Title | Paralysis of the insane
--- | ---
Author | Brown, Martin L.
Qualification | MD
Year | 1884

Thesis scanned from best copy available: may contain faint or blurred text, and/or cropped or missing pages.

Digitisation Notes:

- Pagination errors in original, page numbers 22 & 27 occur twice and page number 37 is omitted

Scanned as part of the PhD Thesis Digitisation project
http://libraryblogs.is.ed.ac.uk/phddigitisation
Thesis for Graduation

by

Martin J. Brown M. D.
St. Andrew's Hall
Edinburgh.

The Dean of the Medical Faculty of the
University of Edinburgh.

Dear Sir,

Through you, I have the honor to submit my
thesis to the Medical Faculty of the Edinburgh University
for the purpose of obtaining the degree of
Doctor of Medicine. And with this
thesis I declare it was composed by myself alone.

Since taking the degree of Bachelor of Medicine
and Master of Surgery, in 1880, I have been
engaged in medical and surgical work,
having been Assistant Medical Officer in
the Devon County Asylum, Sussex County Asylum,
Waltham Asylum, and Resident Medical Officer in
Bethlem Hospital. At present I am
engaged in private practice in the
above mentioned City.

I have chosen to write on Spinal Paralysis, because
it was a disease which impressed me much, in fact
entering an Asylum, and one in which I have greatly
interested. I have quoted from different authorities
in the disease, and when I have done so, have
given a reference.

Yours very truly,

April 28th 1884.

Martin Easton, M.D.
General Paralysis of the Insane.

Several names have been given to this disease, but that of "General Paralysis of the Insane" being the one more generally used in England. I propose writing it, under that title.

In French medical literature, we find it called: "Paralyse Générale Progressive," "Paralysie Epiéphalite Chimique Affaissée," "Paralysie Chimique.


Some of these names being derived from the writer's view of its pathological characters.

As to what the disease is, briefly it is a progressive paralysis associated with mental disturbance, and which terminates fatally."
It is characterized by three well-marked features:

1/ Anatomically, by definite pathological changes in the brain, its membranes, and the spinal cord, and its meninges.
2/ Clinically, by incoordination and a want of coordinating power in the muscular system, accompanied by tremors and finally complete paralysis is established.
3/ Mentally, by symptoms of intellectual impairment, which either may assume ideas of an excelled nature, which is the most common form, or else idea of depression—but it'sultimately end in dementia.

Before entering further into the symptoms, causes, etc.
A sketch of the history of the discovery of the disease, not only is interesting, but also is instructive as to the nature of it, especially in the pathology of it. So we'll take a historical sketch.
In giving this sketch, I cannot do better than give a literal translation of a chapter in a work by a French author (Eulaliee de Radel, Paris, 1851).

**Historical Sketch.** The recognition of general paralysis constituted by a state of distinct pathological entity is a conquest of modern science, and belongs to the early part of this century. It is only in our epoch under the influence of the progress of pathological anatomy, that it has been definitely defined, and recognized in all its constitutional details. It is pleasing to note that in this immense work accomplished, a great part of the glory belongs legitimately to French physicians; and it is not without reason that Charcot, who has done so much for the study of this disease, has been able to say that the discovery of general paralysis is the greatest progress that can be pointed out in the history of mental diseases. Especial merit is misunderstood general paralysis, as it is known to-day, nevertheless, with that accuracy of observation, which characterized him, be remarked that a certain number of the insane became paralytic.
"But for him the paralysis, the delirium, were complications of the insanity, in the same category with scurvy. He did not see the bond which united the two disorders.

Appendix, in 1820, seems to have been a little nearer, and to explain the paralysis which he saw in the insane, he said that the brain, struck in these patients as an intellectual agent, finished by being attacked as a nervous agent. There was already in this mode of regarding the symptoms a tendency to reunite them into one and the same pathological entity.

We must pass on to the works of Bayle (thesis 1822) to meet with a precisely formulated pathological conception of general paralysis. Bayle attributed the series of symptoms which he described, to inflammation of the arachnoid. He studied them in a precise manner, and particularly isolated out the characteristic disorder of speech, the delirium ambien, the logia of the patients, &c. He divided the disease into three periods,
"And insisted on the special character of the lesions which he met with in the medulla, on the spasticity of the medullary, and the adhesion. According to him, the insanity and the paralysis are not those normal manifestations combined, but one and the same whole, a solitary and unique process in evolution, falling at the same time on the regions of psychic activity and on the cells of motor activity in the brain.

Delage, following the views of Esquirol, who considered the insanity and the paralysis as not having any relation to one another, studied general paralysis only as regards the independent symptomatic element of it; consequently his thesis entitled "Considerations sur une épipé de paralysie révéissant chez les aliénés" left the question as before. It was only later that a new step was made. Calmeil (1826) whose works were destined to have such an authority on this subject, in his inaugural thesis, demonstrated that the paralytic symptoms of the disease were associated with a material disorganization of the brain."
"That this disorganization was not exclusively localized in the cerebrum, as Bayle had established principally, but that it extended into the thickness of the more or less inflated and congested cortex. He insisted on the adhesions of the membranes and cortex and showed their frequency in the anterior regions of the brain. He thus regarded it as a diffused lesion, designated by him later peri-meningitis.

After having thus shown, with great accuracy, the importance of the anatomico-pathological lesions, he completed the description by the account of the symptoms observed in subjects who presented the clinical character of the disease.

He was thus able to make known the natural evolution of General Paralysis, to indicate its phases, its progress, its duration, and its fatal termination. This last was limited by him to 8 months as a minimum, and to 18 months as a maximum.
Foix (1829) and Parachappe in a series of observations very worthy of notice, confirmed the preceding opinions.

Parachappe (1836) (Réticules sur l'Encéphale) placed on record a series of post-mortem examinations in which he met with the lesions already described by his predecessor, e.g., the adhesions, chronic meningitis, etc. At the same time he gave an accurate description of the symptoms, and especially of the paralytic manifestations characterized by diminution of the contractile force of the muscles, inco-ordination of movements, especially in the acts of speech and walking. He considered (p. 441) the disorder of the locomotor apparatus as associated with mental alienation, the lesion of the intellectual and mental functions; he thus regarded the insanity as being primary, and the paralysis secondary; also he gave the name Folie Paralytique. Bailleul (1849) whose works have contributed so powerfully to the study of Folic Paralysis.
"Demonstrated that there were in the malady in question some elements fundamental, fixed and constant, e.g. the motor disorders and some variable and contingent three of the psycho-intellectual activity. He thus considered General Paralysis as an independent neurological entity, essentially paralytic. From this time, General Paralysis was perfectly isolated amongst the disorders of mental pathology. Its pathological anatomy, its symptomatology, and its peculiar evolution were formulated. But this was not all yet. The historians of the disease had only directed the attention of observers to it under its expansive and ambitious forms. They had entirely left on one side a second form of the morbid process — the depressed and hypochondriacal form, which is equally characteristic, and which accompanies the special muscular disorders.

