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FORMERLY OF THE NEW YORK CITY ASYLUM FOR THE INSANE, WARD'S ISLAND.

ONE of the disputed points in the history of insanity is classification. Single symptoms, causes or modes of manifestation are taken to signify distinct types of disease. Some writers, and medical superintendents of asylums in their reports, go beyond this even, for they give diseases, apparently evolved from their internal consciousness, which are neither acute, nor chronic, have no ætiology, pathology nor mode of manifestation, but stand alone, sublime monuments to the scientific use of the imagination.

The principle laid down by Voisin in his "Clinical Pictures of Insanity," that classification to be rational must be founded on the logical association of the clinical symptoms, the ætiology, and the pathological anatomy is the only one, as yet offered that is justifiable on any ground, than that of mere hypothesis. Such a principle may give rise, without doubt, to many new divisions of insanity, but even then they can scarcely be more numerous and more unwieldy than the divisions of the much lauded system of Skae. This principle has been independently adopted by a German observer, who is engaged in the clinical researches similar to those of the French psychiatrist, Doctor Kahlbaum,* medical superintendent of the Private Asylum at Görlitz, Prussia, to whose observations are due the recognition and clinical demarcation of the subject of this paper.

The first volume of his recently published work is devoted to the consideration of the form of disease in question. He claims that the distinguishing characteristic is an irregularity, or as he phrases it, an insanity of

*Die Katatonie.

tension, mental and muscular, whence the name Katatonia. His conclusions (which have been supported by observations of Meynert, Westphal and Von Kraft-Ebing, Lafenauer, Donkersloot and Hecker) are, that Katatonia is a distinct form of insanity, having its own clinical history. Maudsley under the insanity of pubescence, and Bucknill and Tuke under choreomania, have noticed some of the individual symptoms, but have drawn no conclusion therefrom. Foville* in his discussion of Katatonia splits on the rock of looking only at a single symptom. The first sympton is like that noticed in the inception of other forms of insanity, a change in the temper of the individual. It presents at times well-marked motions of rhythmical character, always under the control of the will. In this respect, while bearing some resemblance to, it is very distinct from chorea.

Another characteristic, but one which is not noticeable, unless the case be observed from the inception to the close, is its cyclical character, maniacal, melancholic and cataleptoidal conditions alternating with more or less imperfect convulsive attacks; there are also pathetic delusions of grandeur, and a tendency to act and talk theatrically. Erotic manifestations of some kind frequently occur, and, as is usual under such circumstances, the patient's ideas have a religious tinge. At any stage, as in other nervous diseases, remissions, or as is claimed by Kahlbaum, complete recovery may occur. If the case is to end unfavorably, periods of excitement and stupidity recur, with more and more frequency, and the patient dies, with terminal dementia. The clinical history is best illustrated by the following cases:

Case I.—T. R., age 36, policeman, single, common school education, intemperate, as were also his parents. The patient had been a masturbator, and had indulged in sexual excess. He was at first melancholic, subsequently maniacal, but recovering therefrom became what his fellow-policemen called "stuck up." His temper changed

*Annales Medico-Psychologiques, 1878.

from good humor to irascibility, and asylum treatment was at length rendered necessary. He was admitted to the New York City Asylum for the Insane, March 17, 1873. A week previous he had gone to church, but soon returned, saying he had been followed by droves of dogs. He was a tall, powerful, good humored man, and though he had asserted he would not commit suicide he had cut off the tip of his ear in an attempt of this kind. He was somewhat subdued in manner, and had hallucinations of sight and hearing. The day previous to admission he was affected with spasm of the muscles of the extremities. Five days after admission he manifest delusion that he had committed a great crime, and refused food, but said: "This is not a penance for the crime." He require artificial feeding for three days, took food voluntarily on the fourth, and again refused it on the fifth day. A period of excitement then occurred, and he became a subject of hallucinations, differing from those he had on admission. After treatment a short time with opium and hyoscyamus he grew quiet and took food voluntary, but very suspiciously. In about a week after, a spasm of the muscle of the neck, followed by slight unconsciousness and slumber, occurred, the pupils dilating widely, and so remaining for a few days. Two weeks after, he had very sluggish movements of the lower extremities, bearing a suspicious resemblance to functional paraplegia, but this was really an *incomplete* cataleptoid condition, involving also the muscles of the neck and upper extremities. The patient opened his mouth, and performed other simple actions of that nature; these, however, were not ideational, but sensori-motor acts, as his attention to the subject was nil, and he was in a peculiar emotional state. That all the mental faculties were not in abeyance was shown by the fact that he involuntarily raised his hands in an attitude of supplication, or as an acknowledgment of a favor just received. His pupils responded to light, and the organic functions were performed as usual. This condition continued for three days with very little change, except that when asked

to perform a simple action the request would be obeyed, and the action continued indefinitely in an automatic way.

Five days after the beginning of the condition just mentioned, the patient had a rapid, feeble pulse, the beats of which ran into each other and did not correspond with the heart's action, which though rapid, was otherwise normal. His eyelids and lower extremities soon became œdematous and the cateleptoid condition disappeared. The heart's action grew more irregular, the first sound being alone audible, and accompanied with a loud, blowing murmur heard at the base. Pulse one hundred and thirty-two and more rapid in the neck than at the wrist; respirations were increased, the lungs and temperature being normal. The heart's action soon returned to its normal condition, and the murmur disappeared. The treatment was directed to the alimentary canal only. The patient then became entirely unconscious as to his surroundings, though taking food and performing other actions, involving only the organic functions normally, and so continued for about a week. He then began to have tonic contractions of the muscular system, followed by lessening of the œdema which finally disappeared. The cataleptoid condition then returned and was accompanied by considerable waxy mobility. Two days after, his muscles were extremely rigid, and he remained apparently unconscious for sometime. One morning he suddenly spoke and being asked his reason for not speaking before said, "They told me not to," and when asked who told him not to, replied "God and others," and began to weep.

