Thesis

Acute Hallucinatory Insanity — a type of the Confusional Insanities, with clinical notes.

[Signature]
Acute Hallucinatory Insanity — a type of the Confusional Insanities, with clinical notes.

What are known in Britain as the Confusional Insanities, in Germany and America as the Exhaustion Psychoses are yearly becoming more differentiated and more clearly recognized as definite entities. This is probably due to the increasing attention paid to the problems of Insanity, which every year becomes of more importance from the fact that each year shows an increase in the number of the insane, both in our country and in others. This increase may be due to the fact that Insanity is now more clearly recognized as a disease for which special treatment should be sought even as hospital treatment is sought for serious physical disease; it may be due to the fact that there is a growing national tendency to shift responsibilities on to the broad shoulders of the State, and so trouble some relatives are now more speedily certified insane and sent to the comfortable county asylums. Therefore many able alienists argue that the increase of Insanity is only apparent.

As Dr. John MacRae, who strongly endorsed this view says in his Raisinon Lectures 1906:

"The recognition of Insanity as a disease by a community is very gradual and older notions as to
its supernatural origin longer for a long time even after the general acceptance of newer ideas. Consequently there is no diminution in applying for public relief among the less educated portions of the community, again as the occurrence of insanity in a family is rightly or wrongly regarded as a social disqualification, a reproach or stigma. The same members of the family make every effort to conceal it.

But it must be apparent to every careful observer of the supposed causes of insanity what an increasing large number of cases of insanity are ascribed to "weakness of mind" and "anxiety," and these are causes which are certainly not diminishing in the 20th century, nor in spite of constant efforts to educate the public on the part of those who have studied the subject from every point of view is there any diminution of the cases said to be due to indulgence in alcohol.

In Scotland alone in 1868 there were officially registered 5,824 lunatics of all classes or 1.72 per 1,000 of the population—in 1901 15,899 lunatics or 3.5 per 1,000 of the population an increase of 73 per cent while the population had only increased 42 per in these 43 years (Kraepelin). In other countries there is the same increase to be noted. Kraepelin in his Clinical Lectures on Clinical Psychiatry (Introductory...
lecture: Second Edition) says: "And the number of the insane which will hardly be exaggerated if we estimate it as amounting at the present moment to 200,000 in Germany alone is apparently increasing with the most unfortunate rapidity. This increase, he proceeds to say, "may depend to a great extent on the more highly developed care of the insane and the increasing difficulty of treating them at home and may be only apparent. But considering from one quarter to one third of the cases admitted to our asylums are due to the abuse of alcohol or to syphilitic infection, and that these are causes of which the extension is certainly not diminishing, one cannot but suppose that the number of the insane is increasing not only in itself but also in proportion to the population."

Whether this be so or not, the fact remains that there is a wealth of clinical material now available in asylums and asylums for the insane, not to be found some fifty or sixty years ago, and an ever-increasing army of teachers working in their wards and laboratories to throw some light on the problems of insanity, which mean so much to a nation's present and future health.

In the matter of clinical observation Germany probably leads the way, one
well-known clinics having fourteen physicians to
three or four hundred beds), and is at present leading
the way in the matter of nomenclature. Whether the
divisions and sub-divisions of classes of mental disease
which come to tripping to the tongue of disciples of
Kraepelin will endure in the march of progress,
remains to be seen. But when it is considered that
such classifications frequently mean more pain
than observations, it must be admitted that the more
closely a disease is known, the greater is the probability
of a desirable treatment. Here each patient with a
cough to be simply put down under the heading
of the most prominent symptom of his disease-
cough-and a similar treatment given to the cough
of chronic bronchitis, to the cough caused by aortic
aneurysm, to the hacking cough of phthisis, if
advances would be made in reducing the lists of
those so suffering; and in the same way not only
the most prominent, but all symptoms must be duly
weighted before cataloguing a patient suffering
from mental disease, and thus the two great
divisions of Mania and Melancholia are now being
depicted by many of the cases, which according
as they presented a wave of exaltation or
depression of mind were formerly classed
among them. One of the definite groups which has thus emerged is that of the Confusional Insanities. These insanities can be proved to have a distinct physical foundation—a foundation which cannot yet be proved in Mania, Manic or Paranoia. Consequently there is a distinct basis for treatment and a hopefulness in approaching them which comes from a sure knowledge and this is still being sought by clinical research into the secretions and excretions of the body, into the composition and qualities of the blood, lymph and cerebro-spinal fluid; by pathological research into organs and tissues and their fluids. From the medical point of view, says Kraepelin, "it is disturbing in the physical foundations of mental life which should receive most of our attention" and where these disturbances can be definitely located and a certain type of mental disease associated. For with a certain bacillus remains to find a method of attacking the bacillus by serum, antitoxin or vaccine. The latest research into General Paralysis of the Insane, carried out at the laboratories of the Scottish Asylums proves that disease to be caused by a bacillus of a different nature which is found in the blood, cerebro-spinal fluid, in the urine and in the adventitial lymph-sheaths of the cerebral vessels (Manson).
Lectures, 1906) and the conclusion that the disease is micro-organismal is accepted by some of our leading British alienists.

