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Part I.—Original Articles.

Some Considerations on the Present-day Knowledge of Psychiatry, and its Application to those under Care in Public Institutions for the Insane.⁽¹⁾ The Presidential Address at the 83rd Annual Meeting of the Medico-Psychological Association of Great Britain and Ireland, held at Belfast, on July 2-5, 1924, by Dr. M. J. NOLAN, Resident Medical Superintendent, Down District Asylum, Consulting Visitor in Lunacy to the Lord Chief Justices of Northern and Southern Ireland.

THERE is great difficulty in finding a novel theme as the subject of an address to the members of an Association which rejoices in the maturity of its eighty-third year of existence. Still greater is the difficulty in finding a subject of common interest having regard to the varied branches of work covered by their labours, ranging as they do from the busy routine of a crowded day to the silent special research in the laboratory. And the greatest difficulty of all lies in the fact that in each of these fields of work there are many present who have had vastly wider opportunities than I have had, and who could treat their chosen subject with infinitely more skill in thought and language than I can command. Since, however, you have been good enough to give me the opportunity of addressing you I feel you will be no less generous in pardoning my shortcomings on this occasion.

I have taken to heart the advice of the Sage of Chelsea, who has said, "If you do speak, speak upon that subject of which you think you know something, and be mindful to speak briefly." My subject is some considerations on the present-day knowledge of psychiatry, and its application to those under care in public institutions for the insane. Of these matters I hope I know something, and that something I shall endeavour to express as briefly and as lucidly as time will permit.

⁽¹⁾ Delivered at Queen's College, Belfast, July 2, 1924.

May I premise by stating that the insanity I refer to to-day is covered by that degree of mental disturbance which necessitates the curtailment of the personal liberty of the persons affected, not only in their own interest, but in the interest of the community at large—I take no account of academic distinctions of disordered mentality, passing over *idiots savants*, erratic geniuses, *et hoc genus omne*.

The asylum physicians engaged in the care and treatment of these ready-made lunatics are hourly faced with problems in psycho-pathology, and are obliged to seek a basis for the morbid mental phenomena displayed by their patients. The crude basis is found, more or less, to the satisfaction of the observer, in physiogenic or psychogenic causes according as he is biased himself towards a materialistic or a metaphysical view-point. Some physicians there are—and I include myself in the number—who, not finding satisfaction in one or other of these groups, are inclined to seek the solution in a combination of physical and psychical conditions. This position is a rock of refuge from the maelstrom of speculation which seems at the present time to whirl to destruction those who seek in its unfathomable waters what they have abandoned on the *terra firma* of objective fact. They seek a solely material or a solely mental basis of intellectual failure, when a reasonably obvious combination of both better explains the origin in a reasonably evident manner, as in most cases there is a clearly defined vicious circle of cause and effect—mental and bodily. The difficulty that strikes one is that a given number of persons are affected by some particular bodily disease, and show no mental abnormality; a given number are affected by mental abnormality and exhibit no obvious bodily disease. If, however, we find the same bodily disease in conjunction with mental abnormality, are we justified in determining the relationship as cause and effect? The answer would seem to be that when the removal of the bodily disease is followed by the lifting of the mental cloud, such a relationship may be fairly claimed, and inasmuch as a large proportion of cases run such a course, it is one's duty to assume that such a relationship does exist, and that we should give the patient the benefit of any doubt there may be on the point. In any event the nature of the relationship still presents the great riddle—an enigma so far unsolved, notwithstanding the fact that in the vast majority of cases the dual disorder exists. "There is no more common saying than *mens sana in corpore sano*," says Carlyle, "and nothing more difficult to achieve," and therefore it should be our highest ideal. A man all lucid and in equilibrium. His intellect a clear mirror, geometrically a plane, brilliantly sensitive to all objects and impressions

made on it; not twisted into convex or concave, and distorting everything, so that he cannot see the truth of the matter without endless groping and manipulation, healthy, clear, and free, and discerning truly all around him—we can never attain that at all." The deviations from it are also appallingly frequent. Here one may briefly consider the cause of these strange deviations running through all ages and nations.