The following day he had a return of the cataleptoid condition in which he remained for some time. These alternations continued for three months, when he became suddenly violent, tore off a bar from the window and tried to make his escape. This excitement continued three days, the patient then passing again into the cataleptoid condition, on emerging from which he was markedly dignified, and very formal in conversation. This manner of speaking and acting continued

for three months. He then had another cataleptoid relapse, succeeded by an attack of melancholia attonita. Then followed a condition during which his pupils at first contracted and then dilated, his left hand contracted firmly, and from it a quivering motion extended over the left side, and gradually involved the entire body. The irregularities of circulation formerly observed once more appeared, and as before went away without special treatment.

Melancholia attonita became the predominant condition, accompanied, however, by increased susceptibility to external influences. This remained four months, and was followed by a cataleptoid condition with much waxy mobility. While in this state he was found to be developing phthisis. The disease ran a rapid, somewhat irregular course, terminating life, July 22, 1875, twenty-six months after his admission to the Institution.

The details of the post-mortem were as follows: Thoracic cavity; lungs the seat of tubercles, some undergoing softening, others calcification; remains of old adhesions in the pleuræ. Heart, normal. Abdominal cavity; the liver was slightly cirrhotic; kidneys, normal; the mesenteric glands tuberculous, and undergoing same changes as the lungs; spleen congested and somewhat enlarged; the intestines somewhat congested and inflamed. Head-scalp thick; cranium normal, with the dura-mater adhering to it in patches. There were firm coagula in the veins and sinuses. The arachnoid, especially over the fissure of Sylvius, was very opaque; the prontico-chiasmal lamina were very dense, and a pseudo-membrane was formed beneath. There was dullness of the membrane of moderate character between cerebellum and medulla oblongata. Epithelial granulations present in a rudimentary condition, pia-matter removable from cortex except over frontal lobe. Cortex pale, a decided sinking of the surface of certain gyri below neighboring convolutions. There was a fusion of the opposite sides of the anterior cornua of the lateral

ventricles. Cysts of choroid plexus were also present. The first peculiarity noticeable in this case is its cyclical character. The tendency to act and speak theatrically is not so prominent. While this peculiarity has perchance attracted the attention of many alienists, it has been regarded as a curious fact, and dismissed to the limbo of unrecorded observations. It is a peculiarity likely to attract attention from its occurrence in the comparatively ignorant, and with other prominent symptoms is well illustrated in the following cases:

CASE II.—W. H. G., aged 26; colored, laborer, married, intemperate and syphilitic. Mother had been insane, but recovered. The patient one day while at work fell down suddenly, and his face and arms began to twitch; from this he soon recovered, but in two months became much depressed, and was placed in the City Lunatic Asylum, where he soon became maniacal and violent, which condition was followed by a period of depression with hallucinations. He suddenly refused to eat, and soon after passed into a cataleptoid condition, from which he emerged one morning; said he "was equal to any white man," and spoke very precisely. He was afterwards taken out of the Asylum by his wife, and December 11, 1871, two months after this was readmitted, and after having remained two months was discharged improved. He was readmitted during 1874, then in a condition of melancholia attonita, out of which he gradually passed. When speaking he always observed great precision, and if he supposed the expression used was not correct, he would alter it until he found one that might with propriety be substituted for it. He remained in this condition till July of that year, and was again discharged. He was readmitted March, 1875. Held his head up in a very consequential way, and prefaced every reply to a question by the phrase, "I do not doubt but what." "What is your name?" "I do not doubt but what it is William Henry G." How old are you? "I do not doubt but what I was born in the

year 1838, so my mother said." Where were you born? "I do not doubt but what I was born in some part of the world." What part? "I do not doubt but what I do not know what part." His memory was somewhat deficient but not materially so, as he remembered that he was there before, that he went out on a furlough, and the physician's name. He was well built and comparatively strong, and while speaking wrinkled his face very much; this was somewhat of a sensori-motor act, and under the stimulus of some emotion, at variance with his "verbigeration," disappeared. Patient retained his peculiar manner of speaking and acting, but grew less inclined to walk about, would remain for hours in an upright position, staring straight ahead at vacancy. He manifested moderate erotic desires.

Case III.—P. D.; Irish; aged 28, of intemperate habits, unmarried, of very ordinary education. The attack of insanity was preceded by dizziness. He entered the Asylum in a condition of melancholia approaching catalepsy. He brightened up somewhat in a few days, but was averse to conversation. About a week after admission he suddenly became communicative, said he had wasted time and opportunities, had led a loose life, and was now suffering the pangs of remorse. Excessive drinking and the loss of near friends were the causes he assigned for the present attack, of the nature of which he was quite conscious. He had then apparently no delusion, and was coherent. This mental condition continued for two months; there was no delusion present, and the mental tone was that of depression. Every idea expressed had that tinge. He said: "I have suffered blank disappointment in life. Men whom I expected were just and honest have been found wanting." He declared at the same time, with strong emphasis, that he had had no disappointment of the affections, as his ideas did not run in that channel. When asked to give the loss of friends that he had suffered in detail, said, "A host of tender emotions are thus raised that had better be quieted."

