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SOME OBSERVATIONS ON GENERAL PARALYSIS OF THE  
INSANE IN THE FEMALE.

Thesis for the degree of M.D.

by

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SOME OBSERVATIONS ON GENERAL PARALYSIS OF THE  
INSANE IN THE FEMALE.

The earliest mention of General Paresis dates back to 1798 when Haslam pharmacist at the Bedlam Hospital described the principal features of the disease. The next authentic report was made about 100 years ago by Esquirol who observed a condition of dementia complicated with paralysis. He also observed the defect in articulation, and noted its importance as an element of prognosis. Georget described it in 1820 as chronic muscular paralysis, and later the same disease was described by Calmeil under the name of paralysis observed in the insane. So far it was looked upon as a special form of paralysis super-imposed upon insanity as the complication of an already existing mental disease. In 1822, Bayle formulated a new theory. According to him, general paralysis was not a mere complication of insanity but a disease of itself. He called it arachnitis or chronic meningitis on account of its predominant lesion, made the ambitious delusions its necessary characteristic symptom, assigned it a regular course divided into three successive periods, one of monomania/

monomania another of mania, the third of dementia. He considered as pathognomonic the adhesions existing between the meninges and the convolutions. The ideas of Bayle were on the whole accepted by degrees. Parchappe in 1838 regarded general paralysis as a special form of insanity and named it paralytic insanity. Requin in 1846 proposed a restriction of this view, he applied the term progressive to general paralysis and recognised two forms - one with intellectual disorders, the other without. Baillarger claimed that from a psychic point of view it is the dementia and not delusions that constitute the essential symptom of the disease. He proposed the name Paralytic Dementia. In 1858 a long and interesting discussion took place in the Medico Psychological Society which resulted in the endorsement of the views of Bayle, namely, the principle of the essentiality of a general paralysis. Attention was now turned more particularly to the study of the characteristics of the disease.

First the clinical analysis of the disorder was taken up and its description perfected. Second the investigation of the anatomo-pathological lesions and the application to it of the microscope. Next, Foville/

Foville tried to prove that the symptomatic differences of the malady are due to the local lesions in the brain.

In 1882 Baillarger proposed returning to the dualist theory advocated by him as far back as 1858 which suggests the existence of two quite distinct disorders capable of occurring together or separately.

- (1) Paralytic dementia the principal disease.
- (2) Paralytic insanity the accessory affection.

In short the history of the disease may be divided into three principal stages:-

- 1st, It is considered as a complication of insanity.
- 2nd, A special disease having among its symptoms insanity.
- 3rd, It is looked upon as a paralytic dementia to which is associated insanity.

#### DEFINITION.

To define General Paralysis is almost as hard as to define insanity. Every writer has his own definition, and none is better nor more comprehensive than that of Dr. Clouston. "An organic disease of the Brain, characterised by progression by the combined presence of mental and motor symptoms, the former/

former always including mental enfeeblement and mental facility and often delusions of grandeur and ideas of morbid expansion or self satisfaction; the motor deficiencies always including a peculiar defective articulation of words, and always passing through the stages of fibrillar convulsion, inco-ordination paresis and paralysis; the diseased process spreading to the whole of the nerve tissues in the body, being as yet incurable and fatal in a few years."

#### PRODROMATA.

There is perhaps no disease that begins more gradually than general paralysis. Its invasion is so gradual, it is usually impossible to fix its real commencement. There is a true prodromal period, the earliest symptoms showing either in the mental, sensory or motor apparatus, but so slight a degree that the friends do not notice the same. If carefully questioned, they will doubtless admit that the patient had become strange or was not what he used to be formerly. The law of dissolution is well seen in the prodromata of General Paralysis whether the symptoms belong to the psychical or physical domain.