To Baillarger again belongs the honour of having put this truth on record, and of having demonstrated that the phenomena of depression in the hypochondriacal delirium, as well as the expansive delirium, must be considered as a pathognomonic sign of General Paralysis.
“From this time a great progress was made in the study of mental diseases, for in proportion as the total forms of General Paralysis were precisely marked out, the groups of the pictures, properly so-called, were diminishing.

The expansive forms of the process had already absorbed a great number of Ancient Maniacs, monomaniacs of Espiritu; the depressed forms, invading in their turn the domain of the Melancholia, embraced a great number of these cases, formerly regarded as simple Melancholia.

These two discoveries have had for practical result the improvement of the means of analysis applied to the study of the commencement of the disease, and, thanks to them, we are able to trace it out in its phases in some sort embryonic, which were quite unknown to our predecessors.

This progress accomplished in the domain of pathological anatomy and clinically, things did not rest there a new phase of progress commenced with the application of the microscope.

In this order of new researches, the birth of—
"the works of French Physicians, all of whom having great importance, are in competition with those of foreign physicians, who in the domain of histology have brought a contingent of carefully directed studies. In particular, the works of Virchow and his school, on the neurophobia or connective tissue of the nervous centers, and on hyperplasia of this neurophobia, which have had the most considerable importance in the mode of regarding the histoid process of General Paralysis -

Calmeil in France, first made a deep study of the histotopic lesions and described precisely the fine granular intubation of the walls of the capillaries, as well as the formation of the granular body of Sluse accompanied by engorgement of the capillaries.”

*Calmeil 1857 "Traite des maladies inflammatoires du cerveau"
It was P. Kirnau, who in 1857 first drew attention to the considerable increase of the connective tissue in general. The tissue is soft, said he, it is swollen and flabby, and gives to the cortical substance a consistence looser than that which exists in the normal state. Later in the disease it becomes more fibrous. The nerve tubes, compressed by the invasion of these hypertrophied elements are progressively destroyed, and are reduced to Colloid and Amyloid granules. The cells undergo the same degeneration. He thus formulated, in advance the most recent conclusions of modern pathological histology, which has arrived at results almost identical.

Webbd (1859) set himself more especially to describe the lesions of the arteries, of the pia mater, and of the cortex; showing that the internal coat of these vessels was surrounded by a sheath of connective tissue, hypertrophied, which, forming adventitious projections, invades the cavity of the vessels and obliterates them. Then spread outwards under the form of radiating prolongations which—.

* P. Kirnau, der pathologische Anatomie.
"Which penetrated more or less deeply into the nervous substance and brought about the formation of adhesions.

We see then that from this period the essential lesions of General Paralyzism were already recognized as marked in a characteristic manner, under the form of interstitial scleroses, developed sometimes in the necrosis of the nervous tissue, sometimes along the capillaries and causing indirectly the partial obliteration of the vessels and the progressive annihilation of the nerve tubes and cells.

Later researches which have been since made in France, those of Majou, in particular (1866 and 1867), have only increased the value and confirmed the gifts of pathological histology, formulated by the preceding authors and our personal studies directed towards the same subjects and aided by micro-photography have only brought a new source of proofs to the works of the preceding authors, and to the researches of P. K. Dancky.
"The essential elements of the pathogenesis being settled, the authors have completed by fresh acquisitions the acquired facts, and have contributed some special points to the study of the malady.

Thus Westphal (1863) particularly showed the frequency of lesions of the cord in General Paralyses, and with them the anatomical explanation of the various motor disorders in the patients. These researches have been confirmed by Lennox (1871), Obermeier (1873), and Edmond Bouchet and Poulet, in a very interesting work, have particularly directed their researches to the lesions of the ganglia of the sympathetic in the back and front in General Paralyses. They have especially pointed out the brown stamineata of the nerve cells of the stroma of the ganglia. These researches have thus established the fact that the lesions in General Paralyses are not exclusively localized in the central regions of the nervous system, but that they extend also to the sympathetic ganglia."
"We will cite again the important work of Miescher; which appears to be the most complete and methodical review on the whole subject of General Paralysis. He gives a detailed description of the changes in the vessels, in the cells, in the interstitial substance, and he describes the different phases. He it was who first described the hypertrophied corpuscles of the neurophilia, under the name of spider cells. He has also given a good description of the retrograde changes in the nervous elements.

Ludwig Meyer (1874) applied himself especially to determine the chronologic order of the appearance of the changes of interstitial encephalitis in the different regions of the brain.

Without pretending to enumerate all the authors, and they are numerous, too, in our own time, I have added researches to the study of General Paralysis. We shall still mention the researches of Royer and Galliéni, who in 1855 pointed out in the brain and cord the existence of inflammating corpuscles.
"Of Lochlair Clarke (1866) who insisted on
the disintegration of the cortical substance,
of Mareschi (1865) who described atrophy
of the nerve cells, etc.

We shall point out again the researches of
Ampère, whose labours, carried on for
many years, on the structure of the nervous
centres, have done so much for the knowledge
of this special branch of pathological anatomy
of the convolutions; — those of Lublisch (1874)
who insisted on the multiplication of the
elements of the neurophila and the excessive
formation of chloritic cells; of Meige and
of Riehl; who have
added new and valuable contributions to our
knowledge; and finally among French
physicians, the recent researches of
Bothenot, on the affectual products
of superficial meningeal (Société d'histoire
of Paris, 1877)

of Lionel (thèse de Paris, sur les variétés de
la paralyse générale)

† Lublisch. Mémoires de physique. 1874.
† On the pathology of general paralysis. Medical
Asylum Reports. 1876.
† Disorders of Speech in insanity. Ed. med. Lecce 1876.
"Of clinical or the muscular disorder, which characterizes it, and the very
consciousness work of Auguste Vacan.*
who in his complete treatise on General
Paralysis sums up all the most
recent advances of science on this
hecto substantial subject.
All these numerous works, whose
principal character we have
sketched, clear up in an isolated
manner, one of the many points
of General Paralysis.
They all tend nevertheless, to a
common and uniform result,
the anatomical definition of the
primordial process of General Paralysis
as we actually understand it.
They show us the vitiation of the
neuroglia being its fruits, its progressive
infiltration into the depth of the nerve
substance, its primitive organization,
it's invading march, and finally its
direct participation in all the various
scenes of form and appearance which
we usually meet with in this condition.