The abstract sentiments were regarded by him as more sacred than the affections. The peculiar sensibility of the brain to depressing influences was undoubtedly heightened in his case, but not so much as to prevent a pleasurable feeling when excited by other emotions. He was very formal in conversation, and though his condition would not in a man of culture necessarily be morbid, yet in his case it was, because of its spontaneous origin, and of its being purely subjective. His proud semi-dignified, semi-melancholic expression, varied by an irregular play of the muscles concerned, was a fair index of his mental condition, for he was unable to give the bond of association between the tender emotions and the causes exciting them. His treatment consisted in hyoscyamus, cannabis indica and whisky. About a month after the commencement of this treatment, the patient said he had found food for thought and wisdom, in the stability of the Christian religion, but dreaded events would go wrong in the future. When asked "what events" could give only his probable failure to obtain work. He remained a week in this state, then refused food and passed into a cataleptoid condition, with incomplete waxy mobility and irregular movements of the fingers. This lasted a week, he then spoke a few words, but continued to decline food, refusing to explain his action. He required artificial feeding for two days, then took food voluntarily and spoke freely; said, "that he was the son of a Portuguese noble, who had gone to discover the source of the Nile, and who was interested in literary pursuits, having written Virgil." Symptoms of phthisis made their appearance, and the patient being placed under tonic treatment improved somewhat. A month after cataleptoid conditions alternated with maniacal attacks, which were accompanied by hallucinations of sight. The patient died of phthisis a year after the first appearance of the symptoms. In this case the speech-making tendency was well marked, and, from the imperfect training received by the patient in early life,

was very noticeable. This symptom, with a tendency to the use of peculiarly formed words, observed in one of Kahlbaum's cases, is to be found in a greater degree in the following case:

Case IV.—J. E., aged 26; single, molding-maker, fair education, intemperate. Admitted to the New York City Asylum for the Insane, September 23, 1874. Five weeks previously had been arrested for intemperance, which caused him to become very much depressed. After his release went on a spree, and while intoxicated fell down a cellar, striking on the back of his head. Shortly after this he said that he heard voices threatening him; that every thing was turning round. In obedience to these hallucinations, he cut his throat, fortunately avoiding any important vessel, and causing only a flesh wound. On admission the patient seemed to have considerable difficulty in talking, opened and shut his mouth as if speaking, but did not utter a sound. He stared at everything with a very contemptuous expression. On the following day he spoke freely, but without any apparent difficulty, and said that he had attempted suicide because he heard voices threatening him. This communicativeness lasted only a short time, and was then replaced by the condition present on admission. Two days after he appeared to realize his condition, and said that intemperance and the injury to the head were the chief causes of his mental trouble, which he recognized. For a fortnight he remained much the same. He had a defective remembrance of events in the immediate past, and exhibited a tendency to repeat a question several times, in a confused manner, before answering it. A week after this he cleared up markedly; said he had masturbated from the age of fifteen, and drank as many as thirty glasses of beer a day. The confused appearance and defective memory returned, and were accompanied by considerable depression. In a fortnight the condition of the patient was the same as at the time of his admission. Five days after he said he saw blood on everything he looked at. In the course of a

month he became very stupid, took off and put on his clothes purposelessly, and at length passed into a cateleptoid condition with waxy mobility, but offered very slight resistance to any attempt at movement. Artificial feeding was required for two days. He then took food voluntarily, spoke occasionally, but showed much confusion of ideas. A month after he had improved very much, and expressed a desire to go out and attend to his affairs, but had no recollection of his late condition, and the circulation in the extremities was very sluggish. He continued to improve, but was not considered recovered, when six months after, his friends, against the advice of Dr. Macdonald, the medical superintendent, removed him from the asylum. He was brought back in six days, and then said "that his father was a witch and his mother also, she having poisoned his food and bewitched the house, causing what he is unable otherwise to account for, the occasional stopping of the house clock on the mantel-piece." He had at times returns of the cataleptoid condition, with maniacal alternations, followed by a tendency to express the contrary of any proposition that might be made. These statements were intermingled with diatribes against the other patients, and expressions indicating a belief in his own importance. He made gestures sometimes indicative of devotion, but more frequently of contempt. Soon after the appearance of the last mentioned symptoms, he spoke in German about religious matters, but this gradually changed to remarks about a girl he had seduced. Three days after he became maniacal, relapsing in two weeks into a cataleptoid condition, followed by rhythmic movements of the fingers. He now began to speak (in English,) and said, "I am Arminius and have swallowed J. E." He was very consequential, resisted any intrusion on a fancied privilege, and once knocked down a fellow-patient for sitting on the same bench with him. A period of excitement then appeared, followed by a relapse into the cataleptoid condition. On emerging from this, the rhythmic motions once more

appeared, followed by incessant talking in German, implying that his family descent was noble, and making a semi-demand, semi-appeal for the regard due him on this account. A succession of the same phenomenon as before then occurred, but the increased talking was in no known language. It was however, articulate, and he made many attempts at oratorical display. The patient still remained in this condition when I left the asylum.

In the four cases thus far given there is a family likeness, modified it must be confessed, by surrounding circumstances, but such as to leave no doubt that they belong to the same clinical type. Forty-six cases have come under observation having the same irregularity of mental association and cyclical character. One of the cases came to the asylum at the time of, and apparently through the excitement of the Moody-Sankey revival. On examination of the case, however, it appeared that the father had died from phthisis; the mother also had the disease, and the patient himself had had meningitis at the age of ten, that he became insane therefrom, but recovered within a year and remained in mental health for seven years after. The fact of this case occurring during religious excitement is not peculiar, as that has been assigned as the exciting cause in many instances.