Irritability/

Irritability; outbursts of uncalled for temper; faulty and uncertain memory; childishness; sleeplessness; general indifference to one's surroundings and apathy may be mentioned as early mental changes which are easily passed over without calling for any immediate interference. Whilst headaches; transitory eye or ear troubles; gastric conditions or vague pains are discovered later to have been premonitory symptoms of this terrible disease. The period of prodromata is seldom absent. It is often very long, lasting months or even years, & though no definite statistics seem possible on such a point, from observations made over a large number of male and female general paralytics, the period appears usually to be of shorter duration in the female, while the duration of the disease itself is said to be longer.

#### AETIOLOGY.    AGE.

The disease is most common between the ages of 30 and 50, but may occur earlier or later in life. The puerperal period and the menopause appear special periods for the commencement in the female.

SEX.

The male is much more prone to the disease in the ratio of four to one amongst the lower classes. "The disease occurs in England," says Dr. Savage, "among the middle and upper classes ten times as frequently among men as among women."

DISTRICTS.

In "Mental Affections," Dr. Macpherson remarks:- "It may be generally stated that the disease does not exist in the Highlands of Scotland or in Ireland, outside the larger cities or in the more rural and remote districts of Wales and the south of England. It reaches its maximum in the busy manufacturing towns of the Midlands and in the larger cities of the United Kingdom."

"It is rare" says Dr. Savage, "in a purely agricultural population."

HEREDITY.

A direct heredity of insanity or General Paralysis/

Paralysis is comparatively rare. Ball and Regis have studied the genealogy of one hundred general paralytics and found in their family but four insane individuals, while the number of those afflicted with organic nervous diseases mounted to one hundred and forty three. Numerous cases have however been recorded of general paralysis in parent and offspring. Evidence of arterial degeneration, as Apoplexy, Bright's Disease, Gout, etc., have been met with in the parents of general paralytics. (Dr. Savage) The late Dr. G. R. Wilson held that there was a diathesis of general paralysis. Many cases have been reported of conjugal general paralysis, but this is doubtless due to the reciprocal syphilization of the two parties.

#### CAUSES.

There has been much controversy and debate on the subject of the cause of General Paralysis. There is no doubt the disease can not be attributed to one cause alone, but is a combination of several. Given a system weakened by alcohol, sexual excess or syphilis/

syphilis, and to this weakened state add excessive worry, anxiety, mental strain of any description or some head injury and we have the perfect condition for General Paralysis. "Worry added to other unfavourable conditions is one of the most common causes of General Paralysis of the Insane". (Dr. Savage.) This seems the most common cause in women.

#### SYPHILIS.

As far back as 1857 Esmarch and Jessen came to the conclusion that syphilis is the cause of General Paralysis. This idea found acceptance in Germany and Britain, but in France it gained ground more slowly. Even in 1886 Déjerine wrote:- "Syphilis is very rarely found in the histories of general paralytics and has no influence upon the course of the affection. When found, it is but a coincidence." However, to-day, with few rare exceptions, all authorities consider syphilis as an important factor in the causation of General Paralysis.. One need not enter here into the reasons for or against Syphilis as a cause, suffice it to say that statistics have proved from history or other evidence obtained/

obtained that syphilis is found in about 65% of all cases. Post-mortem results help to support the syphilitic view. Amongst the strongest arguments against syphilis are:-

- (1) That in all well-syphilised races such as the Chinese, General Paralysis is rare.
- (2) The small percentage of syphilitic individuals who develop general paralysis.
- (3) Non-response to treatment by mercury or Potassium Iodide in General Paralytics.

#### ALCOHOL.

"The abuse of alcohol is undoubtedly a frequent cause of general paresis" (Mendel). This statement is borne out by most authors. Dr. Stoddart makes the bold statement, "I have never had a patient suffering from general paralysis who had previously been a teetotaler."

