

Cases of Myxoedema.

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By

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Cases of Myxoedema.

The following paper consists of a record of all the cases of Myxoedema I have had under personal observation since commencing practice with a summing up of the conclusions regarding the nature of the disease which I have deduced therefrom.

A. Cases.

1. Esther Kiddie, married, aged about 50 in June 1883 when I first saw her, the youngest of a family ^{of seven}, all of whom are now (June 1883) dead except one. Married at the age of 23, and has had six children, two of them stillbirths at full time. No difficulty in delivering in these latter cases and no light from any source thrown on the cause of death. No miscarriages or abortions. After the second confinement went with her husband to America, where her four youngest children were born. Had a hard life of it there according to her own account without much money-making or material success on the part of her husband. Was always sober in her habits. The whole family returned to this country about 1876, and patient's health seems to have given way shortly after their arrival in Dundee. Became difficult to put up with in the house, but never actually unmanageable, until, amid the general excitement caused by the fall of the Tay Bridge

in December 1879, she became maniacal, and was removed to Dundee Royal Asylum. Since then she has had the status of a Pauper Lunatic, partly in Dundee Asylum, partly in Murchly Asylum, and partly in Dundee Poorhouse, and for the last four years having been "boarded out" in the country.

When at her worst she had great delusions about those around her being in league to take her life, and to render her miserable in every way possible, and with these delusions she would become at times perfectly furious.

Now she is comparatively quiet and pleasant to deal with, but still uncertain, and apt to get into fits of temper about trifles. She wishes to get back to her home but would form a most uncomfortable inmate. When

I saw her in 1883 the myxoedematous facies was quite unmistakable, with the raucous voice, blue lips, harsh dry skin, and swelling of the subcutaneous tissues. She had presented this appearance for at least four years, I was given to understand, but it had never been the subject of thought to those about her, on account of the predominance of the mental symptoms. It was for these latter that I saw her, the time being an interval of a month she spent at home, having been removed from Murchly contrary to the advice of the Superintendent. She was taken back shortly after I first saw her and I saw her no more until a few weeks ago when I visited her at the cottage in

5.
The country where she is ~~now~~ boarded. She is now very different from what she was 7 years ago. The memory is fairly good. She is very talkative and communicative, likes to be questioned and is easily pleased with a little attention. There is not, so far as I could make out, any dementia. ~~Her memory~~ She has ceased to complain of what she says used to trouble her very much—persistent headaches. She sleeps well and eats well. Another symptom, a feeling of coldness, as if she was always too thinly clad, has disappeared for a year or two. The thyroid gland is palpable deep down at either side of the trachea and is harder than usual. There is a slight amount of subcutaneous fat. No senile wrinkling. The upper eyelids show very well the peculiar drawing up and flattening out which, with the blueness of the skin and lips, give what is peculiar to the face. Hearing and sight are fairly good.

2. 2. Mrs Devar, about 60 years of age. I regret to say about this case little else than Vidi tantum. It was in 1883 about a month after I had seen the preceding one, and it was in the absence of the family medical attendant that I was asked to visit her for some digestive disorder. A myxoedematous facies hoarse voice, thin black hair, failing memory and slight incoordination of speech—these are all my notes. On referring some time ago to her regular attendant in whose absence in 1883 I had acted, I found that she died about

4.

eighteen months after I saw her with cerebral symptoms, death having been preceded by 48 hours coma.

3. Mrs Robertson, aged 48. Gives the following account of herself. She is the mother of seven children. No miscarriages, and her sexual life apparently quite normal. She went to London with her husband and three of a family about eleven years ago in fairly good health. Eight years ago the immediate death of her son, six years old, from a street accident in front of her own house, gave her a shock from which she thinks she never recovered. She first complained of weakness and low spirits and six years ago of the swelling of the body. The weakness has increased since then, but to judge from her own account the strength has remained as it is at present for the past three or four years. The mental condition for the first three years of her illness was one which, while it is not peculiar to Myxoedema, is very common in the affection. She was restless when alone, and especially when alone in the dark, and at these times would be seized with vague indescribable terrors. There was no fear of any defined impending calamity, and there does not seem to have been any delusion of suspicion, or delusion of personal unworthiness or worthlessness. To judge from her description now (for I am speaking of her state at a former period) her mental condition at that time might be classed among the *Stupors*, but that is only an impression of mine. The swelling of the body was accom-