Such then is an historical sketch of the discovery of this disease, given in Luy's work and literally translated. From it we learn that the disease which we are describing is one in which we have certain definite pathological changes in the nervous tissues associated with mental symptoms.

We will now pass on to the symptoms of the disease.
First Stage—

My knowledge of the symptoms then at this period are derived principally from the history of the patients recorded in the Asylum Case Books and from my own inquiries of the relatives and friends, as to what was first noticed wrong with the patient. The following is what I have elicited. —

As a rule, for a month or two or even for so long as two years, the patient has shown no symptoms; an "Altetia" in his usual conduct.

He became irritable, angry or even passionate to his wife or children apparently without sufficient cause. Restless, fitful in his moods at times being unusually elated at other times unusually depressed.

His memory also shows an impairment; he becomes forgetful even about the most ordinary matters concerning either himself personally or his business.
To this forgetfulness may perhaps be attributed a tendency to omit letters or words in his correspondence. At this period the patient himself complains of sleeplessness, flushing of the head and headache, and may be, affections of the different "organs of sense," the eyes, ear, nose, etc. on.

Some authors have particularly noticed the affecting sense being impaired or entirely abolished. He is in a more or less insensible state and frequently drinks stimulants excessively, no doubt he does this because he feels that he is not the thing to help himself and is helpless by so doing. And this tendency to drink at this time is often I think given as the cause of the illness, whereas it is only a symptom of mental disorder, but at the same time helps to hasten the progress of the disease. His sexual desire is exaggerated, though his capability for gratifying it is often lost.
These symptoms gradually become more and more marked and greater changes are noticed. He reflects himself, is untidy, careless; his moral character is debased. He commits acts of indecency or dishonesty, and which latter act he does often in a very foolish and aimless way; he lanceth, is broke, into extravagances, buys horses etc. without having the means to pay for them. In reference to this last symptom, I know the case of an elderly military officer who came to England on retired pay settled down in Devonshire, and was an agreeable companion and a prudent man, when suddenly his spirits became very elated; he made several handsome presents. This friend, ordered his daughter must eat the things, which, I inspected a very large mansion, and bought half a dozen horses, all these things were done so quickly, that there was no time to hinder him doing these mad things. He was removed to another and sunk out into a maniacal state.
When it was found necessary to send him to an asylum, and which place he died in, is about two years from the first symptoms in his case being "Extravagance". Besides extravagant ideas, he may show signs of depression, until suddenly he either has such grandiose delusions, a maniacal attack, or such melancholia that it is necessary to place him under legal control.

As to the early motor symptoms, the two chief things noticed by his friends are:

1. That his "gait" has somewhat altered, he having assumed a swaggering style of walking, or may be rather listless.

2. A Change in his speech, that being a catch when he talks or a slurring of his words.

At this time the patient is often found to have had one or more "fits" or "seizures", as they term them, from which he quickly rallied.
Such then have I found to be the principal abnormal conditions shown by the patient, in what I have termed the first stage.

To sum up, we have an alteration in his general conduct, a period of excitability and instability, which from our pathological knowledge, we can attribute to the generally hypopathic state of the heart, of the brain, its membranes, and of the spinal cord and its membranes.

I shall pass on to the symptoms which as plainly show the disease from which he suffers, and will describe those symptoms which I have particularly noticed in the male general Paralytics admitted to "Cohen's Bath Asylum" during my residence there.
Second Stage
How the patient's condition is such
that he is sent to an Asylum.
And in the majority of cases present
the following symptoms:

1. Physically,
The first motor signs are defects
in the muscles of articulation, expression
and progression.

Affecting the 'lips', we have a general
fibrillation twitching, convulsive,
trembling, and a peculiar quivering
which gives one the idea that the
patient is going to weep, or else.
There may be an appearance of stiffness
or immobility.
The 'tongue' also shows a trembling
and a quivering, and an impediment
to its free movements. On asking
the patient to protrude it, he does so
in an imperfect manner, sometimes
shooting it out with a regular jerk.
Owing to this loss of coordinating
power over the lips and tongue.
His "speech" is impaired, stammering, and stammering. There is especially a difficulty in pronouncing linguals and labials - he has to talk slowly and deliberately at the same time he pliers and runs one word into another. In the face we find the same kind of twitches and tremulousness, often especially well marked round the eyes and on the forehead. Its expression in repose is heavy and vacant, on speaking to him, he has a startled or frightened look, caused to a great extent by the skin of his forehead puckering up and the muscles round the eyes contracting.

The skin of the face is moist, papular, freckled, and the vessels are congested.

As regards his power of walking, we notice his gait to be shakily, and uncertain, when asked to walk, he naturally pulls himself together, and goes with a swaggering and hasty manner.
Taking long strides, on asking him to turn round quickly, he does so very awkwardly with a lurch and takes quite a two-foot round, and later on he walks like a drunken man.

Now we will go to the "Upper Extremities" and there is found the same loss of power. Uncertainty about the movements of his hands. He fumbles to use a common place expression are all thumbs, watch him button up his waistcoat, he fumbles away and it is into such a fumble that he can do so.

His handwriting is very characteristic of being shaky, like an old hand. His letters are irregular and have a tendency to run one into another. By degrees it becomes worse and finally quite illegible.

His speaking power is much diminished
The want of coordinating power described in the preceding symptoms, gradually becomes more and more marked, causing his speech to be unintelligible, his walk tottering, and so he drifts on into the third stage.

We now come to the mental symptoms of the third stage.

1. Mentally:
   We find the irritability, recklessness, perplexities, and loss of memory mentioned in the first stage all greatly exaggerated at this period. And he is in a gloriously exalted state: his pleasures or torments being of the superlative degree. He readily weeps and as readily speaks his hate on talking about his wonderful self. He has a smiling and pleased expression, very talkative and full of delusions, which are of a grandiose character in most cases, such as:
   He possesses millions of money, horses, horses etc., his surroundings are palatial.
And he wishes to confer honours on all who please him.

His delusions are always very absurd and wild and frequently self-contradictory and differ from those of the ordinary Maniac - I cannot do better than give the following from Blandford's book on Insanity (page 270) as I have frequently been struck with the difference between an ordinary Maniac's delusions and those of the General Paralytic, and as Blandford expresses my ideas in better language than I could write quite as follows.