#### TOXIC THEORY.

Dr. Ford Robertson believes that General Paralysis is due to a bacterial toxin acting upon a system/

system weakened by predisposing causes such as Syphilis and Alcohol. He writes himself in "Pathology of Mental Diseases" 1900, "My own studies upon the subject incline me to regard the auto-toxic theory. The disease depends upon an occurrence of a general toxic condition, the exact nature of which is still obscure, but which is certainly in many cases the result of antecedent syphilitic infection." Later "the part played by Syphilis is no doubt an important one, but it is only that of weakening the general and local defences against bacteria. There is the clearest evidence that the general paralytic suffers from an active bacterial toxæmia. (J. Ment. Sc. Ap. 1906 ,Abstract from Morrison Lecture). In a number of cases he has found an organism (the diphtheroid bacillus), resembling the Klebs-Loeffler bacillus, in the Brain, in the alimentary tract, and in the respiratory passages. This organism has been injected into rats, and they have shown clinical symptoms and post-mortem changes in the brain resembling those found in General Paralysis.

TYPES.

- A. The Demented Form. Onset is chiefly characterised by indifference and loss of memory. Chief symptoms are profound mental enfeeblement which is progressive with the usual physical signs. No remissions as a rule in this type.
- B. The Expansive Form. Onset begins with morbid activity and excitement and general lack of control. Chief symptoms. An excessive feeling of well being, effusive benevolence and delusions of grandeur. Remissions are frequent.
- C. The Maniacal Form. Onset, wild excitement and confusion. Chief symptoms: noisiness, destructiveness, incoherence, sleeplessness. May continue and terminate rapidly (galloping General Paralysis of the Insane) or remissions may occur and patient keeps well for years.
- D. The Depressed Form. Onset is marked by depression and indifference. Chief symptoms: melancholy delusions often of an hypochondriacal nature. Remissions are not uncommon in this variety.
- E. The Stuporose Form. Onset. Indifference to surroundings/

surroundings and lack of volition. Chief symptoms: stupor, refusal of food, wet and dirty habits, Remissions rare.

In women the demented and depressed variety are most common. Krafft-Ebing and Regis ascribe this peculiarity to the relative poverty of ideation in women. Remissions in the female sex are rare.

The physical symptoms in all these types are practically the same, and there is no outstanding difference between the symptoms in the male and those seen in the female.

I now propose recording three cases of General Paralysis in the female noting their points of semblance and difference, comparing them with the recognised statements regarding Female General Paralytics, the literature on which subject is all too scant. The family history and the onset of the illness are given as fully as possible, while the clinical aspects and post-mortem results are recounted in detail. .

1. A. H. Age, 44, Married.

#### Family History.

Patient was an illegitimate child. Her father was/

was apparently a neer-do-weel, verging on the criminal class. Originally, a domestic servant. She married, while quite young, a miner. She had three children, no miscarriages, but the last two labours had been difficult. Throughout her married life, she had been given to bouts of drinking.

#### History of illness prior to Asylum.

For several months before admission to the Asylum she had been depressed. Her memory had become impaired, she was irritable and careless about her household affairs and her own person.

On admission she was dazed and stuporose and remained practically in that condition all the time. In appearance she was a thin pale ill nourished woman with dilatation of the stomach. She had slight tremors of the lips, and facial muscles, and of the hands. She had no eye symptoms. Her pupils were equal and reacted normally. Superficial reflexes all normal. Muscularity poor.

#### Life in Asylum.

She was confined to bed throughout the four months/

months she lived. Patient never spoke, usually refused food, had to be fed. Her temperature always remained about normal except on two occasions. Two months after admission, without any perceivable cause, the temperature rose one night to 102°F and remained between 100° and 102° for two days and then returned to normal. Two months later and four months after admission her temperature rose to 103° and continued gradually rising to 104° for two days when she died. Her weight rose during the first month, then fell to rise again in the last month. She never menstruated during her time in the asylum. There were few signs or symptoms during her life in the asylum to lead one to diagnose. General Paralysis of the Insane. The two rises in temperature were doubtless congestive attacks.

(See Charts, Temperature and Weight)

Although no specific history could be got, patient had a scar, round and about the size of one shilling on right thigh three inches below anterior superior spine.