If General Paralysis of the Insane be excluded, no micro-organisms have so far been described for the Confusional Insanities; clinical research bases them upon an auto-intoxication. This toxic theory of disease while it may be an easy one to adopt—since every observer must grant that in the insanities of depression of reproduction, of exhaustion, evidence of some physical impairment is present—yet has its opponents who claim that the mental disease is the primary event, and present the man who suffers from all physical symptoms and yet has no mental disease—here again the question of stability of brain functions—an auto-intoxication which would have no effect upon a stable brain causing marked mental symptoms in a brain already made or weakened by febrile disease or excess.

Two such auto-intoxications—by auto-intoxication is meant the production of toxins within the body—may be said to exist; those arising from disease in the bodily organs, viz. the symptoms
produced by disease of the thyroid gland, the kidneys, the pancreas etc., and intoxications arising from the gastro-intestinal tract, which is held to be 

proven by the presence of indoxyl potassium sulphate in the urine.

With the toxic effects of 

disordered metabolism of the thyroid gland, of the kidneys etc. all observers are familiar and it is noted that mental symptoms are frequent and well marked when these organs are gravely diseased. The restlessness, excitement, and frequent general suspiciousness of a patient suffering from exophthalmic goitre are matters of common observation, while the toxicity of the products retained in the body in advanced Bright’s disease may cause mental symptoms of the acute type.

A further development of the theory of auto-intoxication is that advanced by W. Forb Robertson, who claims that senile insanity is associated with auto-intoxication and that senile insanity essentially represents a more acute and in 

some respects irregular form of the same condition, although no doubt additional factors are added. The evidence is to this mind "absolutely conclusive."


"Indeed, I would regard senile insanity as the best example that we have of mental derangement determined by an auto-intoxication. The diseased are cachectic. The tissues atrophy. In shows some other form of chronic malarial change, the lungs are often emphysematous or present evidence of chronic congestion. Derangement there is frequent chronic bronchitis—the stomach is dilated and there are generally signs of imperfect intestinal action. All of these malarial conditions of the internal organs imply incomplete and perfected metabolism, and consequent auto-intoxication. (Pathology of Mental Diseases.)

The pathological evidence of a poison present in the body in the Confusional Insanities is that adduced by the Electrolysis in the blood and by the presence of inorganic potassium sulphate in the urine of such cases. The latter substance is derived from uric acid (Eg. HNO) which is the product of alluminous substances in the small intestine. The acid is absorbed into the blood from the intestine and then oxidised into endoxyl (Eg. H, NO) this combines with potassium sulphate and is eliminated in the urine as endoxyl potassium sulphate.
The merest trace of this substance is present in normal urine; from .005 to .025 grains in the urine for twenty-four hours of a healthy person on mixed diet is the amount given by Neubauer. Vogel, such a quantity giving only the faintest of any colour reaction in Daffy test, which is that commonly used, whereas in the urine where indoxyl potassium sulphate is in excess, a very deep blue colour, almost black, is obtained.

An interesting contribution to the study of autointoxication with special reference to the presence of indoxyl potassium sulphate in excess in the urine was that given by Dr. Towsend in a paper to which was awarded the bronze medal of the Medical Psychological Association.

Dr. Townsend maintains that (1) indoxyl potassium sulphate in excess indicates abnormal putrefaction in the alimentary tract; such processes resulting in formation of toxins which becoming absorbed are poisonous to the animal economy. (2) that the putrefactive process indicated is greater or less in degree by the amount of indoxyl present it may be primary and convulsive and (3) shows these putrefactive processes to be found to be merely secondary and only to be considered as the cause of disorders
metabolism consequent upon changes in the Central Nervous System, they will have considerable importance, inasmuch as they indicate a condition of toxemia, a grave departure from health.

