

# BRAIN.

JANUARY, 1880.

Original Articles.

## CHRONIC MORPHINISM.

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WHILE the progress of science is ever discovering new methods of combating disease, the advance of civilisation brings with it new enemies. Railways bring in their train spinal concussion, telegraphs develop telegraphic-cramp, and many valuable remedies become by their abuse the sources of new ailments. Such are the various forms of chronic poisoning, the prototype of which is chronic alcoholism, faithfully portrayed by Seneca. Specially worthy of notice in this relation is the continued abuse of chloroform, and opium and its alkaloids, more particularly morphia. It is different with nicotin, which is taken without the slightest evil effect by a large percentage of mankind; or even with arsenic. Chloroform and morphia differ from alcohol, inasmuch as the latter may be taken in considerable quantity without appreciable injury, so far as the nervous system is concerned; whereas the former two very frequently produce evil effects, and lead to earnest desire on the part of the individual to shake off the habit, which is at all times difficult and often impossible.

I will here confine my remarks to chronic morphinism, which is more common than chronic chloroform-poisoning. It

has to us a particular interest, inasmuch as quite an incredible number of our colleagues have fallen victims to it; and many have only just escaped. If medical men are charged—and it is to be feared, justly—with the propagation of this disease, owing to their carelessly, or for mere convenience' sake, leaving morphia and a subcutaneous syringe with the patient, it may be regarded as their punishment that the demon morphinism finds among them his favourite victims.

The number of cases hitherto published is not so great as to render unnecessary the description of others, yet they are sufficiently numerous to afford a tolerably accurate picture of the disease, and to indicate its treatment and prognosis.

As it is not my intention to write an exhaustive monograph on morphinism, I will content myself with calling attention to a few points, on the basis of my own and other observations, and in particular to those which at present are less generally known. The first commencement of the use of morphia is almost always some painful ailment; and then, as the pain continues, or even though it may have disappeared, the habit is formed, and more and more of the drug is demanded.

So began one of my patients, after traumatic injury of the sciatic; another in consequence of periostitis; a third (a physician) for toothache; a lady took to subcutaneous injections to allay violent pains in the sacrum caused by pelvic disease. In other cases, however, purely nervous symptoms lead to the formation of the habit. As is well known, we have in the subcutaneous injection of morphia a powerful weapon against feelings of fearful anxiety; so that states of melancholia, even of high degree, not unfrequently give way before it. Such intense anxiety and insomnia led in two of my patients to the use of morphia. But other nervous conditions lead to a similar result. Thus a lady exhausted by long-continued vomiting of nervous origin, found opium the only remedy of any avail. Though the existence of some painful affection is the chief cause of morphinism, yet there are others. A young medical man gave the following account of his own case. While he was attending the hospital, a patient was dismissed suffering from carcinoma of the stomach, and who had been for a long time treated with subcutaneous

injections of morphia. Next day the patient returned in a state of great excitement, and piteously begged for an injection, as otherwise he must die. This occurred in 1869, at a time when chronic morphinism and its phenomena were less known than now. As the physician was inclined to believe that the patient was romancing, he tried the experiment on himself to ascertain what the effects were. The result was that he formed the habit of morphinism, and never could overcome it.

With reference to the *quantity* taken, it is to be noted that it varies within certain limits, and may not exceed the maximum. The smallest quantities which can be taken continuously without any very marked effects, or reaction, are variable with the individual. I have under treatment a lady who has taken daily for more than a year about 0·003 gramme, and who has never felt inclined to increase the dose, though she strongly objects to giving it up entirely, on account of restlessness, sleeplessness, &c. While in most cases of continued morphinism a habituation occurs, so that more and more may be taken, there is a limit, variable in different individuals, beyond which, as a rule, it is impossible to go. If the morphinist has reached the maximum dose, he is aware of it, and instinctively keeps on this side of it; so that we very seldom hear of acute poisoning with morphia in such cases. There are individuals who never exceed 0·005 gramme daily, and have similar symptoms to those who consume 2-2·5 grammes. More than 3·5 grammes may not be taken daily continuously. This appears to be the limit, even in the most pronounced cases.

