.

ASYLUM NEWS.

THE NEW EDINBURGH ASYLUM.—Competitive plans for the asylum to be erected by the Edinburgh District Lunacy Board were exhibited to the public during the week of the British Medical Association meeting. We have already indicated that the system of construction developed at Alt Scherbitz was adopted, and the architects who sent in plans have worked in strict accordance with instructions. Mr. Hippolyte J. Blanc has been successful in securing the first place in order of merit, and his designs are to be adopted with certain modifications in detail. We hope to give a full account of the completed plans at no distant date.

QUEBEC MEDICO-PSYCHOLOGICAL SOCIETY.

The physicians attached to the asylum of the province of Quebec have organised themselves into an Association for the advancement of the specialty. Dr. Vallée has been appointed president, Dr. Burgin vice-president, and Dr. Chagnon secretary. The first meeting of the society was held at the St. Jean de Dieu Asylum on July 14th, 1898, and we have been favoured with an account of the proceedings, which will find place in our next issue.

CORRESPONDENCE.

FROM DR. PERCY SMITH.

In the July Number of the *JOURNAL* I notice on page 653 a statement reported as made by the Chairman of the meeting of the Northern and Midland Division, held at Cheadle on May 25th, to the effect that "every hospital had pensioned its superintendent on retirement." I think it is right to correct this statement and say that no superintendent of Bethlem Hospital has ever received a pension. This has, however, not been the fault of the governing body, but owing to the fact that the superintendents have gone into other spheres of work, with the exception of Dr. Helps, who died while still superintendent.

OBITUARY.

HENRY CASE, M.R.C.S.

We record, with regret, the death of Mr. Henry Case, at Folkestone, on the 15th of June. He had but recently retired from the office of medical superintendent of the Leavesden Asylum, which he had held since 1876. Born in 1843, and medically educated at the Middlesex Hospital, at which he held with credit the post of house surgeon, he became subsequently house surgeon to the West Herts Infirmary and to the Hampstead Smallpox Hospital, and assistant medical officer to the Leavesden Asylum, of which, on Dr. Claye Shaw's removal to Banstead, he was entrusted with the chief charge.

For upwards of twenty-one years he held this important appointment, and discharged with zeal and efficiency its onerous duties, maintaining throughout the best relations both with his colleagues and patients, and, despite the number of the latter, having an intimate knowledge of their cases, and himself directing their medical treatment. For some years, and until increasing work compelled his relinquishment of the office, he was also lecturer on psychological medicine at the Middlesex Hospital.

In January of the present year ill-health necessitated his retirement from Leavesden, and his colleagues and the staff generally marked this event by a handsome presentation of plate. The committee, to whom he had rendered service for so large a portion of his life, voted him the insignificant pension of £250 a year, and added yet another proof of the need which exists in the service of our speciality for a fixed and liberal scale of statutory pensions which shall be assured as the complement of long and faithful service.

R. BATTERSBY SCHOLES, M.D.

Dr. Scholes, whose death is recently recorded, was an Australian by birth, but studied in Edinburgh, where he took the degrees of M.B. and C.M. in 1874. He returned to Australia, and at once entered the service of the Government of New South Wales as assistant medical officer of the Hospital for the Insane at Paramatta, from which he was soon promoted to the superintendentship of Callan Park. In 1878, on the nomination of Dr. Manning, he was appointed superintendent of Goodna, near Brisbane, Queensland, and later on became Inspector of the Asylums at Ipawich and Towoomba, and at the Reception Houses at Rockhampton, Townsville, and elsewhere, which Dr. Scholes himself established on the same basis as those in New South Wales.

Dr. Scholes soon placed the Lunacy Department of Queensland on a proper footing, and under his advice and with his assistance the new Lunacy Act was drafted and submitted to Parliament. By his genial manners and his kindness of heart he won the love and respect of the patients and staff, and by his administrative ability the confidence of all classes of the community. For twenty years under his guidance the Lunacy Department of Queensland has worked without internal friction and without trouble to the Government, and at the same time with ever-increasing efficiency. As medical superintendent, an altogether unique experience befell Dr. Scholes. During the floods (previously unequalled) which some seven or eight years ago wrecked the city of Brisbane, destroyed its bridges, devastated its beautiful botanic gardens, and ruined thousands of the colonists, Dr. Scholes found himself with upwards of 300 male patients in all stages of their malady surrounded by water and in imminent danger. As the water rapidly rose it was found necessary to vacate all the lower floors, and before nightfall it was ascertained that the buildings were in danger and were indeed in parts crumbling away. By means of a boat, guided by ropes made of torn bedding, it became necessary to remove all the patients through the windows of the upper stories. Such as resisted or were maniacal or suicidal were rolled in blankets and placed like mummies under the thwarts of the boat, and by morning Dr. Scholes had the satisfaction of finding all his patients, with one solitary exception, and all his attendants in safety in the wards set apart for women, which stood on higher ground. Dr. Scholes himself crossed the flood in the last trip made by the boat, and then had to house his homeless flock in buildings already overcrowded with female patients. These buildings, though on high ground, were surrounded by water, but to them were attached kitchens, bakeries, and stores, from which the whole Asylum population were supplied until the flood subsided and communication with the outside world was again possible. The Government of Queensland has since that time taken steps to remove the low-lying buildings, but before this could be completed Dr. Scholes, on two subsequent occasions, found it necessary to make every preparation for the timely removal of the whole of the male patients. To the incessant work incidental to his position, to the special anxieties attending the danger due to floods, and to the worry involved in the re-organisation of the Asylum, may no doubt be attributed Dr. Scholes' early and unexpected death, which took place from heart disease on July 8th.

The great flood left behind it much misery and destitution in the village of Goodna, where many of the staff of the Asylum resided. This Dr. Scholes did his best to meet, not only by active sympathy, but by such munificent donations from his private means as has left an abiding sense of gratitude and respect. By Dr. Scholes' death the Government of Queensland has lost one of the most trusted, able,

and talented of its public servants, and the insane of the colony their truest and best friend. Dr. Scholes leaves a wife and family.