The process of leucocytosis by which is meant a greater amount than 12,000 leucocytes per c.cm. of blood has been firmly established as a diagnostic symptom of intoxication for many years, and by its aid many a surgeon has been guided as to whether or not to operate in a doubtful case of internal inflammation. The severity of the process and its increase, being estimated by the amount of increase of the leucocytosis. Leucocytosis is usually accompanied by pyrexia, another diagnostic symptom of intoxication. Pyrexia.

Leucocytosis however may be absent as in typhoid, though it occurs in that disease when the infection becomes miscro and in typhoid fever in both those diseases there is marked pyrexia; in some intoxications there is leucocytosis but no pyrexia.

Now in what forms of insanity are these factors met and what is the prevailing mental state in them?
The British term of Confusional Insanity is in itself explanatory. The most striking mental feature of Confusional Insanity is confusion of the type common to the delirium of fevers. Such delirium presents hallucinations of all the senses, fleeting delusions, confusion of thought, incoherence of speech. These symptoms are also met with in delirium after surgical operations and in cases of shock, where the temperature is subfebrile. Many of the Confusional Insanities are subfebrile.

No one division of the Confusional Insanities may present all these features: in intoxication by alcohol, morphine, cocaine, hallucinations and illusions are the most prominent features.

In that form of alcoholism known as Delirium Tremens hallucinations of the sense of sight about the patient, in cocaineism they are principally of the sense of touch. In alcoholism at least of these drug-intoxications Dr. Lewis Bruce to whom we owe so much for his persistent and successful investigations into the proofs of auto-intoxication has found a distinct Erythrocytosis in the blood.

Many observers however think that the mental symptoms observed in these
Intoxication (alcoholism, plumbism etc.) are due to the secondary effects of the toxin on the \textit{væso-motor system} and in the case to be described later, one of extreme anemia. Hallucinations of great fineness of all the senses such as are found in Alcoholism, Coma, were the prevailing feature. Dr. Maurice Craig of Bethlem in his Psychological Medicine goes so far as to say that he believes constitutional insanity to be largely due to the altered blood pressure in the splanchnic area affecting the cerebral blood supply and that the ensuing nutritional changes may lead to mental disorder in unstable persons' point of view. That with increased pressure on the splanchnic veins as in pregnancy the patient is usually found to be melancholic and the blood pressure has been found by this observer to be consistently high in melancholia, while when the pressure on these vessels is relaxed after puerperium the prevailing mental state is that of Mania and in Mania the blood pressure is almost invariably low. The auto-intoxicating theory however has definite proof, while the other is the mere statement of what may be.

The insanities of reproduction
of pregnancy, the puerperium and lactation may also be classed amongst the causes of Confusional Insanity, though the prevailing mental state in the greater number of these is more constant than in Confusional Insanity generally, where there is no constant emotional state, the patient being depressed at one time and elated at another.

The Adolescent Insanity of Clouston to what German alienists group under the somewhat puzzling title of Dementia Praecox with its subdivisions is also found to belong to this group, leucoceytosis being present in the blood of leucocytosia examined by Dr. Lewis Bruce in several cases examined by the writer; and Dr. John MacPherson classed General Paralysis of the Insane among them also. The last two groups are not accepted by all physicians, though General Paralysis of the Insane now offers strong proof of itself.

In a paper read by Dr. F. O. H. Raleigh at the Psychological Section of the British Medical Association annual meeting 1905 based on the study of 18 cases of Confusional Insanity, evidence of pernicious wayfound in all named leucoceytosis of greater or lesser amount in the
blood with indifferent persistence each hour in the
seven in the majority of the cases. The mental
symptoms he notes as characterizing this type of
insanity are confusion, the absence of emotion,
a fixed facial expression and a purposeless
resistiveness.

The purposeless absence of emotion
should rather be described as the absence of any
fixed form of emotion; such patients may
display occasionally great emotion without
adequate cause, creeping bitterly for hours
again displaying an equally edacious
cheerfulness, but most frequently the mental state
is one of apathy and indifference as indicated
by the blank facial expression.

The purposeless resistiveness is
also indicative of the confusion of mind. The
patient objects to being taken into some room
when there, objects to leave, will not be taken
to table and when forcibly taken to table will not
leave it and so on—a symptom to which the
name negativism has been applied by which is
meant an obstinate resistance to any
external influence. The processes of
thought are as slow and so rapidly blocked as

were, that on any new influence coming into play the patient stands still mentally or physically.

The confusion of mind in such patients is also shown by their want of comprehension, as shown in their want of orientation as to time and place, by their mistake in confusing the identity of those around them by their inability to relate any consecutive story involving memory. Speech may even be made up of single incoherent disjointed words and phrases while the patient cannot even express one idea clearly another interrupting it, as it is being related. Such patients can be easily induced to contradict themselves or be distracted from their story by a sharply put question, which at once causes them to lose the thread of their discourse. Their actions are helpless and they are usually quite unoccupied and devoid of any interest.