"But the ideas of the Paralytic are altogether absurd, impossible, and unintelligible, involving his loss of mind as well as aberration. An ordinary Maniac may build himself a ducal or marquise a carriage and horses which he cannot pay for; but a paralytic will tell us that he is a Duke, a Marquis, a King, and an Emperor all at once, that he is going to marry the Queen and all the Princesses."
"That he has a hundred million of horses, and is going to pull down all London to-day, and rebuild it to-morrow. Ordinary maniacs do not talk in this wild and absurd fashion. They invent wonderful machineries which will make their fortunes; and disclose the method of squaring the circle, and so on, but do not trouble one with such a foolish effort.

Another difference is this: patients in ordinary mania generally hold their delusions, at any rate for a time. The inventor holds to his machine. The landscape of his title; but the practical to-day has forgotten his delusions of yesterday, and in his future desire the great, he increases his horses and carriages from thousands to millions, and invents half-a-dozen fresh fancies to add to what he has already announced. There is scarcely such a thing as a fixed delusion in this stage. It is all happiness, grandeur, and wealth in a rapid crescendo."
"And neither argument nor ridicule
arrest it in the slightest degree.
Everything around is pressed into
the cause, trumping articles of less
or ornament become robes and orders,
cottage becomes a palace, the
housemaid an empress.
Even an Appian, in which the
unfortunate man complains that
he is confined, is a regal abode
and the Misan patient, Courtier and
noble. And when strength is failing
and the patient can scarcely stand
or lift his hand to his head, he tells us
that he can write his name on the
ceiling with a tooth. weight hung
on his little finger.

Another special feature that I have
noticed in a general Paralytic, different
from ordinary Maniac, and that is,
that the former believes his fellow
patients to be sane and takes them
into his confidence, whereas the latter
believes and rightly, that his fellow patients
are insane, never takes them into
his confidence. "Closest has refused this
at page 365 in his book on Mental Disease."
His habits are untidy at first and eventually become filthy; he adorns himself fantastically and is a terrible thief; his pockets usually containing the property of others which he has snatched, besides a quantity of stones or rubbish of some kind, which he treasures as diamonds and precious jewels.

He has illusions and hallucinations in reference to these events. The following given by Dr. Quickle in the Journal of Mental Science for April 1882 (page 84)

"That hallucinations and illusions are more frequent and important in general paralysis than is generally recognized."

"That, contrary to what is usually believed, visual hallucinations occur with scarcely greater absolute frequency than auditory in general paralysis; but that in general paralytic soldiers the visual hallucinations bear a considerably higher ratio to the auditory than they do in the other insane soldiers."

That in the latter, namely, in the soldiers..."
"With non-auditory hallucinations, and exclusive of general paralysis, auditory hallucinations predominate in frequency, over visual; as they also do over the auditory hallucination of general paralysis. That in general character the hallucinations of general paralysis are often of short duration, recurring, variable, non-systematized, numerous, absurd, crude, and, sometimes, disconnected, contradictory, heterogeneous and extremely pleasurable or painful.

That in dealing with the hallucinations in general paralysis, in reference to cerebral localization, use may be made of the distribution of centro-meningeal adhesions and the cortical changes associated therewith.

That in cases of visual hallucination in general paralysis the angular gyrus is not affected in the marked manner one would anticipate on the theory that it is the sole cortical visual centre;"
"... in cases of auditory hallucination, it is the first temporo-ethmoidal, revering it as the sole cortical auditory centre. Thus the normal anatomy of general paralysis fails to support the exclusive idea that these gyrus could be the only cortical centres of sight and hearing.

Taking the cases together, we find that the supramarginal convolution is affected more than the angular in those with neural hallucinations, and the adhesion are often well marked in the furo-pancular lobule.

Also that the second temporo-ethmoidal gyrus seems to suffer more than the first in the cases with auditory hallucinations, taken collectedly. Thus we see that the preceding investigations are not only of interest in bearing on general paralysis, but also have interest in connection with the rest of sense centres.
To the patient drift on, his brain becoming weaker and weaker, until he lapses into a state of Dementia.

The majority of cases present the generally elevated character, which I have described. But there are some in whom we find a depressed and hypochondriacal condition, even when there are the prominent symptoms they different, as a rule, from those found in the ordinary melancholic patient.

Again we may find the two conditions alternating one with another, extreme exaltation one day, extreme depression the next. In others there may be but little variation of any kind but a state of Dementia, throughout, in some amounting to a state of "stupor."

We will now take the Third Stage.
Third Stage.

1. Physically.—At this period all or nearly all power of coördination is lost. He cannot stand, without assistance, and is usually confined to his bed, where he lies, in a helpless state, of wet and dirty habits.

His cutaneous and general sterility is gone, bed sores form. He becomes thinner and thinner, until carried off either by general exhaustion, or some secondary lesion as Phrenonia, diarrhoea, etc.

2. Mentally.—The mind is a blank.

He lies devoid of expression, sagging into space, and frequently grinds his teeth loudly and continually. In speaking he in a smile flits across his face, showing that he is apparently, in at least a happy state of degradation, free from all pain.
Such were the three stages through which a general paralytic goes—
1. A period of "excitability",
2. Then a period of delusional mania,
3. Which, for the most part, passes into a grandiose character, and,
4. Lastly, a period of dementia.

I have omitted to mention that the "appetite" is unusually voracious,
and that we find the weight of the patient below his normal standard in
the first stage of this disease, but that it frequently increases many pounds
in weight during the second stage, and of course finally loses weight
again.

An affection of the auricle of the ear—
called "hematoma auris" is very prevalent in general paralytics, it being caused by a struck condition
of the vessels of the auricle. It forms at first a tumor, then usually
shrivels up, leaving a thickened
puckered and nodulated pruritis.
Associated with this disease there are certain attacks which the patient is subject, namely—

1. Acute Maniacal ATTACK.

2. Epileptic Seizures.

1. Acute Maniacal Attack.—

The patient may suffer from such an attack at any periods of the disease. It is frequently owing to this bursting out in a state of maniacal excitement that the disease first shows itself, or it may occur once or more times in the second stage of the disease. In one of these attacks, he is in a state of violent excitement, tears up his clothes, noisy, lashing and puce incessantly, filthy in his habits, swears the walls and his person with his ejaculations, and threatens or attacks those around him.
2. Epileptiform Seizures. —

These like the Maniacal attacks may occur at any period of the disease, but are more frequent towards the end of the disease. In many cases of general paralysis admitted to Colney Hatch, while I was there, I have found that before admission patient has had one or more fit or seizure, but from which he recovered either in an hour or so or in a few days. In the third stage of the disease, the seizures are often very severe and one attack may follow another with great rapidity, but more frequently they are not so severe as an true Epileptic fit, but more akin to the petit mal of that malady. The patient usually recovers from the attack, though sometimes dies in one, a slight paralysis may exist for a time. Should the attacks be severe, both the mental and physical symptoms are aggravated afterwards.
There are certain abnormal states of the temperature, eye, and patellar tendon phenomena, which have been noticed in connection with this disease, and to which I will now refer.