With respect to the symptoms of morphinism, they are so well known that they do not require to be detailed at length. If a morphinist who comes for advice and help is asked what symptoms he chiefly complains of, the answer is much the same in all cases. Disinclination to exertion in general; apathy; loss of memory; restlessness; generally also loss of appetite, various pains, hyperæsthesia; and in pronounced cases, suicidal tendencies. The patients are feeble, emaciated, have an ashy-grey or livid complexion, yawn and sneeze a great deal, and are impaired as to sexual power or completely

impotent. Less attention has been paid to the psychical condition. In this there is a certain analogy between alcoholism and morphinism. As the former is characterised by a moral deterioration, or moral starvation—whence the name formerly given, "*inhumanitas ebriosa*"—so in the morphinist there is a moral decadence in many cases. As he endeavours to conceal his habit in every way, so he loses his respect for truth and tells lies to conceal his condition, and afterwards from mere habit. He even lies to his physician; one day he says he has been accustomed to take 0·5 gramme daily, and next day he makes it 1 gramme. From this tendency to lying, which, however, is not all to be put to the account of morphia, he soon loses all self-respect; he feels how deep he has sunk, and, seeing no means of escape, he sinks deeper and deeper. This is, of course, not true of all cases; but knowledge of this fact is necessary in order rightly to estimate the utterances of morphinists.

The phenomena of the *morphia-hunger* vary with the individual and with the duration of the fast. Very often, where the quantity is slowly diminished, there are, with the exception of increasing discomfort, no violent symptoms. When, however, it is entirely withdrawn, or nearly so, violent symptoms occur. These are acute diarrhoea; insomnia; great excitement, or even mania, dangerous to those around, and particularly the physician; pains, itching of the skin, perspirations, a feeling of coldness, hallucinations, collapse, &c. In general, the gradual withdrawal has little advantage over the sudden. When great care has to be exercised on account of complications (great weakness, great excitability, &c.), it may be had recourse to rather than the other; yet, as has already been remarked, the explosive symptoms may occur nevertheless.

To relieve the sufferings of the worst period in the weaning process, various methods have been recommended; but unfortunately, though often useful, they are not so in all cases, e. g. wine in tolerably large amount, bromide of potassium, warm baths. In some cases, packing in lukewarm wet sheets was of great service. It may be remarked also that, when the drug is gradually withdrawn, it is often of advantage to inject the

subcutaneous same quantity of liquid as before. Occasionally even the injection of pure water has been of benefit.

The *prognosis* of morphinism as regards cure is not so favourable as was at one time believed.

Several considerations influence the result.

(1) The duration of the habit. Those cases which have lasted only a few months are more easily treated, and with greater certainty against relapse, than those which have gone on for several years, subject to the deleterious influence both on body and mind.

This requires no further explanation.

(2) When the condition which originated the use of morphia continues, or is incurable, a cure of morphinism can scarcely be looked for.

(3) The physical, but more especially the nervous, constitution plays an important part. Very weakly individuals fall into such a state of prostration on withdrawal of their accustomed drug, that it is necessary to give it again. In other cases where there is a strong predisposition to nervous disorder, the withdrawal of the drug gives rise to intense psychological disturbances.

(4) The maximum dose taken daily is not of great importance in relation to prognosis. The tolerance of different individuals varies so much, that what is a large dose for one is only a moderate dose for another.

Attention to these points may indicate what are the prospects of cure in a given case, but by no means with certainty. On the contrary, many morphinists go away apparently cured, and full of gratitude to the physician who has freed them from their misery; yet, as the subsequent history shows, the cure has been merely apparent. On this more hereafter.

