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Cases of Nervous Disease with Remarks on Ophthalmoplegia, Aphasia, Ataxia & Peripheral Neuritis

by

W. J. P. Bwan M.B., C.M. 1880
I case of Tumour of the Pons Varolii with double Optic neuritis, Ophthalmoplegia externa, and interna, and various forms of Paralysis.

B. R. aged 6 years residing in Oldstreet, Huddersfield was seen by me first in July 1884.

He had suffered from slight Paralysis of the Right arm, inability to walk, and a Paralysed leg.

Two years ago he received a blow on the head, since then he had become strange in his manner, his walking pone becoming a mere waddling had become an inability, and for the past four months they had noticed the strangeness in his manner.

A fortnight before I saw him he had a fit in which he fell into the fire, but as the fit was unobserved I was unable to make out whether it was paroxysm or universal.

Mother and Father healthy no Syphilitic history.

Foot became weak and a large Syphilitic.

Both eyeballs were very prominent, and as one looked at them, the axis of both were slightly downward, and of each slightly outward.
Removed them very slightly, a little in every direction, more outwards than any other. This might have been towards the end of the case. The pupils reacted very slightly at first to light about accommodation I was unable to satisfy myself whether there was any result. The field of vision normal.

Double optic neuritis.

Hearing normal, and no apparent anæsthesia. The child could stand with slight support when asked to walk; made great effort and then afterwards struggle cried out "I stumble." When lying down could kick, and lift weight tied to the feet. And as far as rough testing, there seemed good power in the lower extremities.

There was well marked loss of power in the right arm, without corresponding anæsthesia. Being poor people, his mental condition was difficult to test. But I think it was impaired, he could count numbers, and tell the names of common objects. Paralysis was the only other symptom.
No change took place for three months, when he had an attack characterized by stupor, more convergence of the eyeballs, more proptosis, and complete conjunctivitis; this was followed by elevation of the cornea, and loss of sensibility on the left side of the face.

He improved fortnightly.

He then had double facial paralysis; that on the left side complete involving the orbicularis on the right side still involving slightly the orbicularis, but the lower part of the face was more so. This latter side remaining permanent until death.

Before death he had convulsions. There were general convulsions. Contra was suspended.

At no time was the temperature elevated.

With the exception of the above there noting of interest.

The above history is condensed but in it I leave out no important symptom.
A post mortem was made 12 hours after death. All parts were healthy except the brain. Here a degree of bulging was noticed anteriorly, and on section a round, smooth, encapsulated tumour was found.

In circumference the tumour was less than a two shilling piece. Not quite circular, being slightly fuller towards the upper end. Its situation was almost in the Centre, extending towards the upper half. Dr. Currie (one of the surgeons at the Huddersfield Infirmary) who helped me with the post mortem was of opinion that the right side of the Pons contained more of the tumour than the left. But this was doubtful.

The tumour extended below the level of the fifth nerve.

In a diagram on the next page, I have indicated in red ink the position of the tumour in vertical sections.
Fig 1
Diagram of a median section shewing the Pons and Cerebellum. Modified from Allen Thomson (Brain)

A microscopic examination of the Tumour was made and it was composed largely of granular debris with cells, some similar to leucocytes, others larger, and numerous granular cells. Actin the Palæto庭ium was carried out with some difficulty, and more direction was given to ascertaining the naked eye relations. The part of the Pons. Saved for examination were found to be spoiled.

Altus W. Tubercle was discovered elsewhere. The description corresponds with a typical tubercle car. mass.
Remarks. Many of the symptoms. The double facial paralysis, the paralysis of the right arm, the double optic neuritis - anesthesis of the fifth especially with liberation are those that have been frequently noticed, and are quoted by all authorities as occurring in cases of the Pons, may be easily understood from the anatomical position. There remain three symptoms which call for further remarks. They are, double ophthalmoplegia. Del Pint: the loss of walking which for the present I call ataxia. The conclusion - besides these the absence of others calls for some notice.

Ophthalmoplegia externa interna. on both sides is mentioned by Powers in his Diseases of the Brain, p. 188, as a possible symptom of tumors of the Pons in the upper half. In the cases I have read there seems to have been none with it so marked as in the present case.

Ophthalmoplegia is in most cases, a useless disease, Powers, p. 188, Diseases of the Brain. and that is also a degenerative lesion as a rule.
In the diagram the close proximity of the tumour to the nuclei of origin of the 3rd, 4th, and the connecting strands of fibres of these nuclei to the 6th, will explain how their function was interfered with in B.R.

Most of the cases quoted, especially by Hutchison, and others have occurred in tabes syphilitis, locomotor ataxia, or progressive muscular atrophy.

Putting aside these, is there anything in the form which would be useful in localising the lesion, or in its associated symptoms which would enable a diagnosis of the pathological lesion to be made?