panied from the first by the peculiar utterance,
the cyanotic tinge of the lips and cheeks, and
the slow progression which mark her trouble
now. Her present condition is not nearly so
bad as it has sometimes been. Her size
is enormous and she gets along with difficulty.
Great part of the swelling of the subcutaneous
tissue is due to fat, and - now and then -
to true serous oedema. I attended her
lately in an attack of bronchitis with cardiac
weakness and general oedema, and this was
only the supervention of a state of things which
is never far distant. Any extra exertion
will bring on some dyspnoea and an increase
of oedema. Since she came back to Dundee
in June 1889 she has lost her husband
from acute phthisis, and a daughter from
tubercular meningitis, and the labour and
exhaustion consequent on attending on these
produced a distinct increase in the oedema
which fitted very distinctly at this time.
There was at this time no bronchitis. At
these times, i. e. when she has serous oedema,
there is sometimes a very slight albuminuria
which at other times is absent. I have
never discovered any tube-casts. Taking into
account her size, quite independent of such
outbreaks of true oedema, she thinks there is
a steady increase and that she is now bigger
than she has ever been. This is probable
enough, but the postclimacteric deposit of
subcutaneous fat may account for the steady
growth she has observed. The voice has the
usual monotonous, rough, slow, querulous character.
The walk is no more than the walk of a

woman of sixteen stone weight, but she has a feeling of weakness about her knees, especially when she is going down a declivity, and is very careful in all circumstances on account of her liability to stumble even on level ground. Her knee-jerks are present. There is some formication and numbness occasionally present about the lower extremities. Sleep is poor and is disturbed by dreams. The thyroid gland cannot be felt. Sight and hearing are fairly good. Her mental condition is perhaps, on the whole, better than it was some years ago. The sickness and deaths in her family no doubt tried her last summer, but the emotions seem to be blunted, and while her exertions, taking into account her state of health, were not spared, and her nursing duties were wonderfully well done, the deaths of her husband and child within a few weeks of each other were not felt with normal keenness of sorrow. This blunting of the emotions is but a special instance of the effect which the disease has had upon the whole mind. It is enfeebled all over, so that I think it doubtful whether she is capable of experiencing the more acute and unpleasant mental symptoms which marked her state some years ago. She has of course plenty complaints. She talks at the usual length (a length, I may remark, which makes the careful investigation of the symptoms in a case of Myxoedema, a task to be undertaken only when the practitioner can spare an hour or two without inconvenience.) She repeats her sentences in an automatic manner and she is fond of dwelling on

the past. But she is capable of being cheerful in a small way, and takes a fair interest in her neighbour's affairs. On the whole I doubt if the Myxoedema will do her much more harm than it has done. The morbid process seems to have spent its force, and though the tissue cannot recover, the disease hardly appears to be progressive in the proper sense of the term. She would be a bad subject for any acute illness such as pneumonia or nephritis or erysipelas, and her constitution is to that extent weakened, but that is all. This is not always the case with Myxoedema. If there is the tendency to haemorrhage which has been observed, (but which appears to be an idiosyncrasy of particular cases rather than an essential part of the disease) this involves a definite danger to life. If the cerebral affection which carried off Mrs Dewar, the second case on my list, was haemorrhage, it was possibly a direct result of the Myxoedema. But in Mrs Robertson's case there has been no such tendency, and her cardiac weakness is the only influence tending at present to distinctly shorten her life.