AUGUSTE VOISIN.

The death of Dr. Auguste Voisin has been announced. He was physician to the Salpêtrière, and was best known by his writings on idiocy, hysteria, hypnotism, and allied subjects. Dr. Voisin was nephew to Dr. Félix Voisin, formerly physician to the Bicêtre, and early in life devoted himself to the study of mental diseases. In 1879 he won an appointment to the Bicêtre, which he held until 1884, when he was transferred to the Salpêtrière as physician to the department of backward children and epileptics. Dr. Voisin's paper at the Bournemouth meeting of the British Medical Association (1891) directed special attention to his opinions on the relation of hypnotism to crime, for he held that his experiments had indubitably proved that persons in the hypnotic condition might be caused to commit crime unconscious of the act. Dr. Voisin's treatment of insane persons by hypnotism did not command the approval of independent observers, and was not pursued by his colleagues.

NOTICES BY THE REGISTRAR.

The following gentlemen were successful at the examination for the Certificate in Psychological Medicine, held on July 7th, 1898 :

Examined at *Bethlem Hospital, London*.—Herbert Barraclough, Frank Herbert A. Clayton, William Cotton.

Examined at the *Royal Asylum, Morningside, Edinburgh*.—James Masson, James Orr, William James Stuart, David Barty King.

The following is a list of questions which appeared on the paper :

1. What indications with regard to a person's sanity or insanity may be obtained from observation of his or her dress? 2. To what points would you specially direct your attention with a view to ascertaining the testamentary capacity of a patient? Can a patient in an asylum make a valid will? 3. What are the principal symptoms which distinguish a case of acute dementia or energic stupor from one of melancholia attonita? 4. In what forms do climacteric insanity appear? Give the prognosis of each. 5. Describe the different kinds of mental disturbance that occur in epileptic insanity. State shortly the connection between epilepsy and crime. 6. Compare the various forms of auditory hallucination with the various forms of deafness of cerebral origin. Describe psycho-motor hallucinations.

The Bronze Medal has been awarded to John Robert Lord, M.B., C.M., Assistant Medical Officer, London County Asylum, Hanwell.

The next examination for the Certificate in Psychological Medicine will be held in December, 1898. Due notice of the date will appear in this JOURNAL and in the medical papers.

Examination for the Nursing Certificate.—The next examination for the Certificate of Proficiency in Nursing will be held on Monday, November 7th, 1898, and candidates are earnestly requested to send in their schedules, duly filled up, to the Registrar of the Association not later than Monday, October 3rd, 1898, as that will be the last day upon which, under the rules, applications for examination can be received.

NOTE.

As the names of some of the persons to whom the Nursing Certificate has been granted by the Association have been removed from the Register, employers are requested to refer to the Registrar in order to ascertain if a particular name is still on the roll of the Association. In all inquiries the number of the Certificate should be given.

For further particulars respecting the various examinations of the Association, apply to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield.

NOTICES OF MEETINGS.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

South-Eastern Division.—At Springfield House, Bedford, on Monday, October 10th.

Northern and Midland Division.—At Derby County Asylum on Wednesday, October 12th.

South-Western Division.—At the Grand Pump Room Hotel, Bath, on Tuesday, October 18th. *Agenda*.—(1) Adjourned discussion on Dr. Blachford's paper read at last meeting. (2) Paper by Dr. H. Bristowe, "Lunacy in Private Practice." (3) Paper by Dr. Weatherly, "Lunacy and the Public."

Scottish Division.—At Edinburgh on the second Thursday of November.

General Meeting.—At London on October 13th.

APPOINTMENTS.

C. Hubert Bond, D.Sc., M.D.Edin., appointed Senior Assistant Medical Officer to the new asylum for the county of London, Bexley, Kent.

Maurice Craig, M.A., M.D., M.R.C.P., appointed Senior Assistant Physician to Bethlem Royal Hospital.

Theo. B. Hyslop, M.D., C.M., M.R.C.P.Edin., appointed Resident Physician to Bethlem Royal Hospital, *vice* R. Percy Smith, M.D., F.R.C.P., resigned.

T. E. K. Stansfield, M.B., C.M.Edin., appointed Medical Superintendent to the new London County Asylum, Kent.

OMISSIONS.

We regret to omit "Report of British Medical Association Meeting," "Parliamentary News" and other matters of importance owing to the pressure on the space in this number of the JOURNAL.

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1862. Clouston, T. S., M.D.Edin., F.R.C.P.Edin., F.R.S.E., Physician Superintendent, Royal Asylum, Morningside, Edinburgh. (*Editor of Journal, 1873-1881.*) (PRESIDENT, 1888.)