The physical symptoms of the Confusional Insanities naturally vary much with the varying types included in this class.

One type of these insanities has been named Acute Hallucinatory Insanity...
and although the name may be objected to as one in which the most prominent clinical symptom named the Hallucinations is taken to name the disease, yet the same objection applies to most of the recognized types of insanity.

Acute Hallucinatory

Insanity is recognized in this country, and is fully described by Dr. MauriceCraig of Bethlem in his recent work on Psychological Medicine, in Germany, where it was earlier known as "Hallucinatioelk Verwirrtheit" or "Hallucinatioelk Wahnsinn" one of the best descriptions of it is that given by Prof. Felsen in which he says "together with great comprehension of particular impressions, a far reaching incapacity to connect them and to gain an understanding of the situation and of the events taking place, a far reaching great divertibility with little attention, hallucinations, depressive, changeable delusions, Sad apprehensive depression, irritability, and restlessness, great weakness of will (Lectures on Clinical Psychology) and says further that the combination of good perception and active attention with bad understanding of impressions, divertibility, emotional depression and delusions in action
is diagnostic of certain forms of anaemia, appearing also in acute physical disease where the basis of the disease is formed by infections causes or by exhaustion.

American writers describe Acute Hallucinatory Insanity as a form characterized by quickly changing delusions, hallucinations and illusions with confusion of thought and alternation of excitement, depression and stupor (London, Carter Gray - A treatise on nervous and mental diseases).

Hallucinations of all the senses are the most constant feature. The patient hears voices calling to him, birds-crying or beautiful music. Diamonds and glittering objects lie scattered on the floor, insects crawl on the wall and bedclothes. The bedclothes themselves appear spotted with blood, and he feels the stings and bites of insects crawling on his person or complains of the flies which enter his room, while food may be refused because there is something unpalatable in it.

Quickly changing delusions are a less prominent feature - the patient may believe he is called upon to perform some urgent mission and must leave at once to do it. His relations are confined in
another part of the building and are in distress; this may cause much depression.

The memory is most uncertain and the patient cannot relate the events of the day before, has vague ideas as to time and place, mistakes the identity of those about him, shows marked loss of attention and may be unable to answer correctly the simplest question. There may be excitement, there is always well marked restlessness, little food is taken, sleep is very deficient.

Conduct is largely influenced by the many hallucinations - the patient stuporized because of the insects crawling on his clothes, refuses to get out of bed because the sheets are soiled with unspeakable defilements, refuses to leave the room because he can hear his children outside the window, refuses food because of poison in it and so on. Hallucinations of hearing, sight and touch are by far the most common, those of taste and smell are rarer.

Physically such patients are always in a poor state of nutrition, the temperature is usually low and the pulse irregular and feeble. The deep reflexes are usually exaggerated.
Little food is taken and sleep is deficient.

There is usually marked constipation. The urine may contain urocylic potassium sulphate.

There may be well-marked leucocytes in the blood and various forms of anaemia may be present.

Etiology.

As a rule persons suffering from this disease have a poor heredity and are themselves highly unstable. It may follow acute fevers, such as typhoid or influenza, erysipelas etc.

It may follow conditions producing great loss of blood as parturition or conditions showing alterations in the quality of the blood as the severity of anemia and is described as following excessive mental strain or deprivation with worry.

(Defendoff. Clinical Psychiatry)

Course

The course of this disease is usually slow from a few weeks to a few months. Much depends on the physical cause and how quickly it may yield to treatment. Stopped the physical cause he one of the exhausting fevers, the mental symptoms gradually clear up as the patient progresses to good nutrition. Stood there have been great losses
blood in child with some months may elapse before
the patient regains normal mental health and
the severe anaemia is over perhaps cannot hope.

The disease is always characterized by
remissions when the patient becomes comparatively
clear and restlessness ceases only to return again
in a greater degree it may be in a few days.

Real improvement is slow and is shown by
learning motor unrest with a clearer perception of
surroundings of time and place and a diminution
of hallucinations though a few are apt to return
even after the patient is comparatively well.