4. Mrs Clark, married, 40 years of age. I was called to see her in September of last year in the absence of her usual medical attendant (who had not up to the time that I saw her diagnosed the presence of Myxoedema.) The immediate complaint for which I was consulted was a slight "cold" and appears to have been merely an exacerbation natural at that time of the year of the usual

subjective feeling of coldness which all these patients
 are more or less conscious of throughout their
 illness. She is the eldest of a family of nine,
 and is herself the mother of four children, whose
 ages run from 17 to 8 and all of whom
 appear healthy. Her husband is alive and
 looks thoroughly healthy. Has the greater part
 of her life lived in the country. No miscarriages,
 but has had poor health for last fifteen
 years. About that time ago the sight of
 the left eye began to fail, with severe headaches
 and pain in the affected eye. The
 failure passed on to complete blindness five
 years ago. Two years before that the sight
 of the right eye gave way with similar symptoms
 and this too has resulted in blindness all
 but complete. About four or five years
 ago, maybe longer (it is always difficult to
 tie down to a year or two the commencement
 of a Myxoedema) she began to swell about
 the face and limbs with change of voice
 and growing irritability of temper. (During
 all these years has taken large quantities
 of Iodide of Potassium, this being used chiefly
 in connection with her eye symptoms).
 At present her condition is as follows. Has
 myxoedematous facies. Teeth good. Hair thin
 and wiry. Skin dry and scaly, her stockings
 sometimes being encrusted in the evening of
 quite a quantity of branny scales. Hearing is
 good. The eye-symptoms are peculiar. In
 the left eye the iris is gray and blurred,
 adherent all round the margin of the pupil.
 Pupil about 2 mm. in breadth. Fundus
 cannot be illuminated. Sight in this eye

9
is absent altogether. In the right eye the iris is gray and blurred slightly, adherent at one side. Pupil about 4 mm. in breadth, and can be dilated with atropia to 6 mm. A good view of the fundus is obtained. The disc is a dead bluish white with a large posterior staphyloma surrounding it on all sides of an average double its own breadth. The vessels appear normal. At the extreme periphery of the fundus there are large deposits of black pigment visible like those of retinitis pigmentosa. In the middle distance there are similar smaller patches of pigment situated in the midst of brilliantly white patches of choroidal atrophy. With this eye the only vision possible is that she can distinguish the position of the window in a room or the place where the lamp is in the evening. The swelling of the subcutaneous tissue is not so marked as in Mrs Robertson's case (No 3) and is probably dependent only to a small extent on subcutaneous fat. There is not much wrinkling of the brow. The cyanosis is very distinct. The feeling of cold is constant and the susceptibility to changes in the temperature is extreme. The tongue is large, dry, smooth, and the appetite is poor. For some days before I saw her the first time had haemorrhage from the bowels - probably from the rectum. Has complained of this frequently during the past two or three years. The mental condition is fair. Quverulous and long-winded, but no delusions or suspicions. Disturbing dreams but no morbid terrors. This case admits of more enlightening comment than I am in a position

to give. It is about as nearly certain as it can ever be that the irido-choroiditis from which this patient has suffered has not been due to syphilis, and, syphilis apart, the causes of the affection are practically unknown. "It is frequently met co-existing with affections of the general health, in women in conjunction with painful menstruation, after puerperal fever, during pregnancy, and at the change of life." (Freyer's Practical Treatise on Diseases of the Eye. Translation P. 206.)

The disseminated form of choroiditis is also frequently congenital without a suspicion of syphilis on the part of the parents. These various coexistences with chronic choroidal affections, while they are of too vague a character to be of much interest to the ophthalmic surgeon are not without significance in the present connection, for they point obscurely enough, but just as clearly as the subject will allow, to this, that the associations of the disease are with disturbances in the developmental arrangements of the organism, and Drycodema itself is such a disturbance.

5. Mrs. Muir, married, aged 39. Was one of five children. Is herself the mother of eight. Her history is as follows: She was married at the age of 22. After the birth of her first child which only lived a fortnight and died of "croup" she was ill for three months with "inflammation". She was treated for the first six weeks with mercury, and for the remainder of the time with opium (In consequence of the mercurial

treatment she says that all her upper teeth came out) She then had three children all healthy and all still living. Then came four who all died, one at a fortnight with "croup"; one at seventeen months with "whooping-cough and bronchitis"; and the remaining two at about three weeks or a month with "Diphtheria".