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1897. Kesteven, William Henry, M.R.C.S.Eng., L.S.A.Lond., Hillwood, Waverley Grove, Hendon.
1897. Kidd, Harold Andrew, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, West Sussex Asylum, Chichester.
1897. Kingdon, Wilfred Robert, M.B., B.S.Durh., Resident Medical Officer, Ticehurst House, Sussex.
1898. Labey, Julius, M.R.C.S., Medical Superintendent, Public Lunatic Asylum, The Homestead, Gronville, Jersey.
1896. Langdon-Down, Reginald L., M.B., B.C.Cantab., M.R.C.P.Lond., Normansfield, Hampton Wick.
1896. Laslett, Maurice H., L.R.C.P., H.M.Dockyard, Chatham.
- Lavers, Norman, M.R.C.S., Camberwell House Asylum, London, S.E.
1892. Lawless, Dr. George Robert, A.M.O., District Asylum, Armagh.
1870. Lawrence, A., M.D., County Asylum, Chester.
1883. Layton, Henry A., L.R.C.P. Edin., Cornwall County Asylum, Bodmin.
1883. Legge, R. J., M.D., Medical Superintendent, County Asylum, Derby.
1894. Lentagne, John, B.A., F.R.C.S.I., Medical Visitor of Lunatics to the Court of Chancery, 29, Westland Row, Dublin.
1858. Lewis, Henry, M.D.Brux., M.R.C.S.Eng., L.S.A., late Assistant Medical Officer, County Asylum, Chester; West Terrace, Folkestone, Kent.
1879. Lewis, William Bevan, Physician and Medical Director, West Riding Asylum, Wakefield.
1863. Ley, H. Rooke, M.R.C.S.Eng., Medical Superintendent, County Asylum, Prestwich, near Manchester.
1859. Lindsay, James Murray, M.D.St. And., F.R.C.S. and F.R.C.P. Edin., Brookside, Corston, Bristol. (*PRESIDENT, 1893.*)
1883. Lisle, S. Ernest de, L.R.C.P.I., Three Counties Asylum, Stotfold, Baldock.
1898. Lord, John R., M.B., C.M., London County Asylum, Hanwell, W.
1872. Lyle, Thomas, M.D.Glasg., 34, Jesmond Road, Newcastle-on-Tyne.
1880. MacBryan, Henry C., Kingsdown House, Box.
1897. McCutchan, William Arthur, L.R.C.P.S. Edin., Assistant Medical Officer, County and City Asylum, Hereford.
1884. Macdonald, P. W., M.D., C.M., Medical Superintendent, County Asylum, near Dorchester, Dorset. (*Hon. Sec. S.W. Division.*)
1893. Macevoy, Henry John, M.D., B.Sc.Lond., M.P.C., 41, Buckley Road, Brondebury, London, N.W.
1895. Macfarlane, Neil M., M.D.Aberd., Medical Superintendent, Government Hospital, Thlotse Heights, Leribe, Basutoland, South Africa.

1883. Macfarlane, W. H., M.B. and Ch.B.Univ. of Melbourne, Medical Superintendent, Hospital for the Insane, New Norfolk, Tasmania.
1891. Mackenzie, Henry J., M.B., C.M.Edin., M.P.C., Assistant Medical Officer, The Retreat, York.
1886. Mackenzie, J. Cumming, M.B., C.M., M.P.C., late Medical Superintendent, District Asylum, Inverness; care of Mr. Mackenzie, Enzie Station, Buckie, N.B.
- * Mackintosh, Donald, M.D.Dur. and Glasg., L.F.P.S.Glasg., 10, Lancaster Road, Belsize Park, N.W.
1896. Maclaren, J., M.B., C.M.Edin., Assistant Medical Officer, Spring Villa, Oughtybridge, Sheffield.
1886. Maclean, Allan, L.R.C.S.Edin., 10, Mitre Court Chambers, Temple, E.C.
1873. Macleod, M. D., M.B., Medical Superintendent, East Riding Asylum, Beverley, Yorks.
1898. Macnaughton, George W. F., M.D., Warwick Lodge, 436, Fulham Road, London, S.W.
1882. Macphail, Dr. S. Rutherford, Derby Borough Asylum, Rowditch, Derby.
1896. Macpherson, Dr. Charles, Deputy Commissioner in Lunacy, 51, Queen Street, Edinburgh.
1895. Madge, Arthur E., M.R.C.S.Eng., L.R.C.P.Lond., Priestwood, Bracknell, Berks.
1896. Maguire, Charles Evan, M.B., C.M., Assistant Colonial Surgeon, Lagos, West Africa.
1896. Mallanah, S., M.B.Edin., Medical School, Hyderabad, Deccan, India.
1865. Manning, Harry, B.A.Lond., M.R.C.S., Laverstock House, Salisbury.
1896. Marr, Hamilton C., M.D.Glasg. Univ., Senior Assistant Physician, Woodilee Asylum, Lenzie.
1897. Marshall, John, M.B., C.M.Glasg., Assistant Medical Officer, County Asylum, Bridgend, Glamorgan.
1896. Martin, James Clarke, L.R.C.S.I., L.M., L.R.C.P., Assistant Medical Officer, District Asylum, Letterkenny.
1897. Mathieson, M.B., C.M.Glasg., Senior Assistant Medical Officer, County Asylum, Stafford.
1888. McAlister, William, M.B., C.M., Struan Villas, Kilmarnock.
1894. McClaghry, Thomas, L.R.C.S.I. and L.A.H. Dubl., Assistant Medical Officer, District Asylum, Maryborough, Ireland.
1886. McCreery, James Vernon, L.R.C.S.I., Medical Superintendent, New Lunatic Asylum, Melbourne, Australia.
1870. McDowall, T. W., M.D.Edin., L.R.C.S.E., Medical Superintendent, Northumberland County Asylum, Morpeth. (EX-PRESIDENT.)
1876. McDowall, John Greig, M.B.Edin., Medical Superintendent, West Riding Asylum, Menston, near Leeds.
1882. McNaughton, John, M.D., Medical Superintendent, Criminal Lunatic Asylum, Perth.
1894. McWilliam, Alexander, M.B., C.M.Aberd., Medical Superintendent, Heigham Hall, Norwich.
1886. Macpherson, John, M.B., M.P.C., Medical Superintendent, Stirling Asylum, Larbert.
1890. Menzies, W. F., M.D., B.Sc.Edin., Senior Assistant Medical Officer, County Asylum, Rainhill.
1891. Mercier, Charles A., M.B.Lond., F.R.C.S.Eng., Lecturer on Insanity, Westminster Hospital; Flower House, Catford, S.E.
1877. Merson, John, M.D.Aberd., Medical Superintendent, Borough Asylum, Hull.
1871. Mickle, William Julius, M.D., F.R.C.P.Lond., Medical Superintendent, Grove Hall Asylum, Bow, London. (PRESIDENT, 1896.)