During convalescence the patient is irritable
and very easily fatigued by either physical or
mental effort such as prolonged conversation
as letter writing. Sleep frequently remains very
deficient for months

Diagnosis

Should the disease develop after one
of the acute fevers or child with its recognition
is comparatively rare -- developing after mental
shock or strain General Paralysis of the Insane
might be thought of but is easily excluded by the
lack of the physical signs characteristic of the
latter from manic-melancholia it is differentiated
by the greater confusion of thought, which remains even in the quiet intervals, the absence of any fixed emotion, and the purposeless restlessness. Dependence would also differentiate it from cataleptic excitement by the fact that the cataleptic patient in the midst of their excitement retains fair apprehension. They also present the characteristic signs of cataleptic—catalepsy, negativism, senility, mutism, and stereotyped movements.

From Delirium Tremens, morphia coma, and cocaism—both of which acute hallucinatory delirium has many affinities—it is differentiated by the history and nature of the case.

**Prognosis.**

The prognosis is good, recovery usually taking place in a few weeks or months, but death may occur from exhaustion or heart failure or from severe intercurrent disease.

**Pathology.**

Little is known of the pathology of this condition as death seldom occurs from it. In the few cases where autopsies have been made widespread cellular changes in the cerebral cortex have been described. These changes which chiefly consist of more or less disintegration of the Purkinje's and...
Staining of the achromatic substance are almost always present, but are not pathognomonic as they occur in many other diseases. Hypersomnia of the meninges has also been observed and an infiltration of leucocytes into the peri-vascular and peri-cellular spaces.

Treatment

The main indication for treatment in our present state of knowledge are two in number, to improve the nutrition, and to secure rest, physical and mental, for the patient, just as in the treatment of diseases caused by the tubercle bacillus and particularly when it invades the lung. Every effort is directed to building up the tissues of the body to the fullest extent that in their greatest vigour they may cope with the invading micro-organisms. We have remembering always that the primary seat of the auto-intoxication is most probably the alimentary canal and that it cannot therefore be forced as though it were in a healthy state, the same goal should be directed towards securing the maximum of nourishment for a frame suffering both mentally and physically.

Food should be light and easily digested and given freely often in the form of tea and the
Early stages of eggs and milk. Alcohol should be avoided if possible and its value as a disease-saver should not be forgotten and as such it may be given in amounts ranging from 4 to 8 ounces, especially if the pulse is rapid and low tensioned. It is of great value in collapse and may also induce sleep if given at night. Later, as digestion improves full convalescent diet should be given with drugs which are foods and stimulants to the appetite. Salt extracts and linseed oil etc. are then most valuable while of general tonics none are more useful than ginavitum than ginavitum. The foremost according to Bunsen of the hunger-producing digestive and motor and nerve-stimulants and therapeutic agents. The dilute acids especially dilute hydrochloric acid has distinct value in raising the blood pressure which is almost invariably low in this disease.

It may be thought that as in this disease there is evidently an autointoxication and that one of the alimentary tract medicated antisepsics might advantageously be used and carbonated soda, salol, salol, arsphenamin and other similar drugs occur to the mind. None of these however have been found of much value and the specific treatment of this
auto-intoxication accounts a fuller knowledge of the process.

The bowels should be kept freely open throughout - the late Sir Andrews Clark advised to try that certain forms of anaemia yielded to this treatment alone - but it is better to attack anaemia if present directly, by the various forms of iron or arsenic in a form easy of assimilation.

In grave emergencies such as collapse, hypodermic injections of strychnine or digitzine are indicated and strong hot coffee per rectum is of great value. Where the pulse is very rapid and vacillating, and the mental unrestfulness extreme, infusions of normal salt solution with the subcutaneous closure of the chest or back in quantities of not more than a pint and a half at a time, frequently relieve these symptoms with astonishing celerity.

To secure rest, physical and mental, the patient should be kept in bed entirely for the first few weeks of the disease. If the bed can be relented into the open air as convalescence proceeds so much the better. All return to more active habits should be carefully guarded as the patient is peculiarly liable to overfatigue during convalescence. For the same reason all visits of
friends and any mental exertion such as after
writing should be prohibited till the patient
is well on the road to mental health and then
allowed with the greatest caution.

As an aid to securing rest many
physicians recommend the warm bath which
has also the advantage of raising the blood pressure
and promoting sleep. The bath should be of a
temperature of from 98°7 - 100°7 and the patients
stay in it gradually prolonged from half an hour
on the first occasion to six or eight hours later.

Should the patient exhibit great objection to
centering the bath a small dose of Hyoscine 1/12
gr. or Euphalon might be given. Cold cloths should
be kept on the patient's head while he is in the
bath and he should be thoroughly well rubbed on
leaving it and kept as quiet as possible afterwise
that the benefits of the bath may be prolonged. If
the bath cannot be used a wet pack or series
sponging of the patient sometimes has the same
beneficial effect.