Psychology, normal and abnormal, as exemplified in the Scriptures and the Classics, is so obviously identical in type with the examples we meet to-day that the fact is self-evident. Throughout the world's history there has been a continuity of fundamental mentality. "So far as we can judge," says Prof. Elliott Smith, "there has been no far-reaching and progressive modification of the instincts and emotions since man came into existence beyond the necessary innate power of using more the cerebral apparatus which he has to employ." Dean Inge, on the same subject, puts it that—"Apart from the accumulation of knowledge and experience there is no proof that man has changed much from the first stone age." In confirmation, Edward Clodd holds that—"In every department of human thought there is present evidence of primitive ideas. Scratch the epidermis of the civilized man and the barbarian is found in the derm. His civilization is the rare topmost part of the tree whose roots are in the earth, and whose trunk and larger branches are in savagery. Hence, although the study of anatomy and physiology—in other words of structure and of function—paved the way, no real advance in pathology was possible until the fundamental unity and interdependence of mind and body were made clear, the recency of which demonstration explains the persistency of barbaric theories of disease in civilized societies." But while the fundamental unity of mind has been preserved, the superstructure raised on it has infinite varieties of design, built up by "the accumulation of knowledge and experience." These later varieties are seen *en masse* in the framework of national character, and in finer details in individuals; acquired in the passage of time they are superimposed on inherited qualities. They have been determined by the repetition of the emotions most frequently called into play by the particular stimuli of the environment, as national conditions, be they good or bad, produce the mental operations which go to build up national characteristics. These latter are so strongly in contrast and so antagonistic that the incompatibility of the temperament of nations is no less accentuated than it is in individuals. As Lord Balfour asserts, "the flexible element in any society, that which is susceptible of progress or decadence, must therefore be looked for rather in the physical and

psychical affecting the life of its component units than in the inherited constitution. This last rather supplies a limit to variations than an element which does itself vary, though from this point of view its importance is capital. I at least find it impossible to believe that any attempt made to provide widely different races with an identical environment—political, religious, educational, what you will—can ever make them alike. They have been different since history began; different they are destined to remain through future periods of comparable duration.”

It is evident, then, that the so-called normal mind is one of time and place, as it is subject to laws of relativity of period and locality, and any deviation from it is regarded as mental aberration. At all times this deviation is evolved slowly in individuals, but at critical periods in history an impetus gives it more rapid movement. The aftermath of war is a hot-bed for very quick development, as at the present time, when there is an extraordinary effort to shift the shackles of convention in all grades of society. The result is a levelling up and down gives rise to an altered level of convention that merges the characteristics of the old social grades, and prepares the way for a still further adjustment in the future, when a renewed radical upheaval follows on some other world-war. In the transition period in which we live, there is much in the conduct of many persons that approximates to apparent insanity. It is necessary therefore to bear in mind that certain unconventional ideas, so long as they do not act injuriously on the holder or on others, may be tolerated, as possibly they may be but forerunners of some high flight of originality, though in the majority of instances they may prove but the penumbra of total eclipse. We must not neglect to take into account the decadence “in certain phases of artistic and literary developments in which”—as Lord Balfour points out—“an overwrought technique straining to express sentiments too subtle or too morbid, is deemed to have supplanted the direct inspiration of an earlier and a simpler age. Whether these autumnal glories, these splendours touched with death are recurring phenomena in the literary cycle, whether, if they be, they are connected with other forms of decadence, may be questions well worth asking and answering.”

In the present-day estimation of what constitutes insanity, allowance must be made for originality breaking with convention with a suddenness that startles those left in the groove. Such flights are becoming more and more frequent. Units, more keenly reactionary than the mass, break off, flashing by; some—very few—get permanently placed as fixed stars. Erasmus had these latter in view when he wrote—“A great many discoveries would never

have come to light if they had not struck the fire of subtlety out of the flint of obscurity." As Maudsley pointed out—"There are antagonistic forces at work in the determination of the orbit of human thought as there are in the determination of the order of the planets—a centrifugal or revolutionary force giving the expansive impulse of new ideas, and a centripetal or conservative force manifest in the restraining influence of habit, the resultant of their opposing action being the determination of the evolution of the mind. Is it not then beyond measure sad to think that precious germs of originality may be blighted by the practice, too prevalent in this era, of treating as insanity any marked deviation from the common standard of thought and action?"

Having so far touched on the unchanging basis of the normal mind, and the synchronous variability of conduct, as the result on it of special circumstances of time, place, education, religion and politics, all of which unite in forming the view-point, we can readily understand the essential unchanging basis underlying mental disease. Here we find the same instincts and emotions, weakened, exaggerated or perverted to an abnormal degree as the case may be, but expressed by characteristic behaviour. So that whatever doubt may be raised as to the continuity of the germ-plasm in physical hereditary composition, the transmission of psychical traits remains established, so uniform and universal are they, and so much in evidence by reason of the mental conflicts which never cease. It is the undue stress of these conflicts that fills our asylums, but its *modus operandi*, though old as man himself, is shrouded in mystery.