#### Post-mortem.

On reflecting the scalp there were observed on the inner surface several reddish haemorrhagic areas of varying size principally on parietal and occipital regions resembling bruises/

bruises. The skull cap was thickened, the dura mater slightly adherent to the bone, whilst the arachnoid was markedly adherent to the Brain all over. On stripping the membrane it left the brain beneath lacerated. The brain, as a whole, was soft and showed the peculiar worm eaten appearance at parts. On the right parietal lobe was found a small haemorrhagic cyst. The ventricles were dilated. The floor of the fourth ventricle was roughened. The Pia-arachnoid was extremely vascular. There was slight excess of cerebro-spinal fluid. There did not appear to be any marked diminution of the grey matter. Cerebellum, Pons and Medulla were soft but appeared healthy. Brain weight 43 oz.

There were no signs of pneumonia. The other organs except for congestion or some fatty change showed no marked abnormality, except the kidneys. Lying anteriorly in the right iliac fossa were the two kidneys attached superiorly forming horse-shoe kidney. Both kidneys were markedly lobulated. There were two distinct ureters. The pelvis of each kidney had a hollowed out yellowish appearance. The surface of the kidneys was smooth and the capsule/

capsule stripped with ease.

2. E.C. Age 47, Married.

Previous History.

She had been twice married. She had had two children by her first husband and one by her second. Her parents died while she was quite young and no family history was obtainable. For the last few years she had been drinking heavily. She had been a laundress and at about the age of nineteen married a sailor.

History of Illness.

For several months her friends had noticed a change in her general behaviour. From being a naturally quiet and reserved woman she became noisy, talkative, excitable and argumentative. Her memory began to fail and she became childish. She had reached the menopause about eighteen months before admission.

On admission to the Asylum she was markedly exalted and excited and her speech was hesitating. She appeared in good physical condition. Her patellar reflexes were exaggerated. Her left pupil was irregular/

irregular in outline and reacted sluggishly to light and accommodation. There was no paresis nor were there any tremors.

Life in the Asylum.

She rapidly improved mentally and for twelve months she kept physically well going about and working in the laundry. At the end of that period she began to show both motor and mental symptoms. Her gait became unsteady and her speech much slower and more drawling. A few months later her power of swallowing became much impaired. Her knee jerks were now completely absent. She continued thus for about nine months and then had to be confined to bed. Marked tremors of the mouth and face were now present and gradually her powers of swallowing became paralysed.

Temperature and Weight (see charts.)

Post-mortem.

Brain weighed 38 oz. The skull cap was much thickened. The Dura was thickened and adherent to the bone posteriorly. The brain as a whole was soft and very congested.

The Pia-arachnoid was adherent to the brain substance, and/

and on stripping dragged with it portions of Brain.

Cerebro-spinal fluid was increased.

The Ventricles were dilated with roughening of surface.

All the viscera were congested. The kidneys were markedly sclerotic.

She was in the Asylum for a period of twenty five months.

3. H. M. Age 44, Married.

Previous History.

No reliable family history as to parentage of this patient could be obtained. She married at the age of twenty, a sailor, and had one daughter.

History of illness.

Some years ago she had met with a slight head injury, a blow. She had often complained of severe pains in the head which had been treated for rheumatism. About four months before admission she had complained of pains and weakness in her legs. She had always been a cheerful steady and sober woman. She now became childish and foolish in her behaviour, irritable and difficult to deal with and her memory failed. She had ceased to menstruate about six months before admission.

On/

On admission to the Asylum patient was noisy and excited. Her speech was markedly affected, slow, slurring and scanning. Her pupils were unequal and reacted sluggishly to accommodation, but did not react to light. Her expression was vacant and foolish. She was unsteady on her feet and showed signs of Rombergism. Her patellar reflexes were markedly exaggerated.

Life in Asylum.

She was in the Asylum for nine months and during that time got steadily and progressively worse. She was noisy and very emotional, shouting, laughing and crying alternately. She became dirty in her habits, due undoubtedly to paralysis of her bladder and rectum. Her limbs became contracted and nutritional changes showed themselves. Her teeth became loose, her mouth swollen and abscesses formed\* in the region of her nose.

