Insanity with Myxœdema. By G. F. BARHAM, M.A., M.D. Cantab., Senior Assistant Medical Officer, Long Grove Asylum.

OUR conception of the ætiological significance of myxœdema in reference to those forms of mental disorder generally known under the name of "insanity of myxœdema," has undergone considerable modification since the time when hypothyroidism was regarded as the principal causal factor. The almost dramatic effect of thyroid treatment gave rise at first to a justifiable optimism. This for a while tended to obscure the possibility that a deeper-lying disorder of mind might exist, which would be naturally brought into prominence by the peculiar disturbance in the functioning of the brain associated with this state of disordered metabolism.

The question which requires investigation is: To what extent are the symptoms of insanity occurring in conjunction with myxœdema influenced during recovery from this latter disease under thyroid treatment? Reports of cases are frequently unsatisfactory, from the fact that with the true or apparent recovery the patient is lost sight of, and we are left in ignorance as to the subsequent state of mind. With the return to a sane reaction, after an attack of most of the recoverable insanities, we are usually content, though often unconvinced, in the employment of the word "recovery." On the other hand, it is often held that the insanity which accompanies myxœdema is in a category by itself, in that it is eminently curable. It is certainly true that we are in possession of a specific remedy, by means of which we may to a considerable extent control the disease processes of myxœdema, including certain phenomena of a disordered cerebration. My present object, however, is to call attention to the fact that in certain of these cases the psychical symptoms do not clear up with the disappearance of the physical disease, and incidentally to raise the whole question of prognosis in regard to the mental aspect of insanity occurring with myxœdema.

Since Sir William Gull (1873) described the mental and physical symptoms of myxœdema numerous cases have been recorded. The eight cases described by Sir Thomas Clouston (*Mental Diseases*, 1904) do not conform to any uniform mental

condition; yet in 1904 he observed in reference to these cases—"The ætiology is here so definite." Paton, in his *Text-book on Psychiatry* (1905), doubted whether the great variety of mental symptoms met with in association with myxœdema, and formerly regarded as specific of this disease, could really be attributed to this cause. Pilcz thought that the mental phenomena might in some cases be dependent upon the myxœdema, but he was also of the opinion that, in other cases, the mental symptoms might be the expression of a complicating psychosis. It is, indeed, uncommon in an asylum to meet with a case showing only the apathy and the volitional and memory defects characteristic of simple myxœdema. More commonly there are insane ideas, hallucinations, or other phenomena indicating a more complicated disease process.

Tanzi regarded this distinction as superfluous, except from the symptomatological point of view. In his text-book of mental diseases he does not appear to admit the possibility that a psychosis, having an independent orgin of a purely psychic nature, may complicate myxœdema. While he acknowledges the great variety of the mental phenomena which are met with in insanity associated with the imperfect functioning of the thyroid and parathyroid glands, he nevertheless insists that these abnormal mental states, described by him as the "thyroid psychoses," have their *sole* origin in lesions of these organs. On the other hand, Berkley and others have commented on the great variations in the types of alienation which may complicate myxœdema. And Bianchi, in his text-book, has not described any specific form of insanity with myxœdema.

At the present time we may differentiate between, on the one hand, certain mental symptoms accompanying myxœdema, all of which are characteristic of the general slowness and difficulty in reaction associated with states of athyroidism, hypothyroidism, and cretinism; and, on the other hand, definite types of mental disorder associated with myxœdema. The former of these is the "myxœdematous insanity" of Kraepelin. The latter are often examples of manic-depressive insanity, or dementia præcox, or they may show the mechanisms of dissociation, defence, or other abnormal process underlying hysteria and the psychoneuroses.

As an example of this latter type of case I will proceed to give the history of a case recently discharged from this asylum.

This patient, N. M—, was a married woman, æt. 34. She was the survivor of twins (the other having died at birth). She was well educated and showed some refinement in her tastes. In disposition she was bright and intelligent. There were several instances of insanity in her family:

(*a*) Paternal grandfather.

(*b*) Father (recurrent insanity).

(*c*) A brother (dementia præcox).