All the forms of religious belief have furnished cases of this kind, and they have occurred during a polytheistic reaction from Christianity. Kahlbaum claims that the disease is very rare. My own conclusion from the facts coming under observation is that while the statement is true, many cases are passed unrecognized. The number coming under observation at the New York City Asylum was about two per cent. of the whole number of patients admitted.

Many cases are discharged from an asylum during a remission and are lost sight of, but return or enter other institutions with peculiarities that puzzle the medical attendant in classification. Such has been the experience with a few cases discharged at this stage, preceding my

connection with the City Asylum, and which subsequently returned. The peculiarities of these cases are so frequently described in connection with the insanity of pubescence and menstruation, that there is little doubt that the disease, though not so frequent as general paresis, is entitled to a distinct place as a form of insanity so far as frequency of occurrence gives any right to the same.

Ætiology is always an obscure, and very frequently a disputed point in the history of insanity. It is set forth at great length in asylum reports, but he who expects to derive positive information on the subject from the statements therein contained, will be frequently disappointed. An English asylum report, for example, gives as a *cause* "fear of imaginary enemies." Either the mental or the physical influence is ignored, or both are so combined as to lead to erroneous deductions. Forbes Winslow's ten thousand cases of insanity in the United States caused by spiritualism is a recent example, and has been much commented upon. The only way to arrive at any definite conclusion is to take such facts as are given concerning the patient's ancestry habits, age, education, civil condition, mental peculiarities, surrounding circumstances, the presence or absence of physical disease and of traumatic influences, and then to deduce the logical relation of cause and effect.

Examination of the cases coming under observation, in accordance with this principle, shows that in fifteen cases, one of the parents was phthisical and a paternal uncle died of hydrocephalus; in two, the mother died of phthisis and a maternal uncle died of hydrocephalus; in five, the father was intemperate; in five, syphilitic; in two a maternal first cousin had been insane; in four cases the mother had been insane, and in another an aunt was idiotic. Twenty-five of the cases were intemperate; ten took stimulants moderately, and eleven were abstinent. Thirty-six of the cases were below the age of thirty; eighteen had receive the ordinary common-school education, ten a high-school education, twelve a liberal, and six the ordinary

education amounting to an ability to read and write. Thirty were single and sixteen were married. Thirty-four admitted the practice of masturbation; of these twenty were in addition addicted to sexual excess, as also were six of the remaining twelve. Forty were religiously inclined; three were opposed to religion, not however from a disbelief in doctrine, though they lived in defiance of its moral code; the remainder came under the head of what the religious press call indiffentists.

Thirty were somewhat quiet and reserved, ten were jovial and pleasure loving, and of the remainder little definite information could be obtained. Concerning thirty it was ascertained that they had been what was called by their parents and relations, very studious, the study consisting in the perusal of works of fiction, sensational and biographical. The patients in ten cases were in good circumstances; twenty belonged to the lower middle classes while the rest were from the lower class; in ten cases the patient had in early life meningitis; in fifteen there was some evidence of scrofulous disease; in ten no history of preceding nervous or other chronic disease could be obtained. Of the forty-six, but one gave a history of rheumatism, and that was not articular but muscular. Six had received injuries to the skull which, however, were said to be of slight character. Fifteen were Anglo-Saxons, fourteen being Americans; ten were Germans, six being American-German; fourteen were Irish, eleven of these being Irish-Americans; one was an Italian, one a Bohemian, two were Hebrews and three negroes.

The first deduction following from the facts already given, is that the inheritance of a scrofulous diathesis acts as a great predisposing cause, a conclusion borne out by the pathology of the disease. Age appears also to act as a predisposing cause. The influence of stimulants either as an exciting or predisposing cause, seems limited; the most logical conclusion being that since the proportion of those abstaining from stimulants is relatively greater in this than in the other forms of insanity, therefore the

influence of alcoholic stimulant is antagonistic rather than favorable to the production of the disease; in forming this conclusion, however, the prevalence of intoxication among the class from which many of the patients are derived, is taken into consideration. The influence of education can best be seen in its effects, rather than its amount, it being in most cases regarded by the patients, not as an end, but as a means toward an end; in short a property entitling the possessor to certain privileges. These effects of education led to depression on the part of the patient, because of his not receiving the consideration which he conceived its possession entailed. The determination of the influence of masturbation, and whether it is not an effect, is a question that requires some discrimination to decide. The practice, however, aided in reducing the already diminished vitality of the patient, and therefore, in adding to the existing depression.

Most probably masturbation was to some extent an outcome of the general morbid condition of the nervous system, and aided in increasing this. The influence of sexual excess was of a like nature, as the disease occurred at a period when the sexual passion was in process of development. Religious excitement like the sexual element, with which it is in close alliance, was both an effect and a cause. In individual cases coming under observation, there have been two phases, first, the patient's excessive devotion results in claims to extraordinary religious privileges; secondly, a depression is produced during semi-lucid periods by the evident contradiction between the duties of religion and the strong sexual desires, which often control the conduct. The influence of the literature usually perused by this class of patients, is very obvious from its effect on normal minds, leading to a luxurious day-dreaming propensity, and a disinclination to active exertion whether mental or physical. On a morbid condition like this, peculiarly suited for the reception of such impressions, the result must be much intensified, for what in the normal con-

dition would simply be a day dream, in the disease, is converted into a delusion.