Cases are sometimes met with in which the symptoms consequent on withdrawal of the drug are so serious as to necessitate its re-administration. As a rule, however, these symptoms should not be allowed to become too intense, and an allowance of a smaller quantity of the necessary drug enables us to dismiss such a patient, at least better, though not cured. In the great majority of cases, however, it is possible to withdraw the drug entirely; but then the question

arises—with what benefit? In those cases which, according to the points mentioned above, allow of a favourable prognosis, it is frequently possible to effect a permanent cure; but if all the conditions are not fulfilled, the prospect in my experience is distinctly gloomy. Very often a relapse occurs after a short interval, and the individual returns to his old ways. In the worst cases, mental disorders, frequently characterised by diverse hallucinations, but more especially of a melancholic form, with pronounced suicidal tendencies, are apt to ensue. In reference to relapses, the frequency of which Erlenmeyer ('*Centralblatt für Nervenheilkunde*,' No. 22, 1879) has recently noticed, I may mention the case of a medical man who, after four attempts at weaning, was treated in our institution, and dismissed apparently well, and who yet after three months was again in his former state. Many of the patients from whom the drug has been entirely kept for a length of time fall into a state of apathy, mental incapacity, and purposelessness, still retaining those moral characteristics already described. Among the eight cases described below there are three in which the results were suicide by gunshot in two, and in the third—a lady—repeated and most determined attempts to make away with herself. Hence the physician who undertakes to wean a morphinist of his habit must be very careful both as to his prognosis, and as to his means of carrying out the treatment to its end. Not unfrequently the patient will be most benefited by a diminution of his quantity, while a complete withdrawal will produce only other disorders. Very strict supervision of the patient for some months after active treatment is also highly desirable, though not always easily carried out. Indeed, in many cases in which there is physical or other discomfort rendering life otherwise unendurable, it is better to continue the administration of morphia, than interfere with the habit. The following example will illustrate this.

A medical man, aged 52, a Pole, was at the end of 1878 in a great state of alarm and fear of infection by the plague, so that he could no longer attend to his work, and became depressed and lachrymose. In spite of various remedies, such as bromide of potassium, chloral, &c., his symptoms increased;

he had intense precordial anxiety and sleeplessness, tore his hair, and felt inclined to commit suicide. On admission into our institution on May 20, 1879, he was in a state of great excitement, weeping, howling, and, while detailing his woes, would suddenly start as if terrified at something

This condition continued the whole day, till 8 in the evening. At this time he became quiet and spoke rationally, exhibited some appetite, and felt quite well. Next day, however, the old condition returned. After various means had been employed, morphia injections were had recourse to. Twice or thrice a day, as seemed necessary, 0·01–0·02 gramme was injected subcutaneously. The effect was very marked. He became quieter and more hopeful, and gradually the quantity of morphia could be diminished. On July 31 he left the institution, but remained under supervision in the neighbourhood for three months longer. By the continued use of about 0·02 gr. morphia daily, he was more cheerful and contented, his weight increased, and his general appearance improved. His love for, and ability to work, however, have not yet come back.

Morphinism may be of medico-legal interest. The moral degradation which accompanies morphinism, like alcoholism, may lead to actions which bring the individual into collision with the law. It is not likely, however, that such a condition would be considered as a ground of irresponsibility. On the other hand, a case of simulation of morphinism lately occurred in Vienna. A young man was apprehended in the act of picking the pockets of two ladies at the same instant in a crowd. He excused himself on the ground of being a morphinist, and that through this "his cerebral blood-vessels were so congested that his ideas of things were perverted." He offered to take 1·0 gramme morphia, at one dose, in order to show, by his bearing it, that he was a morphinist. In the course of further observation by the police surgeon it became clear, however, that the accused could not simulate the phenomena of morphia-hunger; and that the plea was entirely false, and put forward merely to screen a case of wilful theft.

A series of experiments were made on animals in order to study the phenomena of morphinism in them, but though I

have carried on experiments for four months, I have not obtained any very characteristic results. I injected daily in a number of rabbits a quantity of hydrochlorate of morphia, beginning with 0.015-0.02 gramme, gradually increasing up to 0.3-0.4 gramme.

First it was observable that a similar habituation occurred in rabbits as in man. The animals treated by a gradually increased dose bore large doses of the drug much better than others. The symptoms observable after long-continued injection were, a certain want of tone and weakness of the muscles, most marked on the hinder extremities; and also trophic affections of the skin. In many of the animals the hair began to fall out, particularly on the neck, so that the skin became quite denuded in patches.