1. Temperature.

From observations of the temperature of the general paralytics in Bethlem Hospital and Colney Hatch, I found that the average temperature was greater in New than in the West of the knee patients, also there was a marked evening rise of temperature over the morning temperature.

The increased temperature was naturally particularly noticeable when there was any extra excitability, also in the third stage, which might then be attributed to some secondary lesion. Before and during a grand mal attack, there was a rise.

After an "epileptiform seizure" there was a rise.
1. The Eye.

What I wish particularly to refer to is the condition of the pupils. They vary in size, equality, and in their mobility. In the earlier stages, we may find one larger than the other, or both strongly contracted, equally, or one irregular and sluggish, and the other about normal. The different conditions may vary hourly, but there is one important fact, that if watched we shall find that sometime they will present abnormal conditions. In the later stages, I have found them to be usually dilated, one being more so than the other.

The left, is the one that I have more frequently found dilated. According to some writers, dilated left pupil is associated with "exaltation" and dilated right pupil with "depression." Changes in the optic nerve and atones of the retina have been seen by "Clifford Allbutt" and "Forcin" by means of the Ophthalmoscope.
3. Patellar tendon phenomenon.

This is sometimes exaggerated, at other times absent, but rarely normal.

The condition varies at different times during the course of the disease. In the cases that I have examined, I found it exaggerated in the majority, least in frequency a diminution in the jerk, then an absence of it, and in a few cases apparently normal. Exaggeration specially exists in the first and second stages, and the diminution of the jerk is more often in the later stages of the disease when the demented state is reached.
Among the male general paralytics at Colney Hatch, I was struck with the fact that two distinct types of the disease presented themselves. They were:

1. Those patients in whom, I found, the left pupil was dilated, the right pupil exaggerated, the mental state that of hallucination and fantastic delusions.

2. Those patients in whom, I found, the pupils contracted equally, the right pupil diminished or absent, the mental state that of depresion or simple mental failure.

Class 2. Approached very closely to cases of locomotor ataxy, and was particularly found among the "few" general paralytics.
We will now consider the duration of the disease.

**Duration.**

In calculating the average duration account must be taken of the station in life to which the patient belongs, and also of the sex of the patient, the duration being longer in those of the upper classes, and also in the female sex. Speaking roughly, the average duration in the male paralytics admitted in Colney Hatch is just below 18 months, in the females, over 2 years. I have been several paralytics die within four or five months after their admission. There are whose the duration was of short length suffered from Grandial Attacks, and from Epileptiform Seizures. In the three hand three cases in whose dementia was the prominent mental condition lasted three or four years. Gowers in his book on Clinical Paralytic (page 65) states that the duration varies from a few weeks or months, one, two or several years.
The shortest duration that has come under my notice has been about two hundred and a half. This patient had an acute maniacal attack, and died from exhaustion.

"Seward of Colney Hatch, tells me that this year a patient died in Colney Hatch, in whom the illness ran through its whole course in 17 weeks; the patient was employed in the Railway. Bradford states in his book (p. 28)."

"Gricinger says: "the duration of facial paralysis varies from several minutes to about three years." In my own experience I should say that the average duration was considerably longer. The reason of this is, that my patients have been all of a class able to command the best food and nursing. Life may be prolonged for an indefinite time by diet of unmitigated food and thorough nursing. I should say that with careful nursing, and with every appliance and means for taking care of a patient, we might put down the duration of life as from 3 to 5 years.

At Bloemfontein average duration males 15 months, females 17 months.
We now come to the Causes of Paralysis. In considering these, we will divide them into 
Predisposing and Exciting Causes.

1. Predisposing.

Under this we will find the Race, Temperament and Climate.
The Arctic and savage races are free from it. The Irishman is also stated not to suffer from it; at least to the extent that the Englishman does. My observations at Colney Hatch bear this out. Here was a strong Irish contingent there, but very few were general paralytics. The Scotch Highlanders also are not so liable to be affected, but here were a large percentage of general paralytics in Colney Hatch of Scotch nationality.

The Jews, on the other hand, considering the number in proportion to the other inmates of Colney Hatch, undoubtedly furnished a very undue proportion of general paralytics, and as Shave stated elsewhere, in them the disease was frequently associated with melancholia.
But I think it is not so much a matter of race at all together, but rather their manners and customs, if they use the expression, thing that suffer less from the malady are not educated or civilized up to. General paralysis, their lives are purer, and quieter, they do not live at the high pressure rates of those in the large towns and cities, but let them do so, and I have no doubt but that the Asiatic and retarded races would in time develop among general paralytics in the other races. Though they would be one thing in their favour, that is their temperament which being colder and phlegmatic, and in the Sibyl their happy-go-lucky natures, enable them to take life easier and they do not feel the cares of life as heavily as those of an anxious or ambitious temperament.

A tropical climate certainly favours the production of the complaint.
The males are more prone to the disease than females. Middle state (page 90), "That 14.1 per cent of the total male admissions and 9.2 per cent of the total female admissions were general paralytics." During the last two years at Colney Hatch, 14% of the total male admissions, but a number of advanced cases are refused when possible. I am not so well acquainted with the female general paralytic as with the male. But there was one case of general paralysis in a female that came under my notice whilst I was a clinical at Bethlem Hospital, and which case I believe Mr. Savage has brought forward in the Journal of Mental Science. It was a very typical case, and was far more marked than is usually found in females. She was about thirty years of age, small and of slight build, but fairly developed, by profession an actress. She had worked hard at her profession, was extremely anxious to stretch it, had been to India with a company.
And helped to support his brother, from all accounts she had lived a chaste life. I think she is still living, if so she must be about 87 years. The disproportion of males affected to the females is accounted for, at death by the greater strain both physically and mentally to which the males are subjected.

Women of the upper classes rarely, if ever suffer from this malady, but those women are attacked who live hard lives, and have committed excesses in several ways. It affects the female especially at the menopause.

Age.

It is practically limited to the period between the ages of 25 years and 60 years. Most frequent between 40 years and 50 years.

Rest " 30-40 " 40-70.

Clouston mentions one case at the age of 67 years, and another at the age of 127 years. The youngest that have been seen was a male aged 26 years. It is very rare to find a well marked case over 30.
Occupation.