What explanation comes in whole or part to explain the problem, or to indicate treatment, from the material side?

The question is put, you will note, by the physician of the average public asylum—average in point of size—one of those physicians who has to deal with the bulk of certified insanity in our public institutions. Thanks to the splendid research work in laboratories established in the great teaching centres, and in the larger asylums at home and abroad, there is now a store of specialized knowledge available, dealing with the allied abnormal condition of the brain, the general nervous system, the blood, the endocrine and other organs in mental disease; added to which there is a vast accumulated treasure of physiological, bio-chemical and general pathological research. This work, which is of the very highest value and importance, to some extent establishes a material relationship to the psychoses, and not infrequently affords a clue to appropriate treatment in special cases. Reduced to actual practice, the pathological findings not only throw light on many dark places,

but indicate broad lines of medical treatment which may be summed up under three heads, *viz.* :

1. Restoration of disturbed metabolism.
2. Improvement in quantity and quality of the blood.
3. General hygienic conditions.

It is not too much to say that in the majority of cases that come under care marked success follows these measures, but the not infrequent failures still present a difficult problem. The relationship of the morbid physical and mental condition in many cases would appear to be incidental rather than dependent one on the other, as they do not respond to treatment, the *mens sana* still evading a return to the *corpore sano*, or *vice versâ*. Moreover, we find that insanity is sometimes associated with some definite bodily disease, and that as frequently that same bodily disease is found unassociated with mental disorder; this knowledge, so far as it relates to insanity in general, is of negative value. When, however, we find in cases of insanity that the removal of the bodily disease is synchronous with the restoration of the mental functions, and that this is accomplished *pari passu*, we are justified in the assumption of some connection of a definite character between the two morbid states. It is evident the linking-up must depend on something existing in the individual, and this unknown quantity in the personal equation is the all-important factor in the incidence of bodily and mental disease. But wanting in actual knowledge as we are of the nature of the link we must only gratefully rejoice in the fact that, in consequence of our special knowledge, we can join in the alliance for the patient's benefit—and for that happy position we are indebted to the results of physical and psychical research. Here it is that bio-chemical, bacteriological, hæmatological and toxicological considerations are suggestive and helpful.

We now turn for help to the psychical side of the treatment. Here, too, we have much stored knowledge to enlighten and guide us in the delicate handling of disordered mentality—there is much of the old lore that is priceless, and much of inestimable value in the new. The old psychology has been largely cast aside as unsatisfying; the new psychology professes to leave nothing unknown; experience teaches us that we may without loss abandon some of the old teaching, and reject with benefit some of the tenets of the new school. It is a necessary sequence of any progressive research in science that formulæ must be reviewed, and scrapped from time to time, and so in this age of activity in all-round investigations every *-ology* has been recast, and endowed with the prefix “new”; so we come to have a “new psychology,” and consequently a new

psycho-pathology, for which it must be admitted there was pressing need. In the good old days disorder of mind was treated largely on the "expectant" method, and left to work itself out to decay or recovery. Active interference was limited to "appeals to reason"—a questionable method giving poor results. In later years a process was generally exercised by all asylum physicians: it consisted of getting the greatest possible insight into the patient's mind, hereby relieving tension and establishing confidence and support. This system had no definite name; it was simply expressed as "knowing your patient," and it proved as successful as any method could prove in the special circumstances. Just of late it would seem to be rediscovered and named "mental analysis"—at least so named when applied to cases of initial mental disorder before the establishment of a definite psychosis. In any event the method is the same at bottom, though it may not be necessary to carry it out in asylums to such a searching degree, since pronounced insanity needs no dredging to bring up the secrets of the depths, which, torn up by the nerve-storm, usually lie on the surface. The "autognosis" of to-day is very much akin to the "appeals to reason" of the Victorian era. In many instances it proves of very special value, and more frequently than it did in days when patients were not, as now, sent to asylums in the earlier stages of the malady. But whether the case is acute or chronic, as Jung puts it, "the direction of morbid thought must be accepted and followed up. Thus the explorer puts himself on the standpoint of the psychosis." In simpler words, we must continue to do what has always been our custom—we must put ourselves in the patient's place, for only by so doing can we properly estimate his standpoint. Having attained that essential knowledge, the line of suggestive treatment can be followed up; and this, coupled with such medical treatment as is suited to the special case from our investigation of the bodily condition, holds out the best prospect of amelioration, if not complete removal of the mental trouble. What, it may be asked, of psycho-therapy? Only those who are grossly ignorant of the conditions would expect any field for its use in the case of the certified lunatics in public asylums. There may possibly be an individual now and again suitable for its employment, but, as has been pointed out, the patients in such institutions exhibit such an overt degree of insanity as to render "mental exploration" either impossible or unnecessary.