1867. Mickley, George, M.A., M.B.Cantab., Medical Superintendent, St. Luke's Hospital, Old Street, London, E.C.
1893. Middlemass, James, M.B., C.M., B.Sc.Edin., Borough Asylum, Ryhope, Sunderland.
1898. Middlemist, George Edwyn, M.B., Assistant Medical Officer, County Asylum, Dorchester.
1883. Miles, George E., M.R.C.P., &c., Medical Superintendent, Hospital for the Insane (Idiots), Newcastle, N.S.W.
1897. Millard, Reginald J., M.B., Ch.M., Sydney, Assistant Medical Officer, Callan Park, Sydney, N.S.W.
1893. Mills, John, M.B., B.Ch., and Diploma in Mental Diseases, Royal University of Ireland, Assistant Medical Officer, District Asylum, Ballinasloe.
1887. Miller, Alfred, M.B. and B.C.Dubl., Medical Superintendent, Hatton Asylum, Warwick.
1881. Mitchell, R. B., M.D., Medical Supt., Midlothian District Asylum.
1895. Moffett, Elizabeth Jane, M.B., B.Sc.Lond., New Hospital for Women, 144, Euston Road, London, N.W.
1885. Molony, John, F.R.C.P.I., Med. Supt., St. Patrick's Hospital, Dublin.
1897. Montgomery, Sydney Hamilton Rowan, M.B., B.Ch., B.A.O.Royal University, Ireland, Assistant Medical Officer, Borough Asylum, Nottingham.
1878. Moody, James M., M.R.C.S.Eng., L.R.C.P. and L.M.Edin., Medical Superintendent, County Asylum, Cane Hill, Surrey.
1885. Moore, E. E., M.B.Dubl., M.P.C., Medical Superintendent, District Asylum, Letterkenny, Ireland.
1891. Moore, George, J.P., M.D., M.R.C.S., Queen's Farm, St. Saviour's, Jersey.
1897. Mornement, Robert Harry, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, London County Asylum, Cane Hill, Purley, Surrey.
1892. Morrison, Cuthbert S., L.R.C.P. and L.R.C.S.Edin., Medical Superintendent, County and City Asylum, Burghill, Hereford.
1896. Morton, W. B., M.B., Assistant Medical Officer, Brislington House, Bristol.
1896. Mott, F. W., M.D., B.S., F.R.C.P.Lond., F.R.S., 25, Nottingham Place, W.; Pathologist, London County Asylum; Assistant Physician, Charing Cross Hospital.
1896. Mould, G. E., M.R.C.S., L.R.C.P.Lond., Medical Superintendent, Northumberland House, Finsbury Park, London, N.
1862. Mould, George W., M.R.C.S.Eng., Medical Superintendent, Royal Lunatic Hospital, Cheadle, Manchester. (PRESIDENT, 1880.)
1897. Mould, Philip G., M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Royal Lunatic Hospital, Cheadle, Manchester.
1878. Muirhead, Claud, M.D., F.R.C.P.Edin., 30, Charlotte Square, Edinburgh.
1897. Mumby, Bonner Harris, M.D.Aberd., D.P.H.Cantab., Medical Superintendent, Borough Asylum, Portsmouth.
1893. Murdoch, James William Aitken, M.B., C.M.Glasg., Medical Superintendent, Berks County Asylum, Wallingford.
1878. Murray, Henry G., L.R.C.P.Irel., L.M., L.R.C.S.I., Assistant Medical Officer, Prestwich Asylum, Manchester.
1891. Musgrove, C. D., Dr., 8, Herbert Terrace, Penarth, S. Wales.
1890. Nash, Vincent, L.R.C.P.I., formerly Assistant Medical Officer, Richmond District Asylum, Dublin; George's Street, Limerick.
1880. Neil, James, M.D., M.P.C., Assistant Medical Officer, Warneford Asylum, Oxford.

1875. Newington, Alexander, M.B.Camb., M.R.C.S.Eng., Woodlands, Ticehurst.
1873. Newington, H. Hayes, M.R.C.P.Edin., M.R.C.S.Eng., Ticehurst, Sussex. (PRESIDENT, 1889.) (*Treasurer.*)
1893. Newington, John, L.S.A., Tattlebury House, Goudhurst, Kent.
1881. Newth, A. H., M.D., Haywards Heath, Sussex.
1869. Nicolson, David, M.D. and C.M.Aberd., late Medical Officer, H.M. Convict Prison, Portsmouth, and State Asylum, Broadmoor; Lord Chancellor's Visitor, Elmhurst, Guildford. (PRESIDENT, 1895.)
1895. Nicolson, Robert Henderson, M.B., C.M.Aberd., Senior Assistant Medical Officer, County Asylum, Hatton, Warwick.
1893. Nobbs, Athelstane, M.B., C.M.Edin., 339, Queen's Road, Battersea Park, S.W.
1888. Nolan, Michael J., L.R.C.P.I., M.P.C., Medical Superintendent, District Asylum, Downpatrick.
1892. Noott, Reginald Harry, M.B., C.M.Edin., Senior Assistant Medical Officer, Broadmoor Criminal Lunatic Asylum, Crowthorne, Wokingham.
1880. Norman, Conolly, F.R.C.P.I., Medical Superintendent, Richmond District Asylum, Dublin, Ireland. (*Hon. Secretary for Ireland, 1887-94.*) (PRESIDENT, 1895.) (*Editor of Journal.*)
1885. Oakshott, J. A., M.D., Medical Superintendent, District Asylum, Waterford, Ireland.
1892. O'Mara, Dr., District Asylum, Limerick, Ireland.
1881. O'Meara, T. P., M.B., Medical Superintendent, District Asylum, Carlow, Ireland.
1886. O'Neill, E. D., L.R.C.P.I., Medical Superintendent, The Asylum, Limerick.
1897. Orange, Margaret, L.S.A.Lond., M.B.Bruce, Assistant Medical Officer, London County Council, Claybury, Essex.
1868. Orange, William, M.D.Heidelb., F.R.C.P.Lond., C.B., The Bryn, Godalming, Surrey. (PRESIDENT, 1883.)
1890. Oswald, Landel R., M.B., M.P.C., Medical Superintendent, City of Glasgow District Asylum, Gartcosh, N.B.
1898. Parker, William Arnot, M.B., C.M., Gartlock Asylum, Gartcosh, N.B.
1898. Passmore, Edwin Stephen, M.D.Lond., M.R.C.P.Lond., London County Asylum, Banstead, Sutton, Surrey.
1893. Paterson, Charles Edward, M.D.Edin., Arnold House, Farnborough, Hants.
1892. Patterson, Arthur Edward, M.B., C.M.Aberd., Senior Assistant Medical Officer, City of London Asylum, Dartford.
1872. Patton, Alex., M.B., Resident Medical Superintendent, Farnham House, Finglas, Co. Dublin.
- * Paul, John Hayball, M.D.St. And., M.R.C.P.Lond., F.R.C.P.Edin., Camberwell Terrace, London, S.E. (*Emeritus Treasurer.*)
1889. Peacock, H. G., L.R.C.P.Edin., M.R.C.S. and L.S.A.Lond., The Lawn, Great Malvern; and Ashwood House Private Asylum, Kingswinford, Staffs.
1873. Pedler, George H., L.R.C.P.Lond., M.R.C.S.Eng., 6, Trevor Terrace, Knightsbridge, S.W.
1893. Perceval, Frank, M.R.C.S.Eng., L.R.C.P.Lond., Medical Superintendent, County Asylum, Whittingham, Preston, Lancashire.
1874. Petit, Joseph, L.R.C.S.I., Medical Superintendent, District Asylum, Sligo.
1878. Philipps, Sutherland Rees, M.D., C.M. Queen's Univ. Irel., F.R.G.S., St. Anne's Heath, Chertsey.