All occupations that entail either prolonged or excessive mental or physical exertion certainly favour it. Soldiers who are exposed to a hot climate and live freely suffer frequently from it, and Non-Commissioned Officers are particularly liable to it, besides living in a hot climate and living maybe freely. They often have work to do that is a little above them and which acts as a strain on their mental powers. The labourer who works his muscular powers and at the same time get poor food andwife drink runs a risk of it——

Of the Literary Man who overtaxes his faded brain maybe another candidate for the disorder.

As regards hereditary taint, it does not bear such a strong influence on this disease, as it does in other mental disorders.
Hereditary Taint.—

In looking over the Case books at Bethlem Hospital for a period of three years there were admitted 121 undoubted General Paralytics, an of these only 19 had insane blood relations, i.e. 15 per cent, less than half the percentage in the case of ordinary insane patients. Of these six were direct, that is, parents or grandparents, and five collateral, that is, three brothers and sisters and two cousins or more distant relations. They include one brother who committed suicide, one grandfather an insane drunkard, one brother an idiot, and one whose mother died of paralysis. In only one instance was there a distinct history of General Paralysis occurring in father and son. (I saw a patient (male) at Coffs Harbour suffering from General Paralysis; it is the case to which I have previously referred as being the poorest patient that I had seen affected, and his father coming to visit him, he himself presented well marked Paralytic Symptoms of General Paralysis.)

This is a very important question, because if General Paralytics have no tendency to it in this disease, we might advise the patients...
If patients that there is far less danger in marrying into a family where the father or grandfather had died of general paralysis than into a family where a relative had suffered from one form of mental disease. I think that general paralytics have more or less a tendency to nervous, and that they may transmit a nervous disposition, but that in the majority of cases they neither inherit nor transmit an insane diathesis.

The preceding then are the different factors which, I think, affect a predisposing influence toward the malady.

We will now discuss the leading causes.
2. Exciting Causes.

Prolonged Mental Strain - This I think is the greatest of all the factors acting to produce the disease - with it I include not only mere brain working but anxiety and worry.

Intemperance in drink - and then -

Great Excitement.

Physical overwork - this coming into play among the labouring classes.

Sexual excess - this is stated by some writers. The great cause, some even going so far, as to say that it is the sole cause. These chief arguments being, that the majority of general paralytics are married. It is certainly a fact that an overwhelming majority of the male general paralytics are married, for instance, of 40 general paralytics admitted in City Hospital, Stockton, in 1882, only 7 were unmarried, and of 21 admitted in 1881 only 1 was unmarried. But there are two important things. The force of truth, when considering this,
They are—

1. That the civil state of the majority of men between the ages of 40° and 50°, the period when the disease is most common, is that of married.

2. That a married man, particularly at the period between the above-mentioned ages, has some care, anxiety, and greater taxes on his mental powers than the unmarried man.

From the history of the cases of general paralysis, that I have been able to investigate, I have formed the opinion that sexual excess, instead of being the great cause, is greatly over-rated, and is really a minor factor in the causation of the disorder.

I grant, that the married man is more in danger of suffering from the slightest factor of sexual excess, than the unmarried, because the former has the temptation to gratify his inclination for excess, always beside him, or at least near at hand.
Injury to head and lumbar
are also given as causes.
Syphilis is stated by some
like a cause, but my humble
opinion certainly coincides with
Dr. Clinton, who states that there
is no evidence confirming this.

Such there is a tabulated form of
the causes, with predisposing and
exciting. Which favour Guald parallels,
but in a few seconds, gives make a few
observations, on several paralytics,
and the causes which made them
such that rest with us being
residence in different asylum.
First let us take the Bloom County, and
Sucre County, Asylums, both of which
are in Agricultural Counties.
In these Asylums, the largest town in
the Counties sent a greater proportion
of several paralytics, in comparison
with the Mez Asylums, than did the
villages and adjoining districts.
That appeared true. The more to the
more exciting life that a man in a
town lives, than his rural brethren.
Rept: What was the occupation and general style of man that supplied the spinal paralysis? He was generally found to be a man who had lived freely, of an energetic and ambitious nature, and socially was doing well, and "bettering" themselves. Yet to stay, was engaged in work to raise himself, and trying to get on in the world, in so doing he worked his brain continuously, and in fact did mental work too great for his mental powers. This combined with nervous worry, tells him down, and we find him a general paralysis.

The next class of men that formed the highest profession, were soldiers and sailors, among the former the marines were to the fore, due to Despotism being one of their headquarter, in their "brick" and "hot climate" had their power. Then came the hard working laborer, who was engaged in laborious work under the unfavourable conditions of being badly fed and insufficiently clad.
The mechanics, clerks, shopmen, and well-to-do labourers, who were contented with their lot, and did their duty, and were perfectly happy to remain in the sphere that chance had thrown them, of disposition phlegmatic, yet to be thrown from their mental equilibrium did not become general paralytics; but their mental disorder assumed other forms of insanity.

At Colney Hatch, again the general paralytics were the go-a-head men, not the mere mechanics.

At Bethlem Hospital and Chalfont Farm Hospital, where the patients were of a different class, I noticed that it was the men who had held responsible posts, and who had prolonged mental strain, provided the general paralytics, next to those military officers, and such like came, in neither of these asylum did Street with a clergyman, who was a general paralytic, of course they do furnish general paralytic, but still the percentage is small compared to the other forms of insanity, but with among them.
To sum up, I think that the great causes of General paralysis are excessive and ambitious aims, an exciting and hard life, together with either prolonged mental or physical strain.

And in connection with this disease, I think that there in whom we find that mental account is the apparent cause they suffer more from manic, and epileptic attacks, and the disease runs a more rapid course, and that it extends from brain to cord. Whereas in the laborer or sailor, the spinal cord is the primary seat of the disease, that it goes from it to brain, and they are particularly subject to dementia, for their mental form of the malady, and the duration is longer.

This may be an error on my part, but from what I have seen, I am led to believe that it is true.
Now we come to the diagnosis.

**Diagnosis.**

To distinguish this disease from those other mental maladies that may present symptom, simulating it, is of the utmost importance, when we consider, when we consider the unfavourable prognosis the sufferer in cases of *general paralysis*.

And here I would address somewhat form any subject, to dwell upon the importance of medical men acquiring a practical knowledge of the different forms of insanity that may be met with before embarking in private practice, not only for their own satisfaction and reputation, but for the benefit that might accrue to the patient, who as a rule at the earliest period of his illness consults the general practitioner, who, should he have acquired an insight into mental diseases, would at once be able to do everything in his power to avert the impending attack. Often have been patients sent to an asylum suffering from *general paralysis*, and of these the general practitioners had given the hopeful prognosis, and on the other hand, cases of *disabling mental delirium* were put down as quite hopeless.
In the diagnosis of purely marked cases there is little difficulty. The mental symptoms are the ones that should guide us most. The want of coordinating power in the lips, tongue, and consequently speech, skin variations in the facial and temporal region of the head, and loss of power and coodination in the limbs, and the mental symptoms previously described, if present, will assist in forming our judgment.