She had been married eleven years, during which time there were eight children. In the third pregnancy there were twins, so that in the first three years she produced four children. Following this third confinement symptoms of myxœdema developed. There was marked debility: the face was puffy, and speech was slow and thick; there was marked apathy and an inability to think and remember. She suffered from terrifying dreams and visions—for example, of her own funeral. Thyroid treatment is stated not to have been well tolerated, but she ultimately made a fair recovery.

After the four succeeding confinements (*i.e.*, in the succeeding eight years), there was always considerable prostration and debility, but no definite signs of myxœdema appear to have recurred. At these times she suffered from severe pains in her head, insomnia, and loss of appetite. The only nutriment tolerated was a mixture of beef-juice and brandy, and unfortunately this diet led to the habit of spirit-drinking.

The first symptoms of mental disorder appeared during these latter years in the form of a wholly unreasoning jealousy regarding her husband and one of his shop assistants. In order to dispel her morbid suspicions he changed his female assistant for a male. This, however, did not improve matters, because the patient carried on an extravagant flirtation with this man; and, especially under the influence of alcohol, she appeared to take a vicious pleasure in causing her husband annoyance.

Six months after the last confinement these tendencies became so marked that removal to the infirmary was necessary. The leading symptoms at this time were a somewhat acute confusional state of mind with auditory and visual hallucinations. There was subsequently complete amnesia for this period of her removal from home and her transference to the asylum.

On admission she still showed considerable confusion of ideas and memory, and there were ill-defined hallucinations; she appeared to hear voices, talked vaguely about seeing rats on the walls, and thought she was gnawed at night by these animals. The reaction was particularly slow, she was dull and apathetic, and was unable to give any account of herself. Memory was impaired, and she was disorientated.

Physically she was in poor health. The skin was yellowish-brown and unhealthy, the extremities cold and pale, the pulse weak and irregular, but normal in rate. There was no organic disease of any organ. The reflexes were normal, and sensation showed no impairment beyond the general sluggishness which characterised all her reactions. The palate showed a curve of degeneracy. She was remarkably slow and anergic in all her movements. There was at this time, however, no abnormality of speech. After a few weeks there was some general improvement in health. Memory improved and she came to realise where she was.

She continued to show the same apathy and lack of interest in herself and her affairs. There was no indication of insight into the circumstances of her position. She was not disposed to employ herself but appeared infinitely bored by everything. For eighteen months she continued in this dreamy state of mind, chiefly characterised by a markedly inefficient grasp of reality. Her doctor was the only person who appeared to interest her, and towards him she was alternately critical, irritable, or amorously impulsive. This subsequently proved to be a result of mistaken identity, as will be shown later.

During eight months there was amenorrhœa, and she was under the delusion that she was pregnant. Curiously at this time the breasts became active, but there were no other symptoms to give rise to this delusion.

Finally there appeared definite signs of myxœdema. The features became puffy and expressionless, and particularly the mouth and alæ nasi were uniformly enlarged: there was also the characteristic raising and arching of the eyebrows. The skin was increasingly icteroid in colour, and there was a well-defined dull pink flush on either cheek. There was a general, though slight, appearance of solid œdema, and speech was slow and thick.

She was then put on thyroid treatment and became com-

pletely restored to physical health in the course of four weeks. Mentally, also, she was bright and intelligent and appeared convalescent.

She now, for the first time, gave a good history of her life. This was amplified from other sources.

Analysis of this history and of the symptoms of the psychosis showed the following conditions:

(1) That a year prior to her marriage she was engaged to be married to a cousin, to whom, it appeared, she was deeply attached. The discovery that he was already the father of an illegitimate child caused her to break off her engagement. She was greatly upset at this affair, but endeavoured to forget the painful memory. The subsequent history shows, however, that this former affection remained in a state of repression, and that it continued to exert an indirect influence on her mind.

(2) That she had never felt any real affection for her husband. He was fifteen years her senior, and socially her inferior, and she married him from necessity rather than from choice. She always prided herself on her family and education, and said that her husband never understood her and that she always felt that she had lowered herself by her marriage. The husband, who was a somewhat coarse individual, appeared to be genuinely fond of his wife.