1875. Philipson, George Hare, M.D. and M.A.Cantab., F.R.C.P.Lond., 7, Eldon Square, Newcastle-on-Tyne.
1891. Pierce, Bedford, M.D.Lond., M.R.C.P., Medical Superintendent, The Retreat, York.
1888. Pietersen, J. F. G., M.R.C.S., Ashwood House, Kingswinford, near Dudley, Stafford.
1871. Pim, F., Esq., M.R.C.S.Eng., L.R.C.P.Irel., Medical Superintendent, Palmerston, Chapelizod, Co. Dublin, Ireland.
1898. Piper, Francis Parris, M.B.Lond., M.R.C.S., L.R.C.P., London County Asylum, Claybury, Chigwell, Essex.
1890. Pitcairn, J. J., L.R.C.P., M.R.C.S., M.P.C., 1, Parkhurst Road, Holloway, N.
1896. Planck, Charles, M.R.C.S.Eng., L.R.C.P.Lond., M.A.Camb., Assistant Medical Officer, East Sussex County Asylum, Haywards Heath.
1877. Plaxton, Joseph William, M.R.C.S., L.S.A.Eng., Lunatic Asylum, Kingston, Jamaica.
1889. Pope, George Stevens, L.R.C.P. and L.R.C.S.Edin., L.F.P. and S.Glasg., Medical Superintendent, Middlesbrough Asylum, Cleveland, Yorks.
1876. Powell, Evan, M.R.C.S.Eng., L.S.A., Medical Superintendent, Borough Lunatic Asylum, Nottingham.
1891. Price, Arthur, M.R.C.S., L.S.A., M.P.C., Merriebank, Moss Lane, Aintree, Liverpool.
1875. Pringle, H. T., M.D.Glasg., Medical Superintendent, County Asylum, Bridgend, Glamorgan.
1894. Rambant, Daniel F., M.D.Univ. Dubl., Third Assistant Medical Officer and Pathologist, Richmond District Asylum, Dublin.
1889. Raw, Nathun, M.D., M.P.C., Mill Road Infirmary, Liverpool.
1893. Rawes, William, M.B.Durh., F.R.C.S.Eng., Assistant Medical Officer, St. Luke's Hospital, London.
1896. Ray, Matthew B., M.B., C.M.Edin., Admarsh, Park Avenue, Harrogate.
1870. Rayner, Henry, M.D.Aberd., M.R.C.P.Edin., 2, Harley Street, London, W., and Upper Terrace House, Hampstead, London, N.W. (PRESIDENT, 1884.) (*Late General Secretary.*) (*Editor of Journal.*)
1887. Reid, William, M.D., Physician Superintendent, Royal Asylum, Aberdeen.
1891. Renton, Robert, M.B., C.M.Edin., M.P.C., Montague Lawn, London Road, Cheltenham.
1897. Renton, James Murray, M.A., M.B.Edin., Senior Assistant Medical Officer, County Asylum, Chester.
1886. Revington, George, M.D. and Stewart Scholar Univ. Dubl., M.P.C., Medical Superintendent, Central Criminal Asylum, Dundrum, Ireland.
1897. Richard, William J., M.A., M.B., C.M.Glasg., Medical Officer, Govan Parochial Asylum, Merryflats, Govan.
1889. Richards, Joseph Peeke, M.R.C.S., L.S.A., 6, Freeland Road, Ealing, W.
1893. Rivers, William H. Rivers, M.D.Lond., St. John's College, Cambridge.
1871. Robertson, Alexander, M.D.Edin., 11, Woodside Crescent, Glasgow.
1895. Robertson, William Ford, M.B., C.M., Scottish Asylums' Laboratory, 12, Bristo Place, Edinburgh.
1887. Robertson, G. M., M.B., C.M., M.P.C., Medical Superintendent, Perth District Asylum, Murthley.
1895. Robinson, George Barton, M.B., L.R.C.P., M.R.C.S., Spilaby, Lincolnshire.
1876. Rogers, Edward Coulton, M.R.C.S.Eng., L.S.A., County Asylum, Fulbourn, Cambridge.
1859. Rogers, Thomas Lawes, M.D.St. And., M.R.C.P.Lond., M.R.C.S.Eng., Eastbank, Court Road, Eltham, Kent. (PRESIDENT, 1874.)