The last child was born three years ago. She came to Dundee from Falkirk $7\frac{1}{2}$ years ago. In the last year or two that she spent in Falkirk Dr Hamilton used to look in when he was passing and advise her to take "twenty-five drops of laudanum" just to "test her system". During that time she had "an inflammation of the head" for which she had five leeches in the frontal region. (I give all these fragments of her conversation for the purpose of indicating that it was about this time that her some serious disturbance first manifested itself, and that at that time probably mental symptoms were in the foreground.) Her weakness has been growing more defined during the last three years. The following is a record of her condition on November 2nd 1889. She is a

prematurely old-looking woman with a withered appearance, blue pale lips, and yellowish dry skin. The forehead is deeply furrowed, and there is some thickening about the eyelids and alae nasi. There is no perspiration. The nails are brittle, especially of the thumbs, where ^{they} are very much broken off at the edges.

Hair has fallen out to some extent, and what is left is dry and hard. There is no change in its colour. The teeth are carious especially in the upper jaw. The mucous

membrane of the mouth, tongue, rectum, and vagina is of a purple colour. There is extreme constipation, a fortnight sometimes elapsing before there is any movement of the bowels, and even then only with purgatives. The urine is normal. There is numbness and analgesia of the hands, arms, feet and legs. She volunteered the statement that she could push needles into them without any feeling. The fineness of the sense of touch is impaired. The hands are large and badly shaped. Rheumatic attacks are very severe, especially with any change in the weather. The movements are slow and gait is tottering. The voice is feeble, monotonous and rough. Very apathetic and indifferent to her surroundings, but her memory is good, and on one subject - her ill-treatment from her husband her mind works briskly enough. The thyroid gland is not perceptible, though the neck is very thin, thinner than in any one of the other cases here recorded.

6. Mrs Catherine Laird, aged 45. First seen on 11th June 1887. Has led a somewhat irregular life. An illegitimate son is at present serving a term of five years in the Beldovan Reformatory School. The woman herself was an inmate of the Dundee Royal Asylum from 14th January to 4th September, 1882. "She was admitted (I am quoting a letter which I received from the Superintendent, Dr Roie) suffering from acute mania apparently a pro. She had broken open a neighbour's door, declaring murder was being perpetrated in her house, and

"accusing a young man to whom she was to be
 "married of being the murderer. She had been
 "drinking heavily since the New Year. In
 "addition to the above delusions mentally was very
 "confused. Gradually got well. Left on trial
 "7th August, and discharged 4th September."
 After coming out she married her present husband
 from whom however she soon separated by
 his desire - in fact, he left her. Was known
 to the neighbours as a quarrelsome, talkative woman
 of an uncertain temper and liable to
 outbursts of excitement. Her own story is
 that the swelling and weakness from which
 she at present suffers date only from two
 years back. It began with the swelling in
 the arms above the elbows, then over the
 forearms and hands, then over the chest,
 feet, and ankles. She has a stupid, heavy,
 myxoedematous facies. The swelling is
 marked over the whole body and pits very
 slightly on pressure. The surface feels cool.
 Her utterance is slow, monotonous and
 with the characteristic roughness. The
 hair is well kept but is dry and harsh.
 Has a very unpleasant taste in the mouth,
 the tongue is large, flabby, indented with the
 teeth. She has occasional vomiting in the
 morning. The bowels are very constipated.
 The abdomen is uniformly swollen, the
 circumference at the umbilicus being 40
 inches. The liver dulness extends $1\frac{1}{2}$
 inches below the costal margin and the
 splenic dulness is slightly increased. The
 kidneys are not palpable. The pulse is
 64 and compressible. Valves of the heart