Here, then, is the position of the asylum physician to-day. As regards the certified insane, he brings to bear on each case such bodily and mental treatment as research in pathology and psycho-pathology indicates as appropriate to the special individual.

Whatever the theories may be that are elaborated from pathological, physiological or psychological investigations, their results should be brought to bear as far as possible on the patients when likely to prove of benefit to them. It is obvious that to do so with any degree of success, the asylum physician must, however isolated his locality, endeavour to keep in touch with the march of progress in each of these departments. At the present time this is much more easy of accomplishment than in former years: to-day clinical laboratory research can be commanded to a large extent; current literature can be availed of in condensed form. The asylum physician is thus enabled to carry on with benefit not only to his own patients, but to others, the study of clinical insanity, which is the most necessary part of his daily work, and which is no less important than the study of its material associations and conditions. There is, in this way, as intimate an interchange between the ward and the laboratory as there is between body and mind. In this connection it may be fairly claimed that those who have in the past devoted their own superior intellects to the study of mind in disorder, and who have contributed to a very great extent to the building up of the clinical insanity of to-day, have established it in a very definite position.

But, as Dr. Sullivan, Medical Superintendent of Broadmoor Criminal Asylum, in his recent epochal work on *Crime and Insanity*, says, "The differentiation of the several clinical forms of insanity is for the most part artificial and provisional." With the exception of a very small number of groups, of which general paralysis of the insane is the most conspicuous example, "the mental diseases distinguished in the text-books are for the most part merely clinical types descriptive of the different ways in which disorder of the mental faculties, probably arising from an essentially similar morbid condition of the brain, may be combined in their symptomatic manifestations." Many years have gone by since Dr. Sullivan and I worked side by side; we have here arrived at the same viewpoint as to clinical insanity, though during those years we have travelled different paths in different spheres. With one reservation I would endorse his findings, namely, "Is the essential morbid condition underlying all insanity one of the brain alone?"

The point is, does the essentially morbid condition apply to the brain alone? May it not be more intimately bound up in the inconceivable manner of union of the material and psychical? The teaching of St. Augustine still holds true—"Modus, quo corporibus adhaerent spiritus—omnino mirus est, nil comprehendi ab homine potest; et hoc ipse homo est." ("The manner whereby souls

adhere to bodies is altogether marvellous, and cannot be conceived by man, and yet the union is man.")

To-day we cannot feel satisfied with the view that insanity is all material in origin, neither that it is a purely metaphysical creation. Of necessity from observation we are forced to see that body and mind work so closely together that there is still that mysterious unknown quantity to be reckoned with in arriving at the value of the human equation—"the manner of adherence"—and consequently the method of partial severance which dislocated normal functions, thereby constituting mental disorder. The one thing we do know is that the tenuity of the link is so extreme that so far it is altogether elusive to our mentality.

One cannot, however, contemplate hundreds of mentally abnormal individuals over a long period of years without falling now and again into fantasy of what is not conceivable. One of my predecessors in office, Dr. Browne, Scotch Commissioner in Lunacy, laid it down that "every practical man, even he who boasts his freedom from the shackles of hypothesis and the vagaries of speculation, has a theory; and whenever that is true and sound, or to what extent it is true and sound and has led to a judicious and humane course, it may be confidently claimed as a contribution to the science."