Where the motor restlessness
is extreme mechanical restraint should be
avoided. A padded bed and room is some
dtimes necessary and the patient should be
constantly watched to prevent injuries.

Every effort should be directed towards securing sleep by natural means—such as a quiet, dimly room, light, warm coverings, a little food or alcohol given at night, a warm bath—the prolonged hot bath in extreme cases and the infusion of normal salt solution in cases of great current.

Of hypnotics there is great choice and the physical state and psychoses of the patient must largely influence their use.

Such drugs as chloral hydrate which is too depressant, potassium bromide valuable chiefly in the very early stages of insomnia and excepted from its uncertain action on the kidneys should be avoided if possible.

Paraldehyde is both hypnotic and a cardiac stimulant, but is frequently very objectionable to the patient—Ternal (dimethyl ether carbolic acid) given in small doses of from 8 to 15 grains frequently produces a refreshing natural sleep and being practically tasteless and easily soluble in hot fluid is easily administered.

Ternal is more effective than chloral hydrate.
but both are of little avail in acute insomnias. Thalidomide hydrobromide is sometimes given as a preliminary to the prolonged bath treatment.

Dr. Maurice Craig recommends Amylose hydrate as being of great service in Acute Hallucinatory Insanity as an hypnotic and also states that if the patient is in a very weak state with a feeble pulse, opium is indicated and a grain of to fifteen minutes of the mixture every four hours, frequently acts with remarkable effect and brings about a general improvement in the physical and mental condition. (Psychological Medicine). Opium hydrate is a drug to be used with the greatest caution in the treatment of any form of insanity and may do more harm than good by its effects on the general nutrition.

Convalescence in this form of mental disease should be of a slow and quiet character. There is always much physical weakness and months may elapse before the organs of the body are restored to strength and usefulness. Its weight is always a good index of returning health and ought to rise slowly and steadily and be at least normal before the
In regard to having recovered.

Great care should be exercised to in permitting patients to take up their former duties and they or their relatives should be warned as to the dangers to be avoided in the future - loss of weight being one of the most prominent physical danger signals of an impending relapse while any source of either physical or mental exhaustion, such as strain or anxiety is fraught with the greatest risk to a brain weakened by previous disease.

The following case is of some interest from its arising in the twelfth year of severe anaemia following parturition from the fact that the anaemia was associated with short blunt febrile attacks and from the fact it is rare in acute hallucinatory mania.

Mrs. F. F. aged 32 years was admitted to Holloway Sanatorium April 15, 1905. This attack was said to have been her first and lasted four months and came on gradually. The improper cause being fevers or lumbago in 1902. She was not epileptic, suicidal or dangerous to others.

The certificates on which patient
was admitted stated that she was completely altered in her manner. She seemed bewildered to the doctor. She heard voices, conversations and music also heard people talking about her being a bad woman and suspected that the police were watching her.

There was not any family history of insanity, epilepsy or any grave physical disease.

The previous history of the patient was as follows: She had been a healthy girl married early and had had five children of whom four were living. The youngest was born twelve years ago. At the birth there had been severe flooding and since then severe anaemia for which treatment has been of no avail. Since that time also there had been amenorrhoea.

In 1902 on a hot day in summer patient was said to have had sunstroke. For two days the temperature was 104°F and during these days she lay like a log recovering quickly thereafter without showing any mental symptoms.

In 1903 there was another
Similar febrile attack not associated with lead and lasting 3-4 days. In 1904 another short febrile attack from which patient recovered speedily. In that year she also suffered from pyc-alveolitis and all her teeth were removed.

Patient was supplied with artificial teeth, but only wore them for a short time as they were uncomfortable and since then has worn none.

Blood examination was said to show degenerated corpuscles.

The mental symptoms were first observed some four months before admission, patient being sleepless at night, then convinced the heard voices outside her bedroom window, latterly insisting that people were talking about her and saying she was a bad woman.

Patient had been treated with Potassium Citrate, Ammonium Bromide, Phenacetine and Quinine - all attempts at giving any form of iron had been abandoned for some time.

**Physical condition on admission**

Patient was a tall thin woman with a peculiar, waxy, pallor of face accentuated by a cloud of dark hair. There was absolutely
no colour in the face, all mucous membranes were very pale, the hands seemed semi-transparent and were also of a waxy pallor. The teeth were all gone.

The heart sounds were markedly feeble although no adventitious murmurs could be heard. The pulse was 78 regular in rate.

Amenorrhoea as stated had existed for twelve years.