healthy. The respirations are 19 and the lungs appear normal. The urine is about 60 ounces of a Sp. Gr. 1006 with a deposit of oxalates and no albumen. The nervous system appears normal to all the usual tests for organic disease. Mentally she is dull. She cannot be troubled speaking to any one, and persists in saying that she is quite well, that there is nothing the matter with her. She picks up some sentence here and there to express her meaning and will come over it again and again. Such sentences as "I'm quite well," "I've me child - a boy" "I'm taking my food very well" are instances of what I refer to. She remained under observation for about 10 days and then left the Infirmary in a whim. The duration of the disease in this case is doubtful. There is really no certainty that she was not suffering from Myxoedema when admitted into the Asylum in 1882, for it was not till 1884, when Sir Arthur Mitchell pointed out to the medical authorities there Mrs Murray (Eather Kiddie) my first case, as a case of Myxoedema, that the disease was recognised ^{in the place.} ~~there.~~ The symptoms of mental disorder may well have been hurried forward by drinking so as to present themselves even earlier than usual, and we have seen from the previous cases that the mental disorder is frequently more severe early in the history than later. The special features of the attack also are not inconsistent with this supposition.

7. Mrs Young, married, 36 years of age. The fifth of ten children. Mother of 5 children herself and now nearly at full time with a sixth. Has also had one miscarriage at the fourth month. Has been complaining of her present weakness for two or three years past. Has characteristic myxoedematous facies with hoarse voice. Swelling moderate. Complains of constantly feeling cold with a subjective sensation of swelling around the neck. Sleeping well. Taking food fairly well. Bowels are regular. Mentally she has no complaints except that she feels very irritable now and is easily excited. But her neighbours do not complain of her. She knows of nothing to which she attributes her present trouble. The brief note of this case arises from the fact that I only saw it a few days ago. My friend, Dr Charles Doon, mentioned that he thought he had a case of Myxoedema in a woman who was far advanced in pregnancy. I asked to be allowed to look at it, and he kindly gave me permission. It is not simply as an additional case that it is inserted here, but as being a case in a woman of thirty six years of age in whom the myxoedematous process has apparently had no effect on the childbearing functions.

8. Ann Thin or Dobbie, age 71. Father died of erysipelas. Mother at age of 84. A sister of heart disease, three sailor brothers of various unknown causes. Has

one sister living and healthy, younger than herself. Has had no family. Has always been somewhat stout. When thirty years of age had facial erysipelas, and this recurred several times, the last being about 7 years ago. Twelve or fourteen years ago had a serious illness accompanied by sickness and "swelling across the chest." The doctor who attended her said he was afraid of "water" — so she says. She recovered and went back to work, which however she had to give up about eight years ago, being too slow for mill-work by this time. As she was by this time 63 years of age I attribute no special importance to this. She then came into Dundee Poorhouse where, by the kindness of Dr Whyte, the medical officer, I saw her. In the Poorhouse she was usually able to take some share of the work, especially at the washing-tub, till a year or two ago. Since May 1888 has been more or less in hospital, but only for a time confined to bed, through, I understand, an attack of catarrhal pneumonia of the right base. Says her speech has been thick for many years — even indeed since the loss of her teeth. No further light can be got on the duration of the disease at present interesting us. The face is swollen and the natural contour blotted out. The cheeks and lips are bluish and the rest of the face wax-like. The oedema is very marked, but is assisted by subcutaneous fat to a considerable extent.

There is slight pitting on pressure behind the ankles. The voice is feeble, rough, and "cracked". The thyroid gland is not to be felt. Sensation is dull and voluntary movements slow in inception. She takes e.g. a considerable time to get up from a seat. The intellect is clear, the memory defective. The teeth are all gone. Hands and feet are generally cold. Temperature subnormal. The urine is clear, pale, Sp. Gr. 1014, without albumen. The quantity is about 25 ounces. The salivary secretion is sometimes excessive, sometimes very scanty. The lachrymal secretion is generally excessive. There is some tendency to haemorrhages here and some weeks ago there were three patches of discoloration on the face from subcutaneous haemorrhage. Thirty or forty years ago patient remembers that she bled very profusely from trifling cuts.

Heart normal. Lungs show nothing but medium crepitations over both bases. The note of this case was taken in the beginning of November 1889. About the beginning of February she appeared to be getting weaker with more cough and with both sides of the chest more full of mucus.