1895. Rolleston, Lancelot W., M.B., B.S.Durh., Senior Assistant Medical Officer, Middlesex County Asylum, Tooting, S.W.
1879. Ronaldson, J. B., L.R.C.P.Edin., Medical Officer, District Asylum, Had-dington.
1879. Roots, William H., M.R.C.S., Canbury House, Kingston-on-Thames.
1860. Rorie, James, M.D.Edin., L.R.C.S.Edin., Medical Superintendent, Royal Asylum, Dundee. (*Late Hon. Secretary for Scotland.*)
1888. Ross, Chisholm, M.B.Edin., M.D.Sydney, Hospital for the Insane, Ken-more, New South Wales.
1884. Rowe, E. L., L.R.C.P.Edin., Medical Superintendent, Borough Asylum, Ipswich.
1883. Rowland, E. D., M.D., C.M.Edin., The Public Hospital, New Amsterdam, British Guiana.
1877. Russell, A. P., M.B.Edin., The Lawn, Lincoln.
1883. Russell, F. J. R., L.R.C.P.Irel.
1892. Rutledge, Victor, M.B., District Asylum, Londonderry, Ireland.
1866. Rutherford, James, M.D.Edin., F.R.C.P.Edin., F.F.P.S.Glasgow, Physician Superintendent, Crichton Royal Institution, Dumfries. (*Hon. Secre-tary for Scotland, 1876-86.*)
1896. Rutherford, James M., M.B., C.M.Edin., Assistant Physician, Royal Edinburgh Asylum, Morningside.
1887. Rutherford, W., M.D., Consulting Physician, Ballinasloe District Asylum, Ireland.
1896. Rutherford, Robert Leonard, M.D., Medical Superintendent, Digby's Asylum, Exeter.
1889. Ruxton, William Leddington, M.D. and C.M., 8, Derwent Place, New-castle-on-Tyne.
- * Sankey, R. Heurtley H., M.R.C.S.Eng., Medical Superintendent, Oxford County Asylum, Littlemore, Oxford.
1894. Sankey, Edward H. O., M.A., M.B., B.C.Cantab., Resident Medical Licensee, Boreatton Park Licensed House, Baschurch, Salop.
1891. Saunders, Charles Edwards, M.D.Aberd., M.R.C.P.Lond., Medical Super-intendent, Haywards Heath Asylum, Sussex.
1873. Savage, G. H., M.D.Lond., 3, Henrietta Street, Cavendish Square, W. (*Late Editor of Journal.*) (PRESIDENT, 1886.)
1894. Scanlan, William T. A., M.B., M.Ch., B.A.O.R.U.I., Assistant Medical Officer, District Asylum, Cork.
1862. Schofield, Frank, M.D.St. And., M.R.C.S., Medical Superintendent, Cam-berwell House, Camberwell.
1896. Scott, James, M.B., C.M.Edin., Medical Officer, H.M. Prisons, Holloway and Newgate; 3, Parkhurst Road, Holloway, London, N.
1889. Scowcroft, Walter, M.R.C.S., Senior Assistant Medical Officer, Royal Lunatic Hospital, Cheadle, near Manchester.
1880. Seecombe, George, L.R.C.P.L., The Colonial Lunatic Asylum, Port of Spain, Trinidad, West Indies.
1879. Seed, William, M.B., C.M.Edin., The Poplars, 110, Waterloo Road, Ashton-on-Ribble, Preston.
1889. Sells, Charles John, L.R.C.P., M.R.C.S., L.S.A., White Hall, Guildford.
1882. Seward, W. J., M.B.Lond., M.R.C.S., Medical Superintendent, Colney Hatch, Middlesex.
1896. Shanahan, John Francis, L.R.C.P.I., L.R.C.S.I., 2, The Crescent, Limerick.
1891. Shaw, John Custance, M.R.C.S.Eng., L.R.C.P.Lond., 233, Wightman Road, Harringay, London, N.
1867. Shaw, Thomas C., M.D.Lond., F.R.C.P.Lond., Medical Superintendent, London County Asylum, Banstead, Surrey.

1880. Shaw, James, M.D., 310, Kensington, Liverpool.
1891. Shaw, Harold B., B.A., M.B., B.B., D.P.H.Camb., Medical Superintendent, Isle of Wight County Asylum, Whitecroft, Newport, Isle of Wight.
1882. Sheldon, T. S., M.B., Medical Superintendent, Cheshire County Asylum, Parkside, Macclesfield.
1898. Sherrard, David John, B.A., M.B., M.Ch.Dub., The Laurels, Hailsham, Sussex.
1896. Shortt, William Rushton, M.B., B.S.Durh., M.R.C.S., L.R.C.P.Lond., Assistant Medical Officer, City Asylum, Gosforth, Newcastle-on-Tyne.
1877. Shuttleworth, G. E., M.D.Heidelb., M.R.C.S. and L.S.A.Eng., B.A.Lond., late Medical Superintendent, Royal Albert Asylum, Lancaster; Ancaster House, Richmond Hill, Surrey.
1895. Simpson, Francis Odell, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer, Hawkhead Asylum, Crookston, N.B.
1889. Simpson, Samuel, M.B. and M.C.H.Dubl., M.P.C., St. Mark's Road, Enfield.
1888. Sinclair, Eric, M.D., Medical Superintendent, Gladesville Asylum, New South Wales.
1870. Skue, C. H., M.D.St. And., Medical Superintendent, Ayrshire District Asylum, Glengall, Ayr.
1891. Skeen, James Humphrey, M.B., C.M.Aberd., Medical Superintendent, Glasgow District Asylum, Bothwell.
1898. Skeen, William St. John, M.B., C.M., County Asylum, Winterton, Ferryhill, Durham.
1897. Smalley, Herbert, M.D.Durh., L.R.C.P., M.R.C.S., Prison Commission, Home Office, Whitehall, S.W., and 1, Edinburgh Mansions, Victoria Street, London, S.W.
1858. Smith, Robert, M.D.Aberd., L.R.C.S.Edin., Medical Superintendent, County Asylum, Sedgefield, Durham.
1885. Smith, R. Percy, M.D., B.S., F.R.C.P., M.P.C., 36, Queen Anne Street, Cavendish Square, W. (*General Secretary*, 1896-7.)
1884. Smith, W. Beattie, F.R.C.S.Edin., L.R.C.P.Lond., Medical Superintendent, Hospital for the Insane, Ararat, Victoria.
1892. Smyth, W. Johnson, M.B.Edin., Durley Gardens, Bournemouth.
1881. Snell, George, M.D.Aberd., M.R.C.S.Eng., Medical Superintendent, Public Lunatic Asylum, Berbice, British Guiana.
1885. Soutar, J. G., Barnwood House, Gloucester.
1875. Spence, J. Beveridge, M.D., M.C.Queen's Univ., Medical Superintendent, Burntwood Asylum, near Lichfield. (*Registrar*.)
1883. Spence, J. B., M.D., M.C., The Asylum, Colombo, Ceylon.
1898. Sproat, James Hugh, M.B.Lond., M.R.C.S., L.R.C.P., Sonnerset and Bath Asylum, Wells.
1891. Stansfield, T. E. K., M.B., C.M.Edin., The Heath Asylum, Bexley, Kent.
1898. Steen, Robert H., M.D.Lond., West Sussex Asylum, near Chichester.
1868. Stewart, James, B.A.Queen's Univ., F.R.C.P.Edin., L.R.C.S.Irel., late Assistant Medical Officer, Kent County Asylum, Maidstone; Dummurry, Sneyd Park, near Clifton, Gloucestershire.
1884. Stewart, Robert S., M.D., C.M., Assistant Medical Officer, County Asylum, Glamorgan.
1887. Stewart, Rothsay C., M.R.C.S., Medical Superintendent, County Asylum, Leicester.
1862. Stilwell, Henry, M.D.Edin., M.R.C.S.Eng., Moorcroft House, Hillingdon, Middlesex.
1864. Stocker, Alonzo Henry, M.D.St. And., M.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent, Peckham House Asylum, Peckham.