In cases in which a differential diagnosis may be required are: Acute Mania, Mental Exaltation, Senile Dementia, Alcoholism, insanity due to Syphilis, Epilepsy, Stupor, or Mania associated with Paralysis. Chronic Softening of the Brain. Of these think Acute Mania, Mental Exaltation, Alcoholism, Senile Dementia and some forms of Syphilitic Brain Disease are those in which a diagnosis might be more difficult.

In Senile Dementia the age must be borne in mind. General paralysis may come after 50 years of age.
And the first change in a *levele* attack is noticed in the *weakening* muscular. Besides the history of the case will guide us.

*Alcoholism* this way closely simulates general paralysis, but by carefully watching the diagnosis will be readily made. "*D. Balfour*" points out the different conditions of the pupil and retina in these two cases. The irregular and contracted pupil, with hypopemia of the retina anemias, general paralysis, pupils unaffected and sudden of eye anemia, *alcoholism* may be suspected.

**Epilepsy** - Here is little difficulty in the differential diagnosis here. Though when first we may see a patient, we are told that he has had new type fits. But the mental condition are so different, and we find that the fit are really the "*fits*" to which the general paralysis is liable.
Syphilitic disease of brain.
In regard to this,阶层 as better than give the following summary from
Grieco (p. 73): 

1. By the distinct history or symptoms of "pilus
2. By the preceding cranial pains, localised
and intense.
3. The delusion is less marked, less persistent
and perhaps less associated with general
pyramidal symptoms and signs than in most of the cases of cerebral paralysis.
4. Sometimes by such complications as palsy
of one or several cranial nerves, or hemiplegia
or paraplegia having the character and
Course of syphilitic paralysis.
5. By the greater frequency of optic neuritis
early amanuricis, deafness, local anaesthesia,
vertigo, or local rigid contraction.
6. The affection of articulation is partly motoric
than parietal and usually spastic in its
accompanied by any facial or cerebral twitches.
7. By frank central or facial meningitis
of parkinsonism.
8. By the variety of the motor and sensory symptoms.
How we come to *Prognosis.*

*Prognosis.*

This is most unfavorable, as we know that the termination is fatal, and that, in a comparatively short time, in fact the case is hopeless, and though the patient, under very favorable circumstances may live longer than the average, or may be have a "remission," he will never be able to work or be fit for the world again, so he will sooner break down, finally die. Should we be required to give an idea of how long he will live? We must take into consideration the different elements, such as sex, social status, etc., and which have discussed survival under "duration of remission."

From time to time cases have been recorded of "cure," but only for "time" to them that such was true. The true was but a "remission." But it should be borne in mind that "remissions" are far from uncommon, in many cases the mental symptoms, especially state,
And the patient becomes apparently sane, but as a rule the motor defect always remains, to a certain extent, he may stay in this state where stationary position for some time, particularly if he be in an asylum, or in a place where he has every care, but let him go and try to work or live the life of an ordinary worker and we find that he quickly relapses into his former condition.

Three male general paralytics were discharged, mentally recovered, from Colony Hospital last year, but they are bound to break down and that I fear in "but a little while."
we take up the treatment. 

TREATMENT.

I write about this with a heavy heart, for Curative treatment is of no avail, when the disease is established, and it is doubtful if we can do much at the time. The patient first comes under the medical eye. Though to some it considers general paralysis an entirely inflammatory disease, is strongly of the opinion that "Aulept-Bolognies and Cold Baths" are very useful in the early stages, he even goes so far as to say, that if a case be taken in time, strong measures of this description may prevent the disease from proceeding. He acknowledges that it is incurable. This then would make one anxious, if consulted, at a very early state of the malady, to do all in our power to arrest the impending evil, and work on the theory that, the disease is primarily an "inflammatory one," and so fight it on that basis.
Supporting as we meet with a patient, in whom we fear the symptoms point to general paralysis, he must be told, in advising the importance of following out proper treatment to try and check it. It behoves, as I said before, at the pathology of it, and then at the factors which the most influence on its causation, and in doing so, we find that, "disturbed stream mental or physical," together with the habits of the patient are the chief thing. Then, conclude, it is naturally we must lay in that way the revolted brain or physical power can be relieved, and all injurious habits allowed, "moderation" in all things must be the rule. To get these things followed out will require great tact, and judgment on the part of the medical man. As for medicines at this period, each case must be taken on its merits, this as good being empirical, and saying as this or that, but should be observed if syllabically than antipathetic dreams.
But on the other hand, should we suspect that our patient is actually exhausted, we must give him to the warm baths, warm waters, or physical exercises. From alone or with the hypophosphite would be beneficial. Beside this, this symptom must be attended to.

Sleeplessness, to sick, must be carefully regulated, meat restricted, vegetables and beverages light. Things fresh in plenty and at proper intervals. Alcohol, in the form of spirit especially, should be prohibited.

Such then is what I think would be a rational line of treatment to form.

But when the initial stage is passed and we have the mental symptoms, so established that it is necessary to have our patient under legal control, it should, with little delay, be removed to an asylum, which I think is far excellence the place for a mental-paralytic at any rate he should be placed away from his ordinary surroundings and friends, but for his own safety.
And that of his relatives and friends.
We can remember that a general paralysis does not the humiliation and pain
offering in an asylum, like many
other lunatics, his forgetfulness,
and delusions, help him to believe
that he is going away tomorrow, idea
that he is in a palace with grand
surroundings.
When we have our patient then in
An asylum, our treatment is
principally that termed "progress
treatment," and which is carried
out to a great extent by "tact and
"gentle firmness."
We make him follow out of rule,
which are formed, enable him
to recoup himself, at the same time
Carefully watching him and giving
him special remedies that may be
called for at different times.
Should he have an acute cerebral
attack or a cholera contaict with
Passion of Bromelins in full dose,
right and strong is useful
at times, I have given to Yroni
in full doses with marked effect.
I have also given "Hyoscyamine (3s. for 38d.)"
but have not been favourably impressed
with its use. During this paroxysm
he will require perhaps "Inaquinol"
which when given, by his being placed
in a warm, padded and darkness,
from certainly appears to do the
Plenty of liquid nourishment should
be given and the bowel regulated.
After one of these attacks the patient
is usually more or less, exhausted, and
then "Inaquinol" and the "Hyoscyamine"
come in useful.