This went on, the patient gradually getting worse until the middle of March when she got much worse, but apparently only with the symptoms of cardiac and senile failure, and died after two or three days semi-coma.

Dr Whyte kindly allowed me to make a P.M. examination. There was a group of puckered cicatrices at the apex of the right lung with some calcareo-caseous matter

lying beneath them. From this as a centre apparently the whole three cavities of the body had been infected with military tuberculosis. The brain was atrophied (senile) and the pia mater scattered over with tubercle at the base. Both pleurae and the substance of both lungs had military tubercle. The peritoneum was very much thickened being about a third of an inch at some places and plentifully strewn with recent tubercle. The thyroid gland was converted into a firm nodular mass of fibrous tissue about the size of a walnut on the right side and rather less on the left. On microscopical examination I could discover nowhere any trace of remaining gland substance, nor even any of the groups of cells which are described as being the representatives of the gland acini in many cases of fibrous degeneration.

The foregoing cases are all I have had under personal observation. But to complete ~~the~~ statement of my acquaintance with the subject, I may say that in addition I have seen two cases in Morningside Asylum in the winter of 1880-1, one case under Professor Greenfield in Edinburgh Infirmary in the winter of 1881-2, and one case under Dr J. B. Macleod in Dundee Infirmary about 1886 — making with those I have dwelt on at length twelve in all.

B. Conclusions.

If I may judge from my own experience Myxoedema is by no means a rare disease — certainly commoner than any of the primary scleroses of the spinal cord except perhaps Locomotor Ataxia, or than abdominal aneurism or than Leucocythaemia. And I cannot think this experience gives a very incorrect reflex of the prevalence of the affection. For of its incidence the numbers in hospitals give as yet an imperfect idea. Cases of Locomotor Ataxia or Abdominal Aneurism or Leucocythaemia can hardly fail if they occur among the lower classes to find their way into hospital: for complaints like these all for some reason or other come for advice to a medical practitioner, who recognizing them and does all in his power to get them for a period into a hospital.

But Myxoedema does not always come under the physician's eye. Though popularly it ranks as dropsy, yet the mental peculiarities of those affected, which never escape observation, lead the relatives to put down the dropsy to the weakness attendant on a final breaking up of the system, and among the lower classes there is no strenuous effort to prolong the life of those of their number who, when past the childbearing age, shew symptoms of breaking up. The doctor is not called in in consequence until some complicating disorder immediately threatens life, and

at the same time obscures the diagnosis. But even were he called in at an earlier period the number of practitioners who have learned to recognise such cases is yet small, and the chances are that the diagnosis will be missed for in most instances for some years to come.

As yet ^{then} the cases do not come of their own accord to the practitioner, are not brought by the anxiety of friends, and are not always detected when they do come. So there is some ground for saying that the hospitals which are filled from the working class portion of the practitioner's patients do not represent fairly the actual incidence of Myxoedema in the population.

Neither can any conclusion be drawn from observations in Asylums. For though almost all show mental peculiarities, it is only in a few that these depart so far from the normal as to require ^{re}constraint and seclusion. Only two of my cases (Nos. 1 and 6) were at any time inmates of Asylums, and in only the former of these was the insanity co-existent with the other symptoms of Myxoedema and clearly due to the general constitutional condition.

The interest of Myxoedema is a peculiar one. It is so unique a disease and the study of it, so far as we can pursue it at present, casts so little light on the questions of general pathology, that few workers at any branch of Medical Science will be led to it in the natural order of

study. The complex of signs and symptoms marking the disease presents little difficulty to diagnosis; and there is no use made of the numerous methods of physical examination which reveal to us a body of knowledge of which those outside the medical profession are wholly in ignorance, and in the systematic practice of which lies a great part of the charm of our calling. It runs the risk of being simply a curiosity; and it is necessary to cast about pretty widely before we can take it up into the circle of medical knowledge.