Post-Mortem.

The bones were soft and the ribs easily cut through.

Brain weighed 41 oz. and showed the usual changes of General Paralysis, but to no marked extent.

Thickening of the Dura, adherence of the Pia to the Brain/

Brain, slight increase of Cerebro-spinal fluid were all present. The whole Brain substance was soft and there was some roughening of the floor of the fourth ventricle.

Right lung showed marked oedema at parts with some pneumonic consolidation at the base.

Kidneys showed signs of nephritis and interstitial growth.

Cirrhosis of Liver was present and fatty degeneration of the heart.

These three cases show some interesting points. We notice that each patient began to show mental symptoms within twelve months of the menopause impressing upon one the importance of this period of life in the female.

In each case loss or impairment of memory was the chief symptom noticed by the friends.

Though no specific history in any case could be proved the facts obtained from friends arouse suspicion in that direction. In the first case that of A. H. the scar noted on the thigh bore all the characteristics of an old syphilitic sore, whilst the life she had led was one that would render her liable to such infection. In the other two cases those of E.C. and H.M. both had married sailors who from all accounts /

accounts were of the type that "go ashore with a different wife when they come to each foreign port."

We have a distinct neurotic heredity in the first case to which is added a history of alcoholism and a large element in favour of syphilis.

In the second case we get a history of alcoholism with the great possibility of syphilis, while in the third case there is the head injury, no alcoholism admitted and the same doubt as to syphilis.

Dr. Savage believes that General Paralytics with neurotic heredity differ in the course of disease from those who have no such heredity; again that which depends on syphilis alone differs from that which results from syphilis plus injury or syphilis plus alcohol. He discovers no special type of the disease depending upon a combination of these factors. In the cases recorded the types were undoubtedly different. The first being of the Stupor type, the second of the excited passing into the Demented Type, and the third purely of the Excited Type.

Though all three cases were admitted from country districts their married lives were doubtless largely spent in crowded areas. One having been/

been the wife of a miner and the other two wives of sailors.

Savage notes that the reflexes in women are usually much more exaggerated; this was found to be so in two of the cases on admission whilst in the other the reflexes were normal.

Congestive attacks are said to be less frequent in the female and that was the case in the patients whose histories have been given. This is brought forward by some as one reason for the longer duration of the disease in the female.

The interesting points in regard to the autopsies were that the Brain of the first case A.H. was undoubtedly the most characteristic of General Paralysis though in life she had shown the least marked symptoms of these three cases, while the opposite held good in the third case recorded that of H.M.

In each case some kidney lesion was found and moreover marked congestion in many organs. Klippel who has made a careful study of the organs in many cases of General Paralysis has discovered a high degree of congestion capillary engorgement and capillary/

capillary haemorrhages also atrophic degeneration of epithelial tissues which he terms vaso-paralytic lesions. Angiolella attributes the changes in the organs to the action of some toxic substance.