1897. Stoddart, William Henry Butter, M.B., B.S.Lond., M.R.C.S.Eng., M.R.C.P.Lond., Pathologist, Lancaster County Asylum, Prestwich, Manchester.
1881. Strahan, S. A. K., M.D., Assistant Medical Officer, County Asylum, Berrywood, near Northampton.
1868. Strange, Arthur, M.D.Edin., Medical Superintendent, Salop and Montgomery Asylum, Bicton, near Shrewsbury.
1895. Strapp, Walter Russell, M.B., C.M., Avondlea, Aberfoyle, near Stirling, N.B.
1896. Straton, Charles Robert, F.R.C.S.Edin., Medical Visitor, Fisherton House and Laverstock House, West Lodge, Wilton, Wilts.
1885. Street, C. T., M.R.C.S., L.R.C.P., Haydock Lodge, Ashton, Newton-le-Willows, Lancashire.
1897. Stuart, Robert, M.R.C.S., L.R.C.P.Lond., 20, New Elvet, Durham.
1886. Sufferu, A. C., M.D., Medical Superintendent, Ruberry Hill Asylum, near Bromsgrove, Worcestershire.
1894. Sullivan, W. C., M.D.R.U.I., Deputy Medical Officer, H.M. Prison, Liverpool.
1898. Sutcliffe, John, M.R.C.S., L.R.C.P., Royal Asylum, Cheadle, near Manchester.
1870. Sutherland, Henry, M.D.Oxon, M.R.C.P.Lond., 21, New Cavendish Street, Portland Place, W.; Newlands House, Tooting Bec Road, Tooting Common, S.W.; and Otto House, 47, Northend Road, West Kensington, W.
1895. Sutherland, John Francis, M.D.Edin., Deputy Commissioner in Lunacy, 4, Merchiston Bank Avenue, Edinburgh.
1868. Swain, Edward, M.R.C.S., Medical Superintendent, Three Counties' Asylum, near Hitchin, Herts.
1877. Swanson, George J., M.D.Edin., Lawrence House, York.
1897. Tait, James Sinclair, M.D., L.R.C.P.Lond., L.R.C.S.Edin., Medical Superintendent, Hospital for Insane, St. John's, Newfoundland.
1857. Tate, William Barney, M.D.Aberd., M.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent of the Lunatic Hospital, The Coppice, Nottingham.
1897. Taylor, Frederic Ryott Percival, M.D., B.S.Lond., M.R.C.S.Eng., L.R.C.P.Lond., Darenth Asylum, Dartford, Kent.
1890. Telford-Smith, Telford, M.A., M.D., Medical Superintendent, Royal Albert Asylum, Lancaster.
1888. Thomas, E. G., Park House, Caterham, Surrey.
1880. Thomson, D. G., M.D., C.M., Medical Superintendent, County Asylum, Thorpe, Norfolk.
1897. Thurman, William Rowland, M.B., B.S.Dunedin, Assistant Medical Officer, City and County Asylum, Bristol.
1898. Todd, Percy Everal, M.B., Acting Medical Superintendent, Port Alfred Asylum, Cape Colony, South Africa.
1896. Townsend, Arthur, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, Hospital for Insane, Barnwood House, Gloucester.
1888. Tuke, John Batty, junior, M.B., C.M., M.R.C.P.E., Resident Physician, Saughton Hall, Edinburgh.
1881. Tuke, Charles Molesworth, M.R.C.S.E., Chiswick House, Chiswick.
1885. Tuke, T. Seymour, M.B., B.Ch.Oxford, M.R.C.S.E., Chiswick House, Chiswick; and 37, Albemarle Street, Piccadilly, W.
1877. Turbull, Adam Robert, M.B., C.M.Edin., Medical Superintendent, Fife and Kinross District Asylum, Cupar. (*Hon. Secretary for Scotland.*)
1896. Turner, Alan Charles, M.R.C.S.Eng., L.R.C.P.Lond., 79, Gordon Road, Ealing.