As a Clinical Entity it is admirably named *Cachexia Strumipriva*, which if applied to *Myxoedema* is at once a name and a definition, and is actually as good and as complete a definition as our knowledge at present permits. Beyond the fact that in these cases the Thyroid Gland is placed out of function — it does not matter whether by atrophy or by fibroid degeneration — we know little else that can be demonstrated by the microscope. The circulation is feeble, the skin and subcutaneous tissues have undergone changes which may be briefly described as degenerative, and the psychological characteristics have altered so much as to make of the patient another personality altogether in the eyes of those around her. This may be illustrated by the case of Mrs Robertson. Born and brought up in Dundee, she spent many years in London,

and on her return to her native town, her sister, who had never seen her during her whole absence, could not recognize in her any one of the personal characteristics she was familiar with twelve years before. The only analogue which can be laid alongside this would be the change which sometimes passes over a boy or girl between the ages of 14 and 19 — the years in which the alterations in the physical development take time to fully reflect themselves in the character.

All these features of Myxoedema have a pathology and a morbid anatomy somewhere, and the absence of the normal tissue of the thyroid gland is quite likely enough the prime mover of all these changes. But how it effects the changes, and how the alteration in the physical and mental characteristics surely follows, are questions to the answers to which our present methods of research give no help. Nay, more. The whole cycle of changes is of such a character as to render it improbable that our present science of pathology ever will explain it. There is no other disease at all like Myxoedema in any close way. Addison's Disease comes to mind when we remember that in this the function of the affected organ is equally unknown and mysterious, and the results of disease in the same almost equally wide-spreading; but even in Addison's Disease it is conceivable enough that

if we knew more of the supra-renal capsules, we should possess a fairly rational notion of the morbid process; while it is doubtful if a knowledge of the functions of the thyroid gland would cast much light on Myxoedema.

It is a degeneration of the whole organism, On the physical side there are no changes which exhaust the vital powers and lead surely to death. The eighth case on my list, though seventy-two years of age, died from military tuberculosis, which would kill anybody; the third case is now affected with cardiac dilatation, to which any woman in the second half of life is equally liable; the second case died probably from cerebral haemorrhage. But undoubtedly the system is weaker to withstand the attacks of illness, and the life of cases of Myxoedema is a precarious one after the establishment of the disease.

On the psychical side there is distinct involution. The capacity for readily reacting in a rational way to external stimuli is impaired along with the powers of memory, of reason, and of will. The feelings and emotions lose their keenness. The woman becomes garrulous, willing to tell her whole history at great length, remembering fairly well what has taken place long ago, taking less note of the present. In short, instead of the mental charac-

teristics of 40 or 50 she has those of 75, 80, or 85. It is not so easy to follow the senile type when the patient becomes actually insane.

Delusions of suspicion with maniacal outbursts seem to be the commoner manifestations in these cases. But my impression is that actual insanity is a transitional and temporary phase in the mental history of Myxoedema.

It would be very difficult to connect such a series of changes as these with the condition of any of the organs of the body. ^{It} ~~is~~ connect them, that is, in a rational way. ^{We} connect the changes of puberty in the male with the maturing of the generative organs, and if the testicles are excised before puberty we know that these changes do not occur. But how the growth of the testicles influences the nutrition of the skin we do not know, and our present physiology is not within sight of a solution of the problem. The cause of Myxoedema is equally obscure, and the predominance of cutaneous changes in both is a circumstance which is more than a mere curiosity.

Finally when we place side by side the mental changes of puberty and those of Myxoedema the developmental significance of both comes out very strongly. In the former the differentiation

of the mental structure— the psychoplasma— is completed and we see what for good or for evil the man or woman is likely to become. In the latter regression is so marked that in a year or two the affected person becomes practically useless as an effective working unit in society. There is an apparent sameness in the mental condition of all cases of Myxoedema, but that is probably due to the distance from which they are viewed. They have probably as many individual peculiarities inter se as are possible at the very much lower psychological level at which they find themselves. The conclusion of this Thesis then is, that, while the maturity of the generative organs is necessary to bring about the evolution of the individual at puberty, the integrity of the thyroid gland ^{during the whole life} is essential to the full development and maintenance in perfection of his bodily and mental characteristics.

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