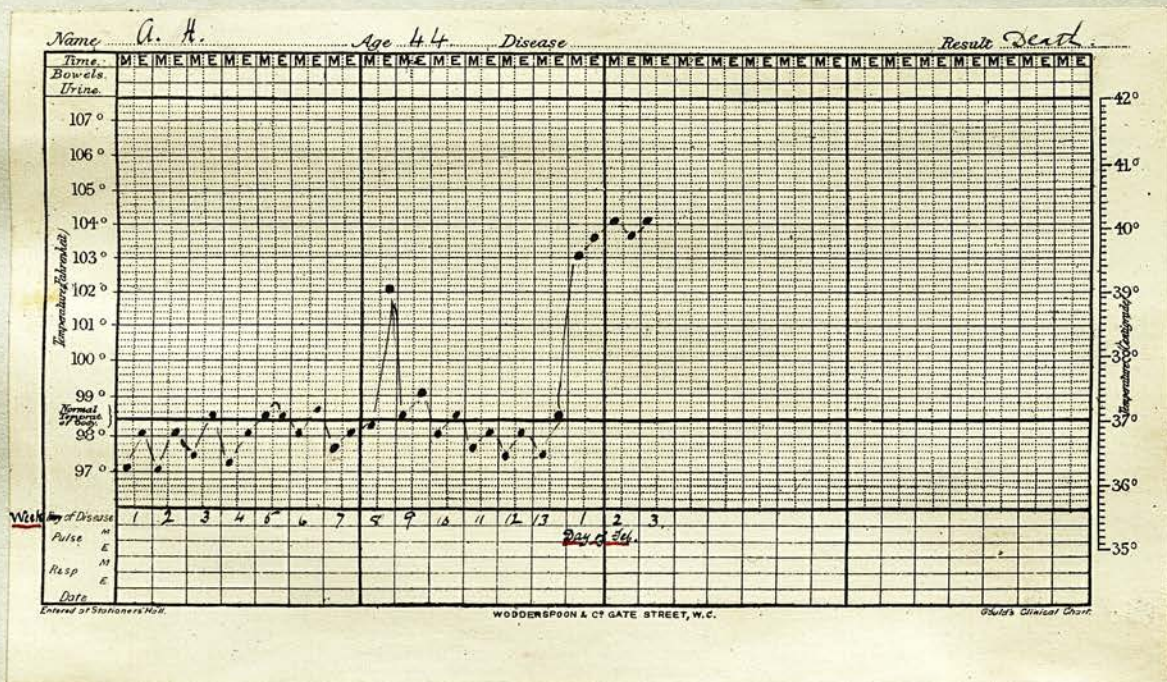
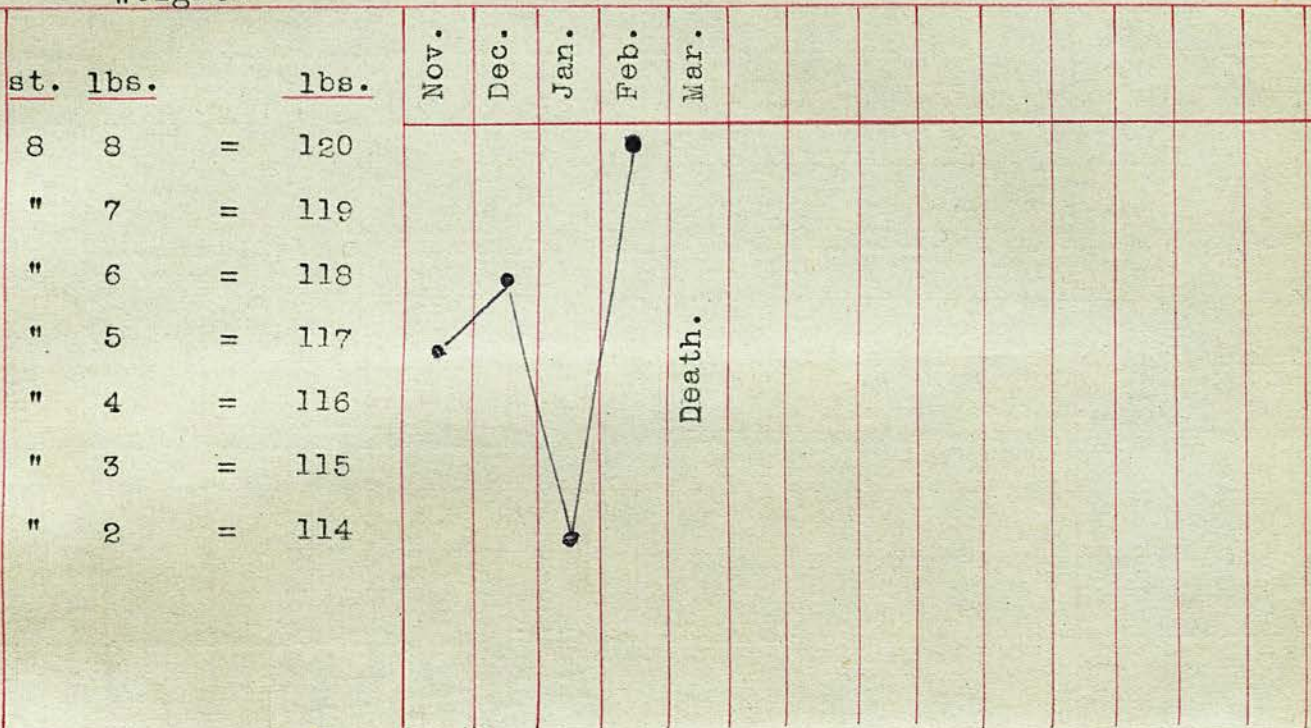
In conclusion one would call attention to the greater relative frequency of General Paralysis amongst women at the present time and without assigning any definite cause for this fact, suggest as possible the following:-