The influence of surrounding circumstances is perhaps nowhere stronger than in the United States. On the one hand examples of self-made men are held up as incentives to effort for high positions, while on the other the absence of wealth is regarded as a strong evidence of incapacity. Traumatic causes appeared in these cases to have had a slight influence in modifying, rather than producing the disease, which had existed before the beginning of their action, One of these cases has already been cited. The most frequent predisposing cause, as already stated, seems to have been the inheritance of a scrofulous diathesis; the other influences acted often as exciting causes, though at times they only increased the predisposition to the disease.

The post-mortems given by Kahlbaum show evidences of a healed up hydrocephalus and a basilar meningitis, which, the post-mortems I have made, confirm. Meynert's deduction from Kahlbaum's cases, is that the disease has been preceded by a patho-meningeal process, located at the base of the brain, and over the fissure of Sylvius. My own opinion from the cases examined is, that the disease has been most frequently preceded, during infancy, by a basilar meningeal process of a tuberculous character. In a patho-psychological aspect the localization of the procees would be over the base of the brain, in the fourth ventricle, and over the fissure of Sylvius. According to Dr. O. Schultze, the motor symptoms in basilar meningitis, are due to an acute spinal affection, occuring at the same time as the cerebral affection. Leyden maintains that tubercular, spinal and cerebro-spinal meningitis, the existence of which has been but little suspected, is certainly possible, and indeed, highly probable. Magnon, Lionville, Hayem and Schultze, all agree that this affection is very frequently present. Schultze concludes that the stiffness occuring in the course of so-called basilar meningitis, with the contrac-

tions of the muscles supplied by the spinal nerves, do not have their origin in the brain, but are due to the affection attacking the spinal cord; that these symptons occur on account of the progression of the inflammatory process from the membranes, by means of the vessels, to the nerve bundles; and hence, partly from the inflammatory irritation of the nerve bundles themselves, and partly on account of the irritation of the spinal cord in which myelitic changes are found. As has already been hinted at, one point raised by the pathology, is the question of recovery from tubercular meningeal processes.

From the post-mortem already given, and from others coming under observation, my opinion is that tubercular meningeal processes are more frequently recovered from than is generally supposed; that in reality many of the cases of so-called hydrocephaloid disease are really hydrocephalus. This inference is further sustained by a somewhat limited, though conclusive experience with children. I have seen four cases recover and two die, the symptoms in all being in no way distinguishable from those given as characteristic of hydrocephalus. One case which died, and one of the recoveries belonged to the same family, in which there was a strongly marked tubercular taint, as was also the case in another family which came under observation.

These views regarding recovery from tubercular meningitis have, to a certain extent, the support of Hasse, one of the best authorities on the subject. Though the pathology shows that tubercular meningitis may be recovered from, still the brain is not restored to its normal condition, but is so far damaged as to yield when a strain is applied. The patient, of whose spinal cord and brain this microscopical examination was made, was thirty years of age; intemperate, of ordinary education. He made well marked rhythmical motions, had maniacal and incomplete cataleptoid alternations, followed by theatrical talking. His spinal cord, as will afterwards appear,

showed changes which would seem at first sight to confirm the opinions of Lionville, Magnan and Schultze, but in reality are opposed to the conclusions of these observers, being, not as might be surmised, a cause, but an effect of the cataleptoid alternations. The disease had existed at least two years, and the patient died from tubercular enteritis.

Post-mortem.—Body emaciated, cadaveric rigidity well marked; lungs, seat of tuberculous deposit; heart, normal; tubercle of the intestines and peritoneum; spleen, congested; kidneys, normal; liver, cirrhotic; head, dolichocephalic; scalp, thin; cranium, thick and not adherent to the dura-mater, which was normal. Sub-arachnoid space filled with a number of brownish flakes of a gelatinous consistency; most of these drained away with the cerebro-spinal fluid, but a few were quite firmly adherent to the underlying pia-mater; minute blackish or dark brown grains were disseminated through these, probably exudative products.(?) Arachnoid of base, pontico-chiasmal lamina, perfectly healthy, clear, and transparent; cerebello-medullary lamina, opaque, with whitish, dense bands. Sylvian fissure, slightly opaque. Pia-mater along the larger, and in some instances along the finer vessels, minute pale yellowish, whitish, and reddish bodies were found, supposed to be tuberculous. In the Sylvian fossa itself, over the island of Reil there was a fusion of the leptomeninges.

Blood vessels. A whitish spot, measuring one and one-half inches in every direction, existed on the under surface of the basilar arachnoid; the large veins were filled with dark continuous coagula, or with chains of whitish connected thrombi, such as occur in the ultimate agony, when prolonged, in exhaustive diseases. The fine network of vessels was injected, and this condition was especially well marked over the island of Reil. Convulutions, few, simple and typical. The white substance of the centrum ovale of Vieussens, of the pedunculi, cerebellum, ganglia and tegmentum, as well as of the medulla

and pons, showed numerous punctæ vasculosæ, all of a strikingly venous character; in every direction the veins, and these alone, were filled with blood. This was also true of the cortex, and was nowhere better pronounced than in the gyri-operti of the island of Reil. The claustrum which I have never before seen the seat of any marked injection, was filled with distended venous channels and puncta venosa. The gray ganglia at the base of the fourth ventricle, which depend for their color on the degree and kind of injection, as well as on the pigmentation of their cellular elements, appeared semi-transparent and cerulean in tint. Spinal cord; membranes healthy, no deviation from the normal standard; cord itself decidedly anæmic. Ventricles; a mucoid substance covered the parts at the base of these cavities, particularly well marked at the calamus scriptorius of the fourth ventricle. Over the stria cornua of the left side, the ground glass appearance was visible; this passed gradually into the mucoid substance on either side. Dilatation of the posterior cornua of the lateral ventricles existed, this extended backwards, and there was adhesion of the walls, so extensive on the left side as to cause the complete separation of the apex of the posterior horn from the body of the ventricle, giving it the appearance of a cyst in the occipital lobe. There was a beautiful venous injection of the ventricular lining.