I could not make out any permanent contraction of the pupils; the vessels of the ears were shortly after the injection contracted, but later became dilated. In several animals, in order to ascertain if anything like morphia-hunger occurred, after three months daily injection—amounting at last to as much as 0.3-0.4 gramme—the administration was suddenly stopped. I cannot, however, say that I noticed any symptoms worthy of note. Perhaps one or more exhibited a slightly-increased reflex excitability, but within very narrow limits.

Owing to the comparative unimportance of the results obtained, I have not thought it necessary to record the experiments in detail. I will only mention that many rabbits, at varying periods in the course of the experimentation, i.e. in the first few days, or after several weeks, &c., died somewhat suddenly in convulsions. On section, the brain was found oedematous and swollen, while the other organs presented no discoverable abnormal appearances. Where such were visible, they were certainly not attributable to the morphia.

In conclusion, I append a few cases of chronic morphinism, which have been treated in my institution, with the remark that the first three cases have been already alluded to by Leidesdorf in his valuable work.

CASE 1. C—, aged 35, formerly lusty and cheerful, had, a year before his admission, taken to morphia in consequence of acute periostitis. He rapidly increased the dose, and on



many days he had taken 80 injections of 0·02 gramme each. As the effect of the injections, after which he felt fresh and strong, wore off, and the more rapidly each time while the reaction became more intense, he resolved to place himself under treatment, in order to wean himself entirely. With this view he was treated by an able physician, and with success. But immediately after the weaning, he fell into a condition of melancholia, which rapidly increased. He fancied himself a wretch, who had ruined the whole world; felt in a constant whirl, and could give no account of what passed before him. His memory was very defective; he was restless, particularly at night, when black thoughts drove him from his bed. On the journey he made a suicidal attempt, inflicting a wound two inches long on his throat with a razor, with the purpose, according to his own statement, of relieving the congestion of his head. He was brought to our institution. His symptoms improved so rapidly, that after six days his wife insisted, contrary to medical advice, on removing him. We learnt that a few months afterwards he had shot himself in the Tyrol.

CASE 2. S—, aged 33, had begun morphia injections seven years before admission, in consequence of injury of the sciatic nerve. Though the pain had speedily subsided, he had continued the morphia, and had gone on increasing the dose up to 2·0 gramme daily. Numerous abscesses resulting from the injections compelled him latterly to take the morphia chiefly by the mouth. He imported this direct from England in large original bottles, containing 100 grammes, and he took it with a spoon without dissolving it. The quantity which he took in this way must have amounted to nearly 3 grammes daily. Several attempts to wean himself having failed, he placed himself under our care. He had a pale-greyish complexion, and flabby muscles; but he was otherwise well nourished. He complained of apathy, and bad memory. He received on the first day 2·0 grammes, then 1·5, then 1·0, and on the fourth day 0·5 gramme morphia; while on the sixth it was entirely suspended. At the same time warm baths, strong wine, and at night beer was prescribed. Already at the diminution of the dose he was restless, complained of alternations of heat and cold, diarrhoea, prostration; and he could

obtain no sleep, even with chloral hydrate. Four days after the discontinuance of the morphia, a condition of collapse came on, so that it became necessary to give him an injection of 1·0 gramme. After this, and under the influence of bromide of potassium, the symptoms slowly improved, the appetite returned, but sleep for a long time was very poor. After eight weeks he was discharged; but according to later accounts he continued unable to turn himself to any employment, though he kept from morphia.

CASE 3. R—, aged 30, is the case already mentioned (p. 451) of the physician who became a morphinist from experimenting on himself with regard to morphia-hunger. At first he took very moderate quantities, but later, becoming acquainted with another medical man also a morphinist, he increased his allowance. This other medical man also came under my treatment. (Case 4.)