Sir Frederick Mott possibly comes nearest to an understanding of the *modus operandi* of functional disturbances when he indicates "a suspension of neuron function at the highest level." But still something is lacking, some more definite knowledge of the ultimate elements involved in the states so produced. Is the failure in the neuron function due to conditions inherent in the neuron, or to extrinsic conditions affecting it to such a degree that the balance between normal and abnormal is overthrown? Whatever it may be, the dividing line must be one of infinite delicacy and minuteness; possibly it depends on some third agent yet unknown to us, akin to and as mysterious in its nature as electricity, which present-day science regards as the basis of all matter. And as electrical phenomena can only be accounted for now by some interchange or displacements of protons and electrons, some like interchange or displacement may cause the disturbance of function. It has been demonstrated that light can be converted to sound, and that the "conversion" has been of practical use in relieving the disabilities of the blind. The fact that such "conversion" could be effected is suggestive of far-reaching results in allied natural laws to such an extent as to render the union of body and mind demonstrable. Even then there may well be no finality as to the inner working of the human mind, which must of necessity be constructively developed in

individuals by the accumulated influences of the past shaping the impressions of the present, ever progressing, but never reaching the goal—truly a chasing of rainbows. Meantime we must in our day take note of what interests us, of the real facts of life as laid bare, not indulging in too much theory. We must remember that Spinoza did not recognize Saturn's Ring as the Ring, and the concentrated attention of Mendel in the confined monastery garden has resulted in one of the greatest advances in the study of heredity. Recently the study of earthquakes has given testimony to an individual sensitiveness indicating a line of inquiry between seismology and physiology. The areas of scientific study are constantly being so enlarged that they tend to approach each other at various points, suggesting the "oneness" of ourselves and our world.

The psychology on which observation is based must be as true to herd psychology as possible, and free from personal colouring by the reporter. Dr. Suttie, in a recent article on "The Value of Human Evidence," makes the following observation: "In psychology, again, as in every other branch where we are dependent on the value of human evidence for our facts, and objective controls are rarely available, it is of cardinal importance that the evidence should be scrutinized inexorably, and every possible factor of perversion taken into account. It has to be recognized that the method by which the clinical facts are elicited in the psychoneuroses may itself induce a considerable degree of alteration in those facts, especially in the course of a long-continued investigation, and that the final picture we may believe ourselves to have observed may in part be of the nature of an artefact. For it is the foundation of psycho-pathological theories in facts of observation which requires strengthening, and if this could be stabilized, we might reasonably hope for the building of a solid structure upon it."

Dr. Suttie has further elsewhere struck a warning note against the blind acceptance of Freudian "metapsychology," and has ably shown how easily Freud fell into radical error when he ventured on biology in connection with some of his more recent theories, and in particular instances "his assumption that the brain cortex (outer surface) is the homologue or direct descendant and representative of the outermost layers of the ectoderm, whereas, of course, the contrary is the case," and the assumption he made that consciousness was accommodated on the surface of the brain instead of being safely lodged somewhere in the deepest recesses of it.

In conclusion I feel very deeply that this address so inadequately deals with a subject of the very highest importance—the study of

clinical psycho-pathology in public asylums. For bringing up the subject I may in apology remind you that the Association was originally composed only of asylum physicians, and that one of its objects was mutual defence. The need for such defence as was then necessary, has long since passed away. But at the present time, when so much public attention is directed, for several reasons, to institutions of the kind, it is not out of course to review our position in regard to them. My remarks must, however, be in no sense regarded as an apology. The mental hospital physician, though working in a restricted groove, is ploughing "no lonely furrow"; gleaned from the widest social field he deals with weakly seedlings, rampant weeds, and "sports"; he aims at strengthening the one, uprooting the other, and bringing back the latter to a normal level. As his work brings him in contact with all branches of general medicine, he must be primarily a physician. Special opportunities for the study of mental disorder alone constitute his claim to a better knowledge of insanity than the general practitioner. His position gives him an exceptional opportunity not only to alleviate insanity in its many forms, but to study incidentally the clinical aspects it presents. His study of psycho-pathology aims not only at more scientific accuracy, but secures to the patient the most essential element in the promotion of recovery—individual attention. At the moment the call in general medical education in America is "Back to the bedside," as it is felt that "however perfect the knowledge of disease may be, it is practically useless without the study of the patient also." I would strongly urge those who, situated as I am, are precluded from the fascinating methods of laboratory research, to be content to read, with as full an understanding as possible, the human documents that come within their ken, and to bring to bear on them the interpretations of the best and most practicable findings in general medicine, in psycho-pathology, in Christian science, in faith-healing, in psychotherapy and occupation therapy, using anything which may prove of benefit in a particular case. Some particular treatment, such as suitable occupation, which is such a valuable factor in promoting recovery, can only be had in asylums. It is obvious that persons suffering from mental disorder for many reasons cannot be provided with it in ordinary circumstances—personal, general and economic difficulties preventing. Even when it fails to secure recovery, many delusional cases of a chronic class can be rendered useful, by turning them on to work which they regard as a demonstration of their special claims to power, property, or divine prerogative. Success or failure, the results, if read aright, are controls to the deductions of theorists. The study of psycho-pathology