The lungs and abdominal organs presented no signs of disease. The deep reflexes were present not exaggerated, organic and superficial reflexes were healthy.

The urine was of a rather low specific gravity 1.015, pale in colour, acid, and presented no trace of albumin, sugar, uric acid, potassium sulphate or other abnormal constituent.

Patient refused to be weighed, but appeared much below normal weight.

The blood examination to which patient objected very strongly, suggested...
could not afford to lose one drop more of blood showed hemoglobin 75% and Red Blood
Corpuscles 1,125,000 and the blood films only slightly degenerated corpuscles such as one would find in a septic chlorosis, no nucleated red cells. Leukocytes unfortunately owing to defective apparatus were not estimated, but from examination of the blood films seemed to be slightly increased in number and showed an increased proportion of polymorphonuclear cells.

Mental condition on admission.
Patient had a dreamy, faraway expression, moved languidly, seemingly apathetic and quite indifferent to her surroundings. Her attention was not easily aroused; questions having to be repeated twice and made then answered with effort. Patient returning to her former listless state. Her mode of speech was slow and drawling and words seemed to come out with an effort.

Patient resisted physical examination, strongly and could not be induced to see
any reason for it, giving no reason for her refusal to submit to it.

Her conduct was restless. She could not be induced to sit down, nor to stay in bed at night; constantly walking to the door, whenever she was. This restlessness being the means of her hallucinations, to be described later. She required help in all toilet operations, but attended to the calls of nature. She refused most of the food offered to her, vehemently, without giving any reason for so doing.

Her memory for recent events was much impaired and she could not relate any of the events of the last few months, becoming quickly confused in any attempt to do so, and retreating into bewildered silence. She could however, tell of her childhood and early married life and also give the ages and birthdays of her children.

Patient could not understand where she was "some strange place from which she must get away" and seemed puzzled by the various larger articles of furniture, why they were placed where they
were etc. etc. She mistook the identity of those about her, acting as if she had not seen them before and calling them by the names of her friends. Patient did not understand that she was mentally affected in any way but knew she was thin and weak.

Hallucinations of sight and hearing were very vivid, patient stating that voices had told her day and night for weeks that she was a bad woman of immoral life and that she heard those voices outside now and they gave her no rest. She also described with great vividness a face painted and powdered which looked in upon her through a window. This face seemed to be constantly worrying her and patient was continually trying to get away from it and consequently walked up and down mostly the night. The one delusion, which she expresses that the police were watching for her seemed to arise from the ever-present hallucination of voices telling her she was a wicked woman from which she drew the conclusion that the police ought to be on her track.
On April 18, three days after admission, patient still restless and much under the influence of hallucinations, when an ordinary soap and water enema was being administered to her, she had a severe attack of syncope which was quickly relieved by Brandy in a tablespoonful dose. Later in the day a similar attack occurred without apparent cause, patient being in bed and at rest at the time and from this also she recovered speedily.

Thereafter patient was kept in bed till April 28 being given a cardiotonic also Lapis Arsenicalis m. v. per in die which she continued to take in increasing doses during her residence in the sanatorium.

On April 21 it was noted that patient was much quieter and had no visual hallucinations for three days.

On April 28 patient got out of bed and refused to return to it, alleging some uncleanliness of it of which she would not speak as such things were not fit to be told. Under the influence of formaldehyde she returned to bed and slept for some hours...
laid more at 3 a.m. and spent the rest of the night on a couch by the night nurse.

The hallucinations continued to grow. In addition to her usual distress after this and patient had to be removed to a padded room two days after as she kept running to the doors and windows and was in danger of injuring herself.

Hallucinations of hearing were constant. Voices gave her no rest, accusing her of evil deeds of all manners of sins, while the walls of her room were covered with insects which also crawled on her dress and person and stung her until objects of all descriptions glittered on the floor. Consequently, she was interned in that hospital to get out of her room in obedience to the voices calling her, standing loudly in answer to them, fleeing naked together all her clothing and clothing to catch them on her body. Stroking to pick up the glittering objects on the floor, refusing food because (mysteriously) it was not fit to eat and sleeping very badly. The delusion that her children were in the same building as herself was also very active.

This acute state of hallucination continued...
Cared for a week during which patient had little food and they with great persuasion (due to external danger and risk of syncope and nutrient enemas being unavailable for the same reason, patient having once collapsed previously while a small soap and water enema was being given) such food as she would take was chiefly egg and milk with the addition of scarlet. During this period patient required constant hypnotics to enable any rest and usually took Veronal 30 gr. three times daily. Paraldehyde in 3% dose on a few occasions.