- I. The greater strain and stress of modern life.
- II. The larger part played by women in the public life of the community.
- III. The increasing indulgence in alcohol, amongst women as pointed out by Dr. Robertson of Morningside recently in his Annual Report.

It is yet too soon to speak authoritatively on the lately suggested treatment by Salvarsan, Soamin, or the Serum and Polyvalent vaccines mentioned by Dr. Ford Robertson, but one trusts that in these are to be found the essentials which will lead to the ultimate cure of this dread disease.

A. H.

Weight.



E.C.

Age 47

Disease

Result

E.C.

Age 47

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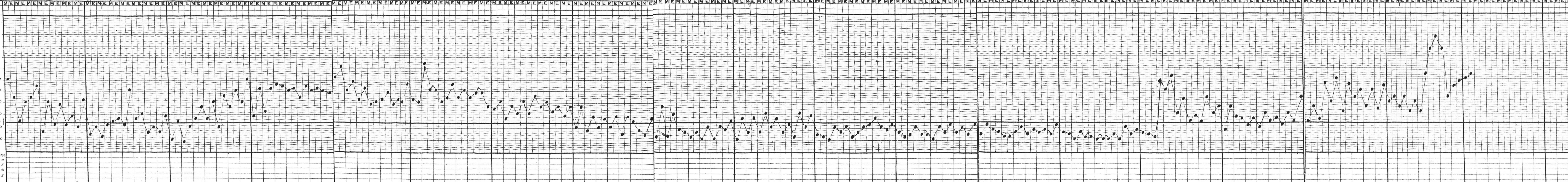
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Age 47