(3) That married life had been a continual conflict, in which all the natural trends of the personality were opposed to the circumstances under which she was compelled to live. Associated with this was another conflict, more or less submerged, in which the repressed affection for her cousin stood in contrast to her feelings regarding her husband. The life of this patient was, therefore, deeply influenced by certain incompatible emotional factors at conflict with one another. As these incompatible complexes obviously could not all obtain realisation, it was necessary that one or more of them should undergo repression. I therefore assume that the influence of reason led this patient to strive to ignore the painful factors in this conflict, and to adapt herself to the dominating circumstances of her life; but that when, in her repeated states of debility, and, more especially, under the influence of alcohol, the restraining influence of reason diminished, and the facts of reality appeared less formidable, the formerly repressed complex rose to the surface. In particular we find the repressed

wish for release from her husband striving to attain fulfilment. Now in hysterical psychoses, as is well known, a repressed desire frequently appears on the surface of consciousness as its exact opposite, namely fear; in the present case the secret desire that her husband would leave her was expressed in consciousness as the fear that he was leaving her. Hence this unreasoning jealousy.

These recurring exhibitions of morbid jealousy may, therefore, be interpreted as the first phase of a mental disorder arising on the basis of an abnormally directed conflict, and influenced by alcohol and physical debility.

At the onset of the actual psychosis, the symptoms were those of the confusional hallucinatory type commonly associated with alcohol; but this acute phase soon passed into a state exhibiting entirely other characters. In this later stage she was in a partially dissociated dream state. While recognising her own personality and realising where she was, she was quite unable to explain her presence in an asylum. Her former life and her husband appeared to be entirely ignored. On the other hand she mistook the identity of the doctor and believed he was her cousin to whom she had been formerly engaged. She believed, moreover, that she was pregnant as the result of this affection.

This period of the disorder may be interpreted as another phase of the conflict. In this state of partial dissociation we find the formerly repressed complex of her early affection occupying the field of consciousness, and thus attaining a delusional fulfilment. This phase may therefore be regarded as a refuge from the conflict, and in its mechanism it shows the attainment of a wish fulfilment. Now underlying the mental reaction of this second phase there were certain characters suggestive of hypothyroidism, namely continued apathy with diminution of volition and slowness of thought and action. When, moreover, these symptoms became pronounced, the result of thyroid treatment entirely confirmed the diagnosis. It may be suggested, therefore, that as a result of the lowering influence of this state of disordered metabolism, including a disorder in the functioning of the brain, there occurred a correlated diminution in the higher controlling functions of the mind, removing the resistance normally exerted against desires which were incompatible with reality.

As regards the effect of thyroid treatment on the mental state; with recovery of health the mind returned to its former conditions, and with the improvement which had occurred under thyroid treatment the patient was taken home by her husband. The apparent mental recovery, however, in reality merely brought about a renewal of the former conflict, and this conflict, moreover, underwent a further development.

The investigation of the facts concerning her history, and her confession of the unhappy state of her life, re-introduced prominently into consciousness the incompatible emotional factors which had existed. On returning to home life these incompatible desires had again to be subjected to repression.

After leaving the asylum she continued thyroid treatment under medical supervision, and, seen at the end of a month, she was free from any sign of myxœdema. Her husband said, however, that she was again behaving in a very annoying manner, and was again showing unfounded jealousy about him.

During this time the patient had behaved in a very strange and emotional way towards the doctor, had written several letters of a distinctly intimate nature, and finally openly expressed her affection, and her scheme for getting her husband married to his housekeeper, thus opening the way to a legal separation and her own liberty.

Subsequent letters showed very definitely evidence of a hypomaniacal disorder of mind. She was extravagantly jocular, quite wanting in any grasp of reality, and she was absurdly happy in a sort of imaginary re-arrangement of the incompatible factors in her experience.

These latter symptoms occurred in the absence of any evidence of hypothyroidism, as well as in the absence of alcohol, which she had refrained from taking in order to show her devotion to the orders of the doctor on whom she had now cast her affections.

The ætiological factors in this case are: (1) The emotional conflict; (2) alcohol; (3) myxœdema; (4) insane heredity.

The emotional conflict, which had taken an abnormal direction, is found underlying the whole course of this disorder in the mental life of the patient.

To the elements of this conflict was due the conformation of the clinical picture; the symptoms were present at times in

which there were no signs of the influence of either alcohol or hypothyroidism.

The progress of the case, however, was considerably influenced by the state of the health as conditioned by these two important contributory factors.