For the Epileptiform Seizures, Chloral
alone or with Pernute (Materia Medica)
be given, and the patient made comfortable.
In regards proper bedding etc.
When there is much convulsion and
an apoplectic form of seizure, have
the patient lying with his head slightly
raised, feet warmed, and one
drop of liquor amou or the back of his
tongue does good by giving him a
free convulsion
Sometimes when we have a patient whose delusions are depressed in character, such as believing that he is "stomachless," is "shipped up," etc., and in consequence refuses food, we should not reflect him to regard his meals, but "forbid" feed him, at the first, because if let alone, he will surely go down hill. In the matter of "artificial feedings," there are several different opinions as to which is the better method — the one that I adopted at Cobden Hall, was to have him securely fastened in a chair by means of straps or sheets, and then used the ordinary stomach pump, or else the funnel attached to the stomach tube. In my opinion this is a far preferable plan, then by right feed him with a feeder, or allowing the attendant to lie him on his back and let them feed him, because in the case of his being securely fastened in a chair, he feels completely over-powered and gives way and receives the whole of the nourishment, whereas or only being held he struggles continuosly and half the nourishment goes in the second.
When the patient is becoming weaker, we must try and put him up early, as long as possible, because otherwise pitifulburse that is easily formed — and now special care must be given about his food, as he is very liable to the Re, through the advancing paralysis.

I have left to now, to refer to a very important matter, that is always recollected, that syphilitic disease may simulate general paralysis very closely indeed, and a slightest suspicion of syphilis be present, a thorough and systematic course of "mercureal" and the "iodide of potassium" should be perseveringly followed out.

Dr. Sanders of the Blome Asylum told me of a case that occurred in the Blome Asylum, which assumed all the characteristics of a typical general paralytic, but then being a suspicion of syphilis, mercureals and iodide of potassium were given with the happy result of curing an apparent helpless general paralytic.
Such then briefly are the cases of treatment that I would follow.

We will now take the Post Mortem Character.
The changes found in the structures of the Brain and Spinal Cord are well marked, both in the old and new at the post mortem room. In taking notes, the first general subject of interest is the Brain and Membrane. The following is what I have usually found in the Brain and its Membrane.

First from the naked-eye appearance. On removing the Skull Cap, the dura mater is found the thickest, opaque and adherent in places. The Calvaria, and pericerebral patches are frequently found upon its internal surface. The Arachnoid is also thickened, opaque and somewhat pearly, this being particularly noticed to occur in patches.

The Pia Mater presents the same thickened and opaque character, especially along the course of the great vessels and the longitudinal cyst.
And it is adherent here and there to the cortex grey substance of the brain, so that in trying to peel it off, gritty or smaller pieces of the latter remain attached to it, and the cerebral surface has a torn and jagged appearance. The adherences were found, not regularly, to effect the same part of the brain, in different cases; they were the summit of the gyri upon the relief of the brain, the sides of the longitudinal cleft, the frontal lobes, the parietal and temporal. Sphenoidal, were the part particularly noticed where this condition was found. Sometimes instead of finding these adherences of the pia-mater, the matter of the pia-mater were found rather in perimus, and then the pia-mater peeled easily from the brain substance. The brain itself is usually found to be softened and almost in consistence, and somewhat thinned and atrophied, its specific gravity is lessened, and it considerately diminished in weight. Its grey matter, especially in its cortical layer, is somewhat softer than usual, the blood vessels are often injected.
Giving both a deep red colour, but in the other hand it may be pale and 
aneuric.
The white matter is firmer and 
tougher.
The lateral ventricles, are usually 
distended with a clear fluid.
The vessels at the base are often 
arteriomataic, and the arteries, 
particularly, tortuous.

The cerebellum, is frequently but 
little changed, but when a change 
is noticed, it is smaller and of 
a softer consistence than in health.

The spinal cord and its membranes, 
are also found to show the same 
changes, as in the brain, the membrane 
being thickened and opaque. 
The cord congested and softened 
and frequently an abnormal 
quantity of serum between the 
cord and its coverings.
Besides the changes in the Brain and Cord, there were found alterations in the Kidneys. As a rule, I did not notice anything particular in the matter with the other organs, which seem associated with the changes such with in the Brain and Cord of a General Paralytic.

The Kidneys, usually showed signs of granular degeneration. The capsule was at times, contains substance thinner or wasted, and the substance generally compacted, or presented the sign of granular degeneration.

Microscopically, the principal feature that struck me was the increase in the neurofibric or connective tissue of the brain. I certainly thought that in some specimens the blood vessels were briskly and appeared stood out more prominently than ordinarily. And the nerve tissue showed sign of degeneration. In the spinal cord, the appearance of granular degeneration was present.
Such then are the changes that I have observed.

And referring to the writings on the post-mortem changes, mentioned by authorities on the subject, I find that the shrinking, and adhering of the membranes, the brain substance, the shrinking of the brain, and increase of serum fluid in the subarachnoid and other spaces are the most that are particularly noticed.

And, especially, an increase of the hemoglobin, together with granular degeneration of the nerve elements.

So from these distinct anatomical and special clinical features I think that we can come to the conclusion that 'general paralysis' is an intermittent inflammation of the brain, which runs a definite course.

There has been much discussion as to whether it be primarily started in the brain, and then going over the cord, or vice versa, or both even simultaneously.
As to that question, I am led to believe that in some cases it may start first in the Cord and then go to the brain, or vice versa. But that in the majority, it is present in both brain and Cord at the same time.

I will just quote the following from Journal of Mental Science (vol VIII page 221):

"Salmon regards General Paralysis as in many respects resembling Bright's Disease, i.e., as a constitutional affection in which the starting point is in the brain and not the Kidneys. In his own words—"

"The diffuse perivascular" (General Paralysis) present, membrane, a striking analogy of diffuse hepatitis (differential Bright's)."

"The former is anatomically characterized by a degeneration in the tissue of the cortical substance of the brain, destroying the nerve tubes, and nerve cells. Clinically it is characterized by a profound alteration in the function of the cortical substance of the brain. The latter is anatomically—"
Characterized by a degeneration of the tissue of the kidney, and by atrophy in the urinary canals and Malpighian bodies. Clinically, it is characterized by a pronounced change in function of the kidneys. In this disease, we observe stages of hyperemia, increase of volume, degeneration, softening, and atrophy.

It is also noticeable that both diseases occur in men in the prime of life, and in both there is marked accentuation of the aortic arch. Dr. Melne P. Keith, however, regards this latter stage in not one due to increased vascular tension, but to increased vascular area. He asserts that the vascular area of the circulatory system is enlarged, and that the aorta valves are closed by a larger, and therefore heavier, column of blood, and that this leads to the accentuation (West Riding Asylum Report 1856).

--- The End ---