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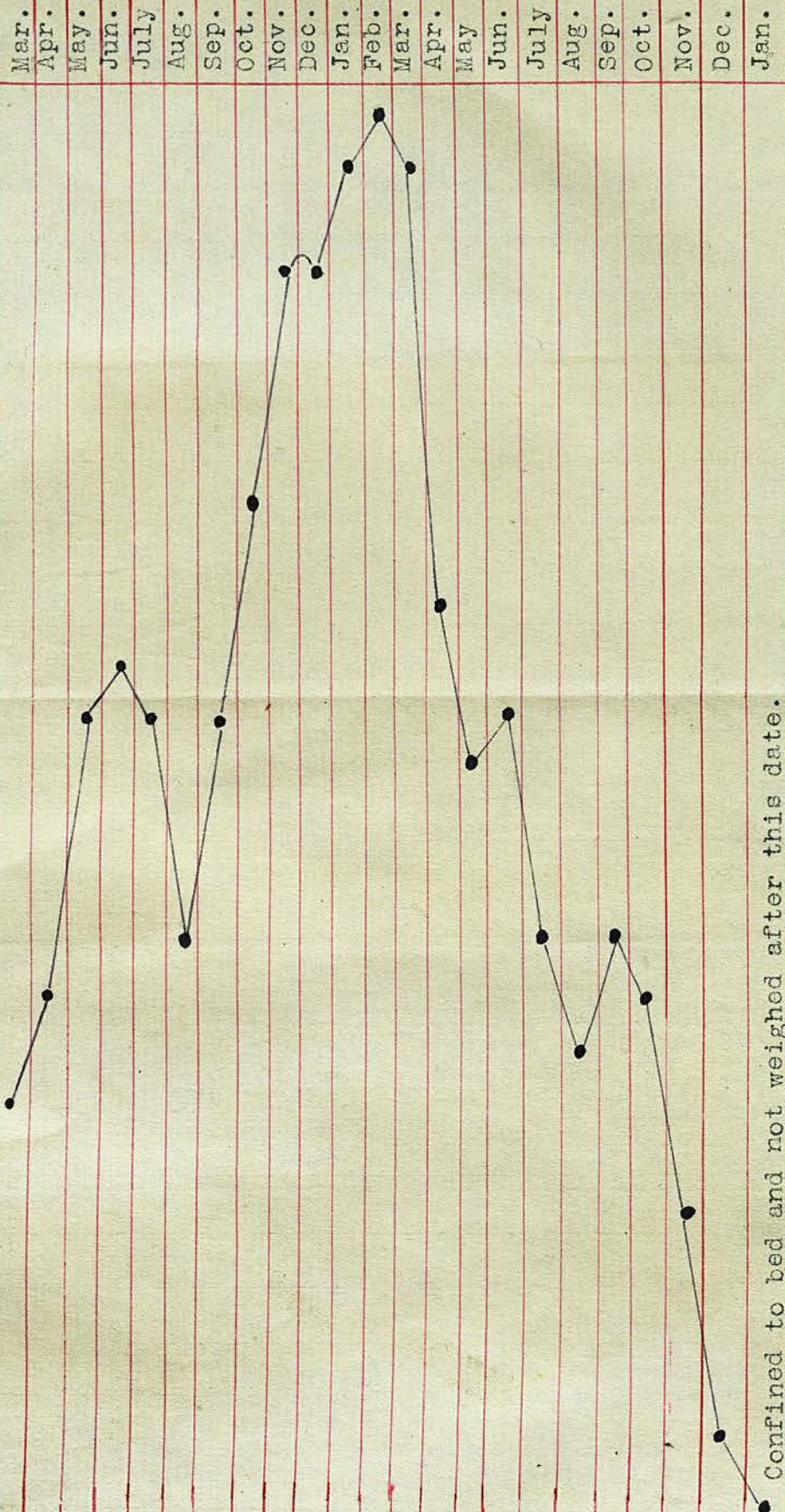
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E. C.

Weight.

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| Name        |      | Age |  | Disease |  | Result |  | Name  |  | Age |  | Disease |  | Result |  |  |  |  |  |  |  |  |  |  |  |
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| H. M.       |      | 44  |  |         |  | Dead   |  | H. M. |  | 44  |  |         |  | Dead   |  |  |  |  |  |  |  |  |  |  |  |
| Time        |      |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
| Bowels      |      |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
| Urine       |      |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
| Temperature | 107° |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
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|             | 98°  |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
| Pulse       | 97°  |     |  |         |  |        |  |       |  |     |  |         |  |        |  |  |  |  |  |  |  |  |  |  |  |
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A LIST OF BOOKS AND JOURNALS CONSULTED.

1. Clouston - Mental Diseases.
2. Maurice Craig - Psychological Medicine.
3. Ford Robertson - Pathology of Mental Diseases.
4. De Fursac - Manual of Psychiatry.
5. Klippel - Arch. de med. experim. et  
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6. Macpherson - Mental Affections, 1899.
7. Savage - System of Medicine,  
Allbutt and Rolleston.
8. Stoddart - Mind and its disorders.
9. Journal of Ment. Science - July 1901, p. 441.
10. " " " " - April, 1906, p.p. 278-9, 287, 305.
11. " " " " - April, 1909, p. 321.