has an attraction of its own, greater perhaps than that associated with any other branch of medicine. It affords scope for practicable use to humanity at the moment, and a prospect of help towards the building up of such a knowledge of disordered mentality as will in the future tend to the erection of beacon lights to prevent many wrecks on the dark seas of depression and decay. Psychiatry has but comparatively recently come out of the land of bondage. Surgery had its dark days of pre-anæsthetic torture; medicine its time of drastic purgings and exhaustive bleedings; insanity its long era of revilings, chains and manacles, its agonies, its crucifixions, man the executioner, the mind of man the victim—no executioner more cruel, no victim more hapless. Let us thank God we live in times when these horrors are but memories, when reparation, tardy though it be, is made with the generous compassion born of regret, when we see our afflicted fellows no longer sneered at “for leaning all awry,” but guided and helped along by a brotherly clasp. The members of this Association are the privileged ministers of this Christian spirit. More than half a century ago, when President of our Association, Prof. Laycock claimed that “a true mental science is in accordance with the fundamental principles of a Christian religion,” and I feel that is no less true to-day, and that in its study and application you are no less zealous. It may be remarked that I have used the term “asylum physician” in preference to the term “specialist,” “alienist,” or “psychiatrician,” as I feel that such titles have tended to keep up the unwarranted and inexcusable estrangement which to a great extent has existed between the physicians engaged in general medical practice outside and inside asylums, though disease is everywhere identical. Bodily disease is essentially the same in all individuals—cancer for instance, in its many varieties is a disease affecting *structure* all the world over. Mental disease likewise, though essentially the same in its complex basis, differs in the protean manifestations of *function*, not only in nations, as we have already seen, but in varieties, which are again modified by the temperaments of individuals. In this respect the clinical aspect of mental disorder differs from all other disorders, which presents practically the same syndrome at all times and in all places, and it goes to prove that a solely material basis does not explain the phenomena. Hence the clinical side of insanity requires constant study to be of scientific value, for it is no less scientific than laboratory investigation. To determine the nature, sequence and groupings of the symptoms of mental disease is of the highest practicable importance, and constitutes an essentially scientific contribution to medical science. Psycho-pathology directed by a knowledge of normal psychology,

and with a due appreciation of the very wide expansion of the latter, will be one of the greatest, if not the greatest, helps in the elucidation of the problem of disordered mentality. Thought is life, even when disturbed in function to a pathological degree; the cause of the disturbance is more likely to be discovered by and in a living mind than by the sole observation of dead matter. If the solution be found it is likely to be the product of a triple alliance between workers in psycho-pathology, psycho-physics and bio-chemistry.

The Thyroid Gland in Bodily and Mental Disease. An Address with Lantern Demonstration. By Sir FREDERICK MOTT, K.B.E., LL.D., M.D., F.R.S., Lecturer on Morbid Psychology, University of Birmingham; Director of Course of Psychological Medicine, Maudsley Hospital.

THE subject which I intend to bring before you to-day mainly relates to the thyroid gland, a part of endocrinology I have been interested in for some time past.

Some time ago, before the war, in conjunction with Dr. Brun I investigated the central nervous system of three fatal cases of myxœdema, and found marked chromolytic changes in the ganglion cells of the medulla, especially of the vagal nuclei. Subsequently I was able to examine the cortex of the brain and the spinal cord of four other cases dying in Claybury Asylum, and they showed the same chromatolysis of ganglion cells; one in particular, which I shall show you a lantern-slide of to-day, exhibited this change in a very marked degree, not only in the medulla but also in the cortex. There was so much dementia in this case that the doctor who had sent it in from outside believed it was a case of general paralysis, but the fluid and blood when examined showed a negative Wassermann reaction. Moreover, the changes in the brain were not at all like those of general paralysis. It was a very severe case of myxœdema which had been undiagnosed and neglected, and extreme neuronc changes had occurred in consequence.

After that I was very interested in the question of the endocrine glands in mental disease. I was fortunate enough later to get the help of Dr. Kojima, a Japanese medical man, who is now Deputy Director-General of the Japanese Navy, to work at this subject in conjunction with myself. I made the *post-mortem* examination in 100 cases dying at Claybury and he very carefully weighed all the endocrine glands, and the whole results of his examination were published by him in the seventh volume of the *Archives of Neurology*