It may be said in passing, that Meynert, two years before Kahlbaum, described katatonia, called by him a peculiar form of melancholia attonita, as "characterized by a series of fluxionary excitations, toned down by coexistent cerebral pressure, microscopic exudations, ventricular dropsy, and (perhaps) premature ossification of the sutures. From these would result forced and theatrical activities on the part of the patient. The convulsive state indicates the control of the irritative factors; the cataleptoid condition, the triumph of the depressing factors. The ideas of grandeur, following upon stupor, are the results of ideas previously caused by fluxionary conditions."

As the microscopical examination is perhaps the first as yet made in this class of cases, it was of importance that the observations should be under the supervision of one accustomed, not only to observe, but also to interpret observations, and Dr. Spitzka kindly consented to make it. The results obtained are certainly of a nature to throw some light on the clinical manifestations of the disease.

The mucoid matter on the floor of the fourth ventricle was found to consist of an accumulation of round cells, not surpassing a red blood corpuscle in diameter, some nucleated, others not; all were perfectly colorless. Interspersed among them were larger elements, identical in every respect with white blood corpuscles.

Isolated bodies of an oblong shape with a distinct nucleus and pellucid protoplasm were noticed. All these were imbedded in a granular mass which showed a formation of imperfect fibrils. The arachnoid exudation consisted of the same matters together with a fair proportion of red corpuscles, large flakes of pigment and round spheres of a proteine nature. The pia-mater of the convexity exhibited numerous small nodules, most of which were molecular, others calcareous, and a few contained large and small polynucleated cells; these nodules were periadventitial and hardly visible to the naked eye. The cortical substance of the island of Reil showed a marked increase of the nuclei of the neuroglia. The ganglionic cells, both pyramidal and fusiform, were normally contoured, processes well developed; protoplasm healthy, in some cases diffusely pigmented, and nucleus round and clear. Free lymphoid bodies were accumulated in the pericellular spaces in prodigious numbers, in one instance, no less than twenty-three of these cells could be distinguished clustering around one pyramidal nerve-cell of the third layer. Frequently the nerve-cell was altogether hidden from view by such cell groups. in this respect the island of Reil presented marked regional differences. It was found that areas varying from a line

to an inch in diameter were the seat of this appearance, while a similar, larger or smaller adjoining area was either less involved, or perfectly normal in this respect. The transition from the affected to the healthy areas was sudden.

The coats of all the vessels were entirely healthy, presenting no deviations from the appearance of cerebral vessels in sane subjects. The arteries were empty, the veins and many capillary districts filled with blood corpuscles; these latter were individually distinct, not compressed or fused by crowding as has been described to be the case in the stasis accompanying general paresis.* This engorgement was most marked in those areas, in which the accumulation of lymphoid bodies was farthest advanced. The periadventitial space was filled with similar bodies, in the case of the vessels referred to. The same appearances in a lesser degree were noticed in the operculum, and the convolutions bordering the anterior part of the great longitudinal fissure. The remainder of the cortex cerebri appeared perfectly healthy. The accumulation of lymphoid bodies was still more marked in the nucleus lenticularis, than in the claustrum and island of Reil. The cerebellum, olivary bodies, nuclei of the cranial nerves, corpus striatum, thalamus and corpora quadrigemina, presented no deviations from the normal standard.

Spinal Cord; the nerve-cells of the gray cornua were perfectly healthy, a delicate granular material filled the dilated pericellular spaces; central canal open. The white columns showed everywhere an increase in the number and thickness of the connective tissue septa, and of Fronemann's cells. With this the medullary sheaths had undergone a slight degree of atrophy, while many axis cylinders were hypertrophic.

These conditions were most marked in the anterolateral columns of the cervical portion of the cord, although the posterior were not free from it, here it was limited to the

*Spitzka "Patho-Psychology of Progressive Paresis." Journal of Nervous and Mental Disease, April, 1877.

peripheral portion, and a small area at the base of the posterior intermediate sulcus. The anterior pyramids of the medulla oblongata exhibited the same change as the spinal cord.

CONCLUSIONS.*

1. The pia-mater presented signs of an old tubercular process which had become latent.

2. The encephalon was the seat of a passive venous engorgement, which had been of long standing. No mechanical obstruction to the venous outflow could be found as the cause of this engorgement, and we must therefore suppose it to have depended on vaso-motor anomalies.

3. The gelatinous exudation of the arachnoid and pia-mater can not be considered an inflammatory product, but rather as a simple filtration of molecular matter and blood discs through the walls of the distended venous channels.

4. The accumulation of lymphoid bodies per diapedesis around the ganglionic cells was, in like manner, the result of the vascular stagnation. The fact that certain cortical areas were more severely affected than others, is to be attributed to peculiarities in the distribution of certain venous channels.