The one essential factor, without which the development of a state of insanity was improbable, was the psychic factor, *i.e.*, the abnormally directed emotional conflict.

It is true that under thyroid treatment the mental condition improved sufficiently to enable her to remain outside an asylum. The continued abnormal mental state, however, was an indication of the independent progress of the psychosis.

This case, therefore, will support the opinion that the prognosis of insanity with myxœdema is not so favourable as has been frequently thought to be the case; and that even when the mental symptoms appear to clear up under thyroid treatment, it would be advisable in all cases showing evidence of a complicating psychosis to hold a very guarded opinion respecting the future.

It is not my object to draw any general conclusions from the study of an isolated case, but rather to emphasise the importance of the recognition of the psychic origin of these morbid mental states associated with myxœdema. Unhappily, those psychic factors, occurring in the evolution of the mental life of the individual, the tendency of which is to take an abnormal direction, and which directly develop into the abnormal or insane phase, usually, on recovery, remain undischarged, and continue as the potential factors of insanity. Thus the personality is weakened and becomes a prey to every contributory factor, by which its resistance is liable to become lowered. It is generally allowed that alcohol is such a contributory factor in the causation of many forms of insanity. May it not be said, with equal truth, that disordered thyroid metabolism has in all probability a similar relationship in its association with the ætiology of the psychoses?

Discussion,

At the Quarterly Meeting held at Long Grove Asylum on February 22nd, 1912.

Mr. A. O. Goodrich remarked that he understood drink was put down by the author as a factor in the causation of this case. He would like to know whether it was a cause of the insanity, or whether the insanity was the cause of the patient taking to drink.

Dr. J. R. LORD said Dr. Stansfield asked him to express his regret that, owing to an attack of rheumatism, he could not be present. Dr. Stansfield had sent notes of a case of myxœdema, which he thought might prove of interest in relation to Dr. Barham's paper.

"*Notes by Dr. T. E. K. Stansfield*:—Patient, H. H—, married in 1879 at the age of 20; first child born in 1880; second child born in 1882; third child born in 1887; fourth child born in 1888. My recollection of the case was that, following the birth of the second child, there appears to have been some lactational melancholia, with attempted cut-throat. Details of this could not be obtained at the time, but it was assumed that the thyroid had suffered injury. Symptoms of myxœdema were first noticed when she was pregnant with her fourth child, the principal mental symptoms being increasing mental confusion, inability to concentrate or employ herself, with considerable insight into her mental state with resultant depression. She was under treatment by Sir William Broadbent for about a year in 1890–91, phosphorus being given extensively. She was afterwards seen in consultation by Dr. Mitchell Bruce, who also confirmed the diagnosis of myxœdema. The prognosis at that time with regard to life was very bad; the patient now says that the duration of her life was considered then to be worth a few months. The mental symptoms became more pronounced, and she was certified in 1891 and sent to an asylum. The ordinary mental symptoms associated with myxœdema were considerably masked by the symptoms, which it was afterwards considered might possibly be due to the prolonged treatment with phosphorus. To the ordinary symptoms, dulness, hebetude, and vacant automatism, were added those of erotomania; she got into other patients' beds, and when being bathed, unless the nurses were very careful, she would seize and almost strangle them in the excess of her sexual desire. She gradually became worse during the first eleven and a half months of her stay in the asylum; it was then decided that she should be treated with the injection of glycerine extract of the thyroid of the sheep, which had been suggested by Dr. George Murray, of Newcastle. The Committee very kindly purchased the sheep specially for the purpose, and these as required were killed, and I dissected out the thyroid and made a 20 *per cent.* glycerine extract by pounding the gland in glycerine and macerating for forty-eight hours, afterwards straining through several layers of very fine muslin. The patient was given ℳxx hypodermically every second day. The reaction was most remarkable, so much so that in ten weeks' time she was sent out on trial, and at the expiration of her trial period she was discharged recovered. I informed the husband at the time of her discharge that it would be necessary for him to keep a very close watch for the earliest symptoms of relapse, when the thyroid would have to be again administered. My recollection is that about four months after her discharge, or five months after the last injection, the symptoms began to recur, when I instructed them to obtain the gland from the butcher, and give it to the patient in daily small doses in the raw state, either in port wine or along with a mouthful of soup. This method of treatment was carried out until the advent of the thyroid tabloid, which was then substituted in 5-gr. daily doses. Within three years of her discharge from the asylum she made two tours in the United States. There she had considerable difficulty in obtaining the tabloids, which had to be cabled for to England. Her weight began then to steadily increase, and she gained over 3 st., though her general health was excellent, and she continued to gain weight after her return. After another interval of about three years she again became pregnant, and she was prematurely confined of a non-viable child, probably of about six months from the description given. Following this she had mild psychasthenia for two years, from which she recovered without any special treatment. Since that time, now twelve years ago, she has had very excellent health, and she is physically and mentally very well indeed at the present time, thanks to her daily 5-gr. tabloid of thyroid extract. The probabilities are that the increase in weight in America was due to thyroid insufficiency. I described the case before the Pathological Section of the British Medical Association which met at Nottingham in 1892."