The reason of R.'s coming to the institution was neither the inconvenience of the abscesses caused by the repeated injections in the thighs, nor the costliness of the drug, but, as he truly said, owing to a moral "Katzenjammer:" a feeling that he was not as other men, but had artificially to be kept up to the level. Before he came under my treatment he had four times tried to wean himself, but each time unsuccessfully. First, voluntarily, while he was still attached to the hospital; second, involuntarily, when he was unable to return from a journey and had to remain two days without a supply; third, at a hydropathic establishment in the Steiermark; and lastly, at a vegetarian institution in Switzerland. Latterly he had been in the habit of injecting about 2·0 grammes daily. On one or two occasions he happened to puncture a vein with his syringe, so that the morphia was injected directly into the blood. A strange itching sensation immediately overspread the whole body, and great congestion and a feeling of bursting of the head came on, with red, cyanotic face, giddiness, and laboured breathing. In the course of from 2-10 minutes after the injection the symptoms generally subsided. The quantity was diminished gradually each day, so that on the 8th he received none. The phenomena of morphia-hunger then showed themselves in all their intensity. He was highly

excited, threatened to make away with himself, declared that he was illegally detained, and swore he would call the police to his assistance. He broke the furniture; ate almost nothing for some days; complained much of cold, especially towards evening when he went to bed; violent diarrhoea; the pulse, which was formerly usually 72, sinking to 54. Then occurred hyperæsthesia and paræsthesia of the various senses; everything smelt and tasted bad. He was ordered bromide of potassium, wine, and warm baths. Gradually he became more quiet; his strength improved, but he continued for a long time very irritable and pugnacious. His pulse rose to 100. He began again to smoke and to seek amusement. He went away contented and happy and full of gratitude, after four weeks' stay in the institution. The first accounts were favourable enough, but half a year later he had already gone back to his old ways, and was as bad as ever.

CASE 4. H—, aged 32, a medical man, had taken morphia for five years, having commenced it in consequence of tooth-ache. As he found the morphia relieve also some mental troubles and worries, he continued with it. He gave also as another reason that, being assistant at the Physiological laboratory, he saw in himself an interesting subject of experiment. He found the internal administration better than the subcutaneous, though the action was less rapid. Various attempts to give up the habit failed. He took daily 1·2–1·3 grammes, and had also induced Case 3, whom he recognised as a morphinist by his aspect, to indulge more deeply than he had been wont.

The symptoms which he chiefly complained of were copious perspirations and pharyngeal catarrh. The ashy-grey complexion, peculiar to morphinists, was in him exceedingly well marked.

For the first few days of his stay in the institution he received from 0·6–0·2 gramme daily. On the sixth day it was entirely suspended. Then the phenomena of abstinence exhibited themselves in an intense degree. He was very excited, and wanted to climb up the wall with his feet. He had violent sneezing, sweating, and diarrhoea. Sacral pain; a feeling of coldness, chiefly one-sided; yawning, formication in

every part of the body, were the chief symptoms, in addition to great prostration. It was noticed that he very soon exhibited a profound aversion to morphia.

The treatment was similar to that of the former cases. Cherry-laurel water was very useful in calming his restlessness. His sleep was at first very indifferent, but improved under morphia, though he affirmed that he did not sleep at all, which was not really the case. His complexion became again fresh and ruddy. His desire for life and enjoyment returned, and, contrary to our advice, he went to the theatre on the 18th day, and left the institution at the end of three weeks apparently quite cured. He went to Italy, and returned after two months cheerful and happy at the successful cure which had been effected. He stated that during his sojourn in Italy, being attacked with diarrhoea, he had taken thirty drops of opium, a dose which he had found sufficient during his morphinism. This, however, was said to have produced symptoms of poisoning. He took up his residence in Vienna, but shot himself fourteen days afterwards. Shortly before, as we learnt on inquiry, he had on several occasions taken large doses of morphia.

CASE 5. R—, aged 47, farmer. The patient's father was insane. The patient himself was formerly subject to headaches. Nine months before his admission into our institution, in consequence of overwork and worry, he began to suffer with gastric catarrh, palpitation and despondency. He could no longer maintain his family, could not work, was sleepless, and had creeping sensations all over his body, as if all the ants in the world had been let loose on him. All remedies proved of no avail; chloral was useless; morphia never relieved him bodily and mentally. He injected daily 0.15–0.02 gramme. Under hydropathic treatment in Gräfenberg he improved still further, but he was advised also to give up morphia entirely before he could be considered cured. Under the existing conditions, however, a weaning process seemed neither necessary nor likely to succeed, but at the very earnest desire of R. himself he was admitted as a patient. During the last few days he had taken what for him was a considerable dose daily, viz. 0.35 gramme, and had the symptoms of acute