5. This accumulation of lymphoid bodies, of whose identity with blood corpuscles, both red and white, particularly the former, I am fully convinced occurs to such an extent only in one other cerebral condition, namely, that which accompanies the severer forms of typhus fever. The similarity between the pathological appearances of the cerebral cortex in katatonia and typhus is truly striking; the chief difference is that while in the former, certain parts of the cortex are, chiefly, if not exclusively, affected, in the latter the whole encephalon is involved equally. It should not be forgotten that a few of these bodies, one or two in the pericellular space

* American Journal of Insanity, July, 1877.

of one out of from twelve to a hundred pyramids, occur in health, but so rarely that they have to be sought for, and are not, as in this pathological condition, so numerous as to actually conceal the nerve-cells from view. In a lesser degree such an increase of the lymphoid bodies takes place in many forms of insanity associated with atrophy; their origin here is however different, as has been explained on another occasion.

6. No destruction or degeneration of the essential nervous elements, the cells and fibres, was to be found, for no importance can be attached to the diffuse pigmentation of a few of the pyramidal cells, as many subjects who have never manifested any symptoms of mental alienation, show the same condition.

7. The condition of the spinal cord and anterior pyramids, is to be considered as a mild grade of sclerosis, approximating senile sclerosis in character. In a patient of this age, such a change is unquestionably pathological. I am inclined to consider it as a degeneration due in part to malnutrition, and partly to disuse of the motor tracts, in consequence of the long continued and oft repeated cataleptoid conditions. In this it offers a parallel to Charcot's "sclerose laterale," as found in an old case of hysteric contracture, where the connective tissue hyperplasia, was not the cause of the contracture, but the result of the consequent long continued disuse of the motor periphery. If future autopsies should reveal the same appearances, I should have no hesitation in pronouncing the characteristic pathological conditions to be an inertia of the vaso-motor centers, whose consecutive injuries effects were concentrated on the parts lying at the depth of, and around the fissure of Sylvius. Every other lesion is to be considered as secondary or accidental.

Vaso-motor anomalies, as have been illustrated in some of the cases, do occur in the course of the disease, and are quite prominent features in its clinical history. It is probable, however, that the exudation on the floor

of the fourth ventricle exerted an influence in the production of these anomalies.

The symptomatic forms of insanity—mania, melancholia, etc., may be confounded with katatonia, since they all occur in the course of the disease. A differential diagnosis is, however, scarcely necessary here, the result being the same, as regards prognosis, as in the chronic cases.

Insanity of pubescence bears some resemblance to katatonia, but does not partake of the cyclical character of the latter disease, nor is there, unless complicated with epilepsy or chorea, any convulsive element about it. The delusions of the form of insanity occurring at pubescence are very vague, partaking rather of the character of those found in paresis, more particularly in the mental enfeeblement, the extremely stupid disregard of all conflicting circumstances, and the absence of any explanation; those of katatonia, on the other hand, are rather intellectual, and do not vary so indefinitely.

The katatoniac is consequential, but his dignity is not so obtrusively asserted as is the case in insanity of pubescence; the former likes to be left alone, the latter pushes himself forward. There is more or less simulation in both, but the victim of pubescent insanity grows indignant if detected; the katatoniac considers the detection a good joke.

Hystero-epilepsy* resembles markedly, in some symptoms, katatonia, but the general history of the disease is very different, and on this alone, rather than isolated symptoms, can a differential diagnosis be founded. Despite the apparent diversity, the delusions of grandeur may raise a suspicion of paresis, but the wide difference of physical symptoms will soon dissipate any doubt on the subject. Chorea complicating insanity may cause the confusion of it and katatonia, but the control of the motions found in the latter disease, and the cyclical phenomena will prevent a long continuance of the con-

*Hammond: "Diseases of the Nervous System."

fusion. Narcolepsy has only one symptom in common with katatonia, and even this symptom differs from the cataleptoid condition of katatonia in being a nearly natural slumber.

The prognosis according to Kahlbaum is good; as far as my experience goes moderately favorable. Ten cases out of forty-six having recovered, and of the permanence of the recovery of two of these I have my doubts. These contrasted opinions are not so contradictory as they seem, for though many, perhaps very many, of Kahlbaum's recoveries were remissions lost sight of, still his patients were in very different circumstances from mine, and were not compelled to re-enter the world during a remission with a damaged brain and endure the struggle for existence, under much the same adverse circumstances that led to their being placed under asylum treatment. The presence of a tubercular meningeal process need not militate against a favorable prognosis. However, taking everything into consideration, the prognosis should be guarded, not only as regards recovery, but as regards life, since katatonia *per se* is a disease causing death, and in addition the tendency to phthisis has to be taken into consideration.

The duration of the disease is from two to five years, depending on the hygienic surroundings and treatment of somatic affections. The treatment of katatonia is divisible into medicinal and moral The medicinal treatment should be, in a great measure regulated by the symptoms, and should be of a tonic character, as the katatoniac is always more or less debilitated. The motor disturbance points to the use of conium. Alcoholic stimulants have had at times what could be nothing less than a food value, and have aided in sustaining the diminished vitality of the patient. Stimulant enemata have been occasionally of service, and frequently prevented the return of a cataleptoid condition. The vasomotor anomalies seem to indicate the use of nitrite of amyl. I have tried this remedy, but not sufficiently long

to speak decidedly of its beneficial effects, although satisfied that it is of value. Ten cases have certainly improved under its use, and it has caused a pleasurable feeling in all cases of katatonia where it has been given. One of the cases already cited showed an increased tendency to active exertion and a less theatrical tinge to his words and actions. The case in which an immediate effect was best shown is the following:

CASE V.—E. S., age 26; clerk, American, unmarried, temperate in the use of alcoholic stimulants, no hereditary taint ascertainable, although the father and mother died young. During the year 1874, an enlargement on the patient's neck, which seems to have been of the thyroid gland, gradually disappeared, after which an alteration was noticed in his temper, which changed from good humor to moroseness; he then became much depressed, but soon grew maniacal, passed into a cataleptoid condition, during which he claimed to have an interview with the Deity; he was, on emerging from it, very precise and formal in conversation, and made rhythmical motions with his fingers. These conditions alternated with semi-lucid intervals marked by a morbid religious tendency. Three years after the first appearance of the symptoms, asylum treatment was rendered necessary by his violence. He was admitted March 23d, 1877, to the New York City Asylum for the Insane, was rather blank, but dignified in expression, and in poor physical health. He had had, just previous to admission, the delusion that his nerves were all gone, but when admitted was unable to continue a conversation for three minutes, without passing into a very complete cataleptoid condition. Three days after admission he was placed under amyl nitrite; in the course of an hour he became quite vivacious, danced a jig, insisted on indulging in boxing, talked clearly and connectedly, said that he had been very lazy and disinclined to do anything for his own support. He showed no trace of any delusion, and had no further return of the cataleptoid condition for two days, when the treatment with amyl was sus-

pended. In the course of the afternoon subsequent to its discontinuance, he had a prolonged cataleptoid relapse, followed by the same phenomena that marked him on admission. Treatment with amyl, was again resumed on the following day, since which time he has had no returns of the cataleptoid condition, although he once attempted to feign it, to avoid being bathed. He now has the delusion that he is to live forever, but is clearer in its expression, although somewhat vague as to details. He gives as a reason why he is to live forever that he is "all nerve." This privilege has been granted by the Deity to him as a special favor. He at length made a a good recovery. The other cases did not show as immediate improvement, although one who had been in a cataleptoid condition for three months before the administration of amyl, soon after its administration walked around and talked freely—and appears to have completely recovered.

Moral treatment, of course, in a great measure, resolves itself into the consideration of the question of asylum treatment. This is of advantage, as it affords a means of isolation from friends, always the most disturbing influence in treatment. Change of scene and travel, under charge of a sensible educated man, not a pedant, would benefit many, as it would enlarge the patient's ideas and stimulate him to a healthy tone of mind—in short, stir him up. If the case be a boy, and he has a doting, foolish mother, removal from her should be the first step in the treatment, as her sympathy would undo all otherwise beneficial measures; a remark that applies with equal, if not greater, force in the case of a wife and husband.

Balls and entertainments of a purely sensuous nature should be avoided, and all things of an intellectually stimulating nature brought as much as possible in contact with the patient. Faradization of the muscles of the chest, as a prophylactic against tubercle, is one means of treating probable somatic complications, to be recommended. The general treatment by tonics, etc., is of

course indicated in this and all other atonic physical conditions occurring during an attack of insanity. The preferable method of artificial feeding often required in cases of katatonja, is by means of a Davidson's syringe, the use of which is unattended with the danger that accompanies the use of the elastic but stiff tube of a stomach pump, or the misadventures that follow the clumsy funnel method of feeding. From the irregularity of the symptoms, which set at defiance the dicta of the forensic psychologist, it would seem as if the disease could easily be feigned. Apart, however, from the probability of a criminal being so keen an observer as to attempt feigning so complicated an affection, one symptom could scarcely be feigned with even the slightest probability of success, namely: the cataleptoid condition. The failure in the simulation of this symptom, with a close examination of his antecedent history, would soon detect any attempt of this kind. The crimes that a katatoniac would be likely to commit are murder, arson and rape. The murder in obedience to an hallucination, the arson for a similar cause, while the rape would be an expression of his excited erotic condition.

If these crimes, however, were committed during a remission, the patient should be held responsible as he would for the time being, be capable of acting logically on any conclusion arrived at in a logical manner. An instance where a form of disease somewhat similar, and perhaps, were sufficient history on the point obtainable, katatonia itself, has been brought under cognizance of law. This occurred in a fanatical religious organization in Germany. Two ministers of this organization believed they had received, during a cataleptoid condition, a command from God to kill a certain man and raise him from the dead. The former they succeeded in doing, but in the latter they failed. In this case which illustrates the circumstances under which crime might be committed by a katatoniac, the accused were declared irresponsible. Any person, however, who has been acquitted on these

grounds should be immediately sequestrated for the safety of the public.

Kahlbaum claims that katatonia can occur, and has occurred in epidemic form in France and Sweden. Influences ordinarily producing insanity in persons predisposed to mental disease, may cause a number of cases to appear at one time, but never to the extent of, or with the uniformity in symptoms characteristic of a so-called epidemic. And this uniformity is the suspicious point in the hypothesis of patho-mental epidemics, but is one that admits of a very rational explanation on other grounds than contagion.

Most probably the greatest number of victims in a so-called katatonia epidemic were cases of morbid impulse, simulating through a craving for notoriety, a few instances of katatonia that had occurred. It is a curious fact, however, that many of these epidemics, so-called, have occurred in regions subject to scrofulous affections.

PROSPECTUS FOR 1881-2.

THANKFUL for the encouragement and generous judgments it has received in the past, the ALIENIST AND NEUROLOGIST enters upon another year with a hopeful, and, it is believed, useful future before it. Its subscription list and the number of its contributors and pages have steadily increased since the day of its inception, till it now counts its friends and collaborators in all the States at home and in many Countries abroad. It will continue its endeavors to promulgate sound teaching respecting the nature and treatment of the Neuro-Psychic and Nervous diseases.

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