Dr. LORD, in discussing Dr. Barham's case, said it was a very interesting and well-recorded case of this disease. His experience agreed with that which Dr. Barham gave, namely, that these cases in asylum practice were not always of the favourable character which the general literature on the subject led one to suppose.

Probably this was due to the fact that they often came under treatment at quite a late stage, when the poisoning due to thyroid insufficiency had materially changed the general chemistry of the body. In his own cases, almost invariably, there had been associated with it much general arterio-sclerosis, and also there had been often considerable alcoholism as a secondary factor. With regard to the symptomatology of the condition, not all had the ability or the opportunity to enter into a psycho-analysis of the character which the meeting had had the pleasure of listening to from Dr. Barham. If he were to insist upon that analysis in all his admissions, he would have to ask his Committee to give him as many medical officers as there were patients. In his experience, the symptoms were chiefly those of slight confusion, much retardation and poverty of thought, considerable loss of memory, associated with hallucinations of hearing, morbid suspicions, and delusions of persecution allied to disorders of organic and tactile sensibility. Treatment with thyroid, although it did much good, did not always produce such favourable results as the profession were led to expect. Of course in some of his cases the results had been very good, but that was not the rule.

Dr. EDEN PAUL desired to insist on one point a little more than Dr. Lord had. He thought the symptoms of hypothyroidism were now so well known to the general practitioner that the majority of cases of hypothyroidism and myxœdema came under the notice only of the general practitioner, and did not get as far as the psychologist. They were treated by thyroid in quite an early stage, before mental symptoms had developed. Those were the cases which justified the favourable statements as to the outlook when thyroid treatment was carried out. The very fact that a case of myxœdema with severe mental symptoms came under the notice of the asylum medical officer at the present day largely implied that there was a multiple causation, and that it was a case in which thyroid treatment by the general practitioner had failed to prevent the onset of mental symptoms. In those cases there was another element, as had been so graphically described in the case related in Dr. Barham's short paper. That paper showed that if there were a multiple causation, mere removal of one element would not successfully cure the disease.

Dr. BARHAM, in reply to Mr. Goodrich, said he felt that the drink habit was undoubtedly the result of the disordered conditions in the patient's mind as the result of the conflict. She could not adapt herself to conditions, and she felt the need of some sort of refuge. He could not say there was a predisposition to drink. In her family there was a reference which he did not think sufficiently authentic to be made use of in the paper, namely, that her brother was addicted to alcohol. When once the drink habit was started a vicious circle was set up. He had listened with great interest to the case of which Dr. Stansfield had kindly sent particulars. He had not himself seen arterio-sclerosis in connection with thyroid cases which had been in the asylum; the subjects here were all young people. There had been three women in the asylum who had suffered from that disease. He quite agreed with Dr. Eden Paul that these cases were usually of a complicated type. Of the three cases, he had fully investigated only one. Of the other two, one was also a complicated case, but her mental symptoms were so acute that they did not permit of investigation. It was of great interest to him to note a fact which was classical with regard to the occurrence of myxœdema, namely, its association with a very rapid succession of births. This woman, who died uninfluenced by any thyroid treatment, produced four children in one year: she had one child, and before the expiry of another twelve months she gave birth to triplets. The other case which was in the asylum was recently discharged recovered; hers was a perfectly simple uncomplicated case of the type which Kraepelin described as myxœdematous insanity, namely, with volitional and memory defect.