morphia-poisoning on his admission—constipation, giddiness, somnolence, hallucinations of hearing. For the first twenty days of his stay he received morphia injections of gradually diminished amount, yet he very soon began to exhibit symptoms of morphia-hunger—formication, cold, diarrhoea, restlessness; and all the symptoms for which he took morphia came back. He complained of terrible dreams, and when in bed kept his legs in constant motion. The symptoms showed themselves with special intensity when the morphia was completely suspended. The psychical symptoms chiefly predominated. He threatened to prosecute everybody, beat his attendant, looked very wild, swore he must die, could not endure life longer. A violent pain extended from his hypogastrium through his limbs, and he complained also of pain in his joints and on both sides of his head. By means of chloral and bromide of potassium, administered chiefly as enemata, sleep could usually be induced. During the ten days of his abstinence the symptoms rather increased than diminished; he refused to obey instructions, and became ultimately so weak and unmanageable that morphia had to be again allowed. At first he received 0·15 gramme twice a-day; but as this did not prove sufficient, it was increased to 0·09 gramme daily, given in three doses. Hereupon the psychical symptoms disappeared, with the exception of slight hypochondriasis; and his bodily condition improved, particularly his gastric catarrh. He left the institution, but returned after his daily dose had reached 0·18 gramme, which was in the course of three weeks. He did not, however, enter the institution, but lived in private under the care of my assistant, Dr. Krueg. Under his treatment the quantity was reduced to 0·09 gramme daily, and with this the patient continued free from his troublesome symptoms, and returned home.

CASE 6. M—, aged 33, a medical practitioner, had begun morphia seven years before, in consequence of periostitis of the lower jaw. He had, however, ceased taking it, but recommenced on being attacked by pleurisy, and had gone on, till lately he was in the habit of injecting as much as 0·6 gramme daily. He noticed, however, that he became less fit for work, that his energy failed, and therefore he resolved to

wean himself. On his admission the morphia was entirely suspended at once. For the first two days of abstinence he felt quite well, but sneezed a great deal. In the night of the third day he was seized with violent vomiting, repeated about 80 times within the 24 hours. The quantity of vomited matters was enormous, so that in this one day he became very low and prostrate, felt cold, and complained of sacral pains. The pulse, which at first was 76, sank to 46. Next day the vomiting ceased, the pulse was 42; there was great prostration, with diarrhoea. The colour of the stools was, as it is generally, very dark, almost black. From this time he recovered rapidly, so that already on the eleventh day he left the institution. His pulse was then 90. As to his subsequent history I have heard nothing.

CASE 7. Frau S—— had taken morphia for two years, in consequence of a painful abdominal affection, and had come to taking 0·2 gramme daily. Under the morphinism her general health was deteriorating so much that she resolved to place herself under treatment for the purpose of being weaned. For the first two days a little morphia was allowed, but she already at the diminution of the dose complained of pain in the sacrum, general malaise, tremor of the limbs, creeping sensations all over, cold, dislike to food. She was very restless, yawned a great deal and could not sleep. These symptoms became more intense on the third day, when the drug was entirely suspended, but after two days, improvement occurred. Lactate of soda (10 grammes) once procured a few hours' sleep, but on the following nights proved of no use. For a few days she continued very irritable and excitable, but was dismissed as cured in a fortnight. She made a tour to Italy, and returned at the end of six months, quite fresh and blooming.

CASE 8. Frau S——, a highly intellectual lady of nervous constitution, had been troubled for several years with nervous vomiting, which occurred particularly in the morning; and also with intense headaches. Of all remedies, morphia gave the greatest relief. Taken internally, it had scarcely any effect, but was active when injected subcutaneously. She stated that during the injection she often felt the blood

rush to the head, and that she often experienced a peculiar metallic taste in the mouth, which increased during the first 40-50 seconds, and then gradually faded away. Gradually she raised her allowance to about 2·0 grammes daily. She had made repeated attempts to wean herself, but unsuccessfully, as the above-mentioned nervous symptoms returned. She affirmed she even had an aversion to morphia, but could not do without it for the reasons mentioned. When she had reduced herself to 0·02 gramme daily, she suffered so much that she was obliged, contrary to her desire, to increase the dose again.