On May 7 patient was less restless and hallucinatory and was removed to a convalescent gallery where after breakfast in bed she was taken to a long chain out of doors and spent most of the day in bright sunshine, quiet but confused and bewildered, retaining firmly the delusion that her children were in the building and much troubled by voices.
night. No unusual or perceptual hallucinations were expressed. Nor was there any evidence of them.

On May 13 patient's blood was again examined, it having been impossible to do so before, and the haemoglobin was found to be 70 per cent and the red blood corpuscles 3,110,000, while the blood films showed no change.

On May 18 it was noted that the patient had improved considerably mentally and physically. No hallucinations were expressed and patient was taking her food better and sleeping well at night, able also for a short walk in the hospital grounds. Patient's relatives visited her for the first time on the 17th May and patient appeared in no way unduly fatigued by their visit. In the evening however the complaints of a feeling of dizziness and faintness and Brandt's test was ordered four hourly. At 8.30 a.m. May 18 after an enema given with all care by a nurse who had not known that enema were forbidden for this patient there was
sudden syncope. The assistant medical officer was summoned and found patient very exhausted, complaining of precordial pain. The heart's action was found to be very feeble and no adventitious sounds were detected, nor was it enlarged. Patient was given Ether 9:30 by the mouth and appeared relieved but at 9:30 a.m. the medical officer was again summoned and arrived to find patient motionless. He expired five minutes later.

A post mortem examination was obstinately refused by the relatives.

Patient's temperature was never beyond 98.8° F. during her illness, occasionally sinking to 96° F.

The striking features of this case were physically patient's peculiar waxy palor and general feebleness, mentally less confusion and bewilderment associated with vivid hallucinations, while delusions proper were few and influenced patient but little compared with the hallucination of sight, hearing, tactile sensation and taste.
The colour-index of patient's blood
would seem to suggest Pernicious Anaemia
and in accordance with this view she was
treated with increasing doses of Liquor
Arsenicalis, but the almost complete
absence of poikilocytosis, of megalocytes
or of either normoblasts or megaloblasts were
ratté against this diagnosis. Still it is to
be noted that Pernicious Anaemia is said
occasionally to follow parturition— in five
out of twenty-seven cases cited by Butler
in his Principles and Practice of Medicine
(1901) it followed delivery and although
oral repair to which the disease has been
ascribed by William Hunter—who held
that Pernicious Anaemia was a special
malignant disease associated often with
infection of the alimentary tract, especially
with oral repair could not definitely be
said to have been present in the final
resistance of this case, it was undoubtedly
present and most active in the later part
of patient's illness. It is to be noted too
that under treatment with Liquor Arsenicalis
there was some improvement.
blood corpuscles increasing in amount by one million.

The occasional febrile attacks from which patient suffers are recognized as being of fairly frequent occurrence in Pernicious Anæmatia and may in this case have been due to that disease, but are not usually accompanied by the fractional condition in which patient is said to have been on three occasions.

A fatal issue is common in Pernicious Anæmatia and is only to be arrested if the disease is recognized and treated early.

Whatever the form of anæmatia patient actually suffered from, the brain which had for twelve years withstood its imperfect nutrition, ultimately gave disturbance of function and that in the form of Acute Hallucinatory Insanity. As Clowston says in his Clinical Lectures on Mental Diseases (Edition V):

"The physiological effects of depriving the brain of part of its blood, of even of aterying the blood pressure are sufficient
in different cases to some extent. In this, as in other ways in human beings, the strong and the weak hereditary qualities of a brain come out. One man has merely, by reason of his rare tendency to faintness, a profound mental constitude and paralysis of volition, amounting almost to torpor; these being probably the purely physiological mental results of a bloodless brain. Another man becomes intensely super-sensitive and over-excitable, suffering torture from sounds and circumstances that in health would have been calmly borne; another cannot sleep; another has hallucinations of the senses; another takes convulsions long before the amount of blood is lost that necessarily causes convulsions; and another becomes delirious or is attacked with insanity. The same or rather far greater differences of brain symptom result from diseases and morbid conditions that cause or are especially accompanied by anaemia. The cachectic, the blood-poisoning, and the diseases of nutrition in which blood is not made in sufficient quantity may
all be attended with danger to some brain functions, though certain brains seem to have the innate trophic energy to nourish their tissues and perform their functions on less blood than others. In those predispersed by heredity to disturbance or enfeeblement of the mental functions, it is the mind that chiefly suffers in conditions of bloodlessness.

Sheila M. Peas. J.B.Ch.B.
Holloway Sanatorium
Virginia Water.