1889. Turner, Alfred, M.D. and C.M., Assistant Medical Officer, West Riding Asylum, Menston, Yorkshire.
1890. Turner, John, M.B., C.M.Aberd., Senior Assistant Medical Officer, Essex County Asylum.
1878. Urquhart, Alexr. Reid, M.D., F.R.C.P.E., Physician Superintendent, James Murray's Royal Asylum, Perth. (*Editor of Journal.*) (*Honorary Secretary for Scotland, 1886-94.*) (PRESIDENT.)
1894. Vincent, William James, M.B.Durh., Assistant Medical Officer, Borough Asylum, Nottingham.
1876. Wade, Arthur Law, B.A., M.D.Dubl., Medical Superintendent, County Asylum, Wells, Somerset.
1884. Walker, E. B. C., M.B., C.M.Edin., Assistant Medical Officer, County Asylum, Haywards Heath.
1896. Walker, William F., L.R.C.S. and L.M.Edin., L.S.A.Lond., co-proprietor and licensee, Home for Inebriates, Street Court, Kingsland, R.S.O., Herefordshire.
1898. Wall, Charles Percivale Bligh, M.B., Ch.B.Edin., District Asylum; Inverness, N.B.
1877. Wallace, James, M.D., Visiting Medical Officer, 16, Union Street, Greenock.
1883. Walmsley, F. H., M.D., Medical Superintendent, Darenth Asylum, Dartford, Kent.
1871. Ward, J. Bywater, B.A., M.D.Cantab., M.R.C.S.Eng., 40, St. Giles's, Oxford.
1889. Warnock, John, M.D., C.M., B.Sc., M.R.C.S., Sanitary Department, Ministry of Interior, Cairo, Egypt.
1897. Warren, Ernest Downing, L.R.C.P.Lond., M.R.C.S.Eng., Assistant Medical Officer, Cumberland and Westmoreland Asylum, Garlands, Carlisle.
1895. Waterson, Jane Elizabeth, M.D.Brussels, L.R.C.P.I., L.R.C.S.Edin., Official Visitor, Cape Town District Lunatic Asylums, Cape Town, South Africa.
1891. Watson, George A., M.B., C.M.Edin., M.P.C., Senior Assistant Medical Officer, City Asylum, Birmingham.
1885. Watson, William Riddell, L.R.C.S. and L.R.C.P.Edin., Govan District Asylum, Hawkhead, Paisley.
1898. Watson, William R. K., M.A., M.B., C.M., H.M. Prison, Holloway, London, N.
1897. Watt, Neish Park, M.B., C.M.Edin., 1, Denham Green Terrace, Trinity Road, Edinburgh.
1880. Weatherly, Lionel A., M.D., Bailbrook House, Bath.
1897. Welsh, Gilbert Aitken, M.B., C.M.Edin., Assistant Physician, Crichton Royal Institution, Dumfries.
1880. West, George Francis, L.R.C.P.Edin., Medical Superintendent, District Asylum, Kilkenny, Ireland.
1872. Whitcombe, Edmund Banks, M.R.C.S., Medical Superintendent, Winson Green Asylum, Birmingham. (PRESIDENT, 1891.)
1897. White, A. T. O., M.R.C.S.Eng., L.R.C.P.Edin., Assistant Medical Officer, Metropolitan Asylum, Darenth, Dartford, Kent.
1884. White, Ernest, M.B.Lond., M.R.C.P., City of London Asylum, Stone, Dartford, Kent.
1889. Whitwell, James Richard, M.D. and C.M., Medical Superintendent, Suffolk County Asylum, Melton Woodbridge.
1883. Wigglesworth, J., M.D.Lond., Rainhill Asylum, Lancashire.
1895. Wilcox, Arthur William, M.B., C.M.Edin., Second Assistant Medical Officer, County Asylum, Hatton, Warwick.

1887. Will, John Kennedy, M.B., C.M., M.P.C., Bethnal House, Cambridge Road, E.
 1862. Williams, S. W. Duckworth, M.D.St. And., L.R.C.P.Lond., 76, Jermyn Street, London, S.W.
 1890. Wilson, George R., M.B., C.M., M.P.C., Medical Superintendent, Mavisbank Asylum, Polton, Midlothian.
 1896. Wilson, Robert, M.B., C.M.Glasg., Nailsworth, Gloucestershire.
 1895. Wilson, James, M.A., M.B., C.M., Assistant Medical Officer, Wilts County Asylum, Devizes.
 1897. Winder, W. H., M.R.C.S., L.R.C.P.Lond., D.P.H.Cantab., Deputy Medical Officer, H.M. Convict Prison, Aylesbury.
 1875. Winslow, Henry Forbes, M.D.Lond., M.R.C.P.Lond., 14, York Place, Portman Square, London.
 1897. Wiseman, David William, M.R.C.S.Eng., L.R.C.P.Lond., Assistant Medical Officer, County Asylum, Melton, Suffolk.
 1869. Wood, T. Outterson, M.D., M.R.C.P.Lond., F.R.C.P., F.R.C.S.Edin., 40, Margaret Street, Cavendish Square, W.
 1894. Wood, Guy Mills, M.B.Durh., Assistant Medical Officer, County Asylum, Rainhill, near Prescott, Lancashire.
 1873. Woods, Oscar T., M.B., M.D.Dubl., L.R.C.S.I., Medical Superintendent, District Asylum, Cork. (*Hon. Secretary for Ireland, 1897.*)
 1885. Woods, J. F., M.R.C.S., Medical Superintendent, Hoxton House, N.
 1877. Worthington, Thomas Blair, M.A., M.B., and M.C.Triu. Coll., Dubl., Medical Supt., County Asylum, Knowle, Fareham, Hants.
 1898. Yeates, Thomas, M.B., C.M., Borough Asylum, Ryhope, Sunderland.
 1862. Yellowlees, David, M.D.Edin., F.F.P.S.Glasg., L.L.D., Physician Superintendent, Royal Asylum, Gartnavel, Glasgow. (**PRESIDENT, 1890.**)

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| Ainslie, William. | Corner, Harry. |
| Alexander, Edward H. | Cotton, William. |
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| Black, Victor. | Distin, Howard. |
| Blackwood, John. | Druumond, Russell J. |
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 Rust, Montague.
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 4 Wilson, G. R.
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