From this habit she had acquired a sodden sallow complexion, and a peculiar look of illness about the eyes. It is to be noted that she herself said that no one should trust a morphinist, as they were all alike untruthful. Such was the condition of things six months before her admission into the institution. Shortly after that she had again attempted to conquer the morphia, and had employed large doses of chloral against her sleeplessness. When the morphia was entirely suspended, dangerous nervous symptoms supervened. She was very excited; was often delirious; talked verses for hours; had tetaniform attacks with such intense prostration, that she was sometimes thought dead; had pains in every part of the body. Frequently she lost consciousness, but at other times she had intervals of perfect rest and clear-headedness, during which she earnestly requested to be taken to the institution.

During one of these lucid intervals she was brought to the institution on Dec. 7, 1877, in the evening. She spoke quite intelligently and sensibly about her condition, but within three hours she had a violent maniacal paroxysm. She dashed about the room, screamed, struck out, and could scarcely be held by four men. She was at the same time filthy in her habits. Next day she was quieter, but was frequently unconscious, and did not know where she was. In the course of December these attacks of excitement occurred repeatedly. At the same time her intelligence was impaired, her appetite bad, and large doses of chloral scarcely procured an hour's sleep. The urinary secretion was much diminished. She wasted considerably. Towards the beginning of 1878, during the first weeks

of the new year, she began to be quieter and gain strength. With this her mental condition quite changed. She was clearer, and generally recognised people; but she was highly crazed, had many hallucinations:—everything stank; there was a corpse in the room. She made repeated attempts at suicide; tried to set fire to her dress, and to strangle herself. After several weeks a state of apathy came on, which lasted till April. She scarcely spoke a word; frequently, however, she declaimed, lay almost constantly in bed, and took no interest in anything around her. In April she was again more active, but talked utter nonsense: "I will to the everlasting police; I have devoured my husband!" When out walking, she several times attempted suicide, trying to jump into a water cask. In May she was removed to another institution, which she left cured in May of this year (1879).

I saw her two months later. She was looking well, her mind had its normal clearness, and she said that she remembered scarcely anything of my institution. She remembered only one or two special circumstances.

In conclusion, I give the tables of the more important papers on Morphinism, so far as they are known to me.

*Bernhuber*.—Aertz. Intelligenzblatt, 1878.

*Burkhardt*.—Die Chronische Morphium-Vergiftung. Bonn, 1877.

*Busey*.—Philadelphia Medical Times, 1876.

*Calvet*.—Essai sur le Morphinisme. Thèse de Paris, 1876.

*Erlenmeyer*.—Die Recidive der Morphium-Sucht. Centralbl. f. Nervenheilkunde, 1879.

*Fiedler*.—Ueber den Missbrauch der Morphin-Injectionen. Zeitsch. für prakt. Medicin, 1874.

*Kormann*.—Deutsche med. Wochenschrift, 1877.

*Krage*.—Ueber Albuminuria und Glycosuria nach Morphium. Greifswald, 1878.

*Kunz*.—Die Morphiumsucht. Baier. Aertz. Intelligenzblatt, 1876.

*Laehr*.—Ueber Missbrauch mit Morphin-Injectionen. All. Zeitsch. für Psychiatrie, 1872.

*Leidesdorf*.—Die Morphiumsucht. Wien. med. Wochenschrift, 1876.



*Levinstein.*—Several papers in the Berl. klin. Wochenschrift, 1875, *et seq.* Die Morphiumsucht. Berlin, 1877.

*Lewin.*—Ueber Morphiointoxicationen. Zeitsch. f. prakt. Medicin, 1874.

*Martin.*—The Opium Habit. Philad. Med. Times, 1874.

*Mattison.*—Philadelphia Med. and Surg. Rep. 1874. New York Med. Record, 1876.

*Michel.*—Ueber Morphiuminjectionen und Morphinismus. Würtemb. med. Correspondenzblatt, 1876.

*Moinet.*—On the Administration of Opium. Edin. Med. Journal, 1875.

*Richter.*—Casuistik zum Morphinismus. Berl. klin. Wochenschrift, 1876.