With regard to the latter point, especially excluding the diseases mentioned, the presence of double optic ataxia will be strongly suggestive of tumour in the upper part of the pons. Especially as the other sources of pressure would be either a double lesion at the base, or tumours of the bones of the base pressing on the nerves, either nearly always syphilitic.
To Allan Sturgis, in a paper read before the Ophthalmological Society, Thursday May 12th 1881.

Divides it into three divisions.

I. The true paralysis of peripheral origin of eye muscles from involvement of the trunks of the nerves.

II. Paralysis due to lesions involving the nuclei of origin of the nerves, which would resemble the peripheral paralysis in many respects, but would present points of difference for the following reasons: (a) that all the fibres of the nerves did not emanate from the nuclei of origin; (b) that there were good reasons for believing that a low degree of coordinated association of muscle took place in the nuclei of origin.

III. Paralysis due to lesions of the higher coordinated centres. In this type, the association of paralyzed muscles would have ceased to correspond with nerve supply of this type; there would be several varieties. (c) The paralysis might affect muscles involved in a single coordinated action alone as the two superior recti; (d) it might involve all the muscles of both eyeballs except those in a single coordinated
Action—except the Levatores palpebrarum, for example.

C) The paralysis might affect the centres for accommodation, or for the pupils alone, or it might affect these in conjunction with some or all of the external muscles.

The latter of the large divisions he further arranges according to the groups most probable.

In support of cases of central origin he gives two cases of sudden ophthalmoplegia in which the palsy was more or less coordinated.

Grower page 186. says as to the diagnosis when there is paralysis of internal muscles of both eyes, or paralysis of the external muscles without affection of these within the eye.

Disease of the nuclei can be inferred with confidence. The internal muscles never escape in disease of the nerve trunk so when this paralysis many of the external muscles.

Central disease is also shown by paralysis of these muscles of both eyes that are associated in their action. When however the internal and external muscles of both eyes are affected, the diagnosis of nuclear can be only made.
after careful exclusion of disease of the base of the brain. — Nervous System. Volume II.

In the statements of Powers and others, there are some differences with regard to the indications of diagnosis of Ophtalmoplegia interna. And an explanation of all the cases that are described in 3. no means clear.

Among some obscure cases I may mention one by Dr. Beerer reported in the Medical Journal, March 19th 1887, in which the symptoms were associated with Rheumatism. In the same journal of February 5th the case of Dr. Berry, in which the diagnosis seemed to be placed by different speakers as Tubercular, or Thrombus or Swelling of the Tens. Another case of obscure origin is one Dr. Seymour Share Key reports a case to the Ophthalmological Society in Nov 12th 1885. But perhaps the most remarkable cases are those of Dr. Bristowe in his Essays on the Nervous System under the heading of Cases of Functional Nervous Disorder, in which there were Ophtalmoplegia Interna etc. Three Cases. pp. 61 to 91.
The first two cases were much alike. In each the ophthalmoplegia was progressive, external, associated with Epileptic fits, Rigidity, hemianesthesia, headache, sickness, and high temperature, persistent in the first, occurring before the fits in the 2nd case. Eales was associated with a so-called functional nervous disease. The first Gravois disease, the 2nd Chorea. In the first case death by Bronchitis, and at the autopsy nothing whatever was discovered; in the second case recovery took place. Whatever was discovered of the intimate Pathology of cases of ophthalmoplegia, these cases stood on a peculiar footing. The reasons given by Dr. Prior to urge against their being Hysterical are valid. Some time ago Dr. Moxon in his Croonian Lectures laid considerable stress on congestion of the various vascularplexuses as causing severe symptoms of Brain Disease. An extreme Turpescence of the fold of pia mater within the 4th Ventricule Might Cause Ophthalmoplegia by pressure,
And this would escape observation on Post-mortem. The chief argument against such a cause was the persistent and the motor paralysis. The only other explanation and unsatisfactory one is a molecular change. The third case seems different. There were besides Ophthalmoplegia Extrema and Interna, Epileptic fits, and the signs of Headache, peculiar Stomach symptoms, and Bilateral or unilateral vocal Paralysis of the Abductors of the eyes. The cause of this case seemed to be organic. At page 289. There are described some cases of tumour involving the parts in the neighbourhood of the third and fourth Ventricles, and the aqueduct of Sylvius. The first two of these cases had Ophthalmoplegia as a symptom.

Of the first case in his report on the Eye symptoms Mr. Hetticke says, "All the movements of the Eyes are more or less imperfect, unless it be the movement downwards, which is better executed than the rest. The defect is greatest in the Right Eye, both as to the elevator Palpebrae, Supra-orbital,
and the Internal Rectus. The paralysis of the Internal Rectus is considerable, less
marked than that of the Superior, and Intern.
cal Rectus. The Right eye is directed outward,
and stands on rather a lower level than the
left. The pupils are equal, of natural size
and act well to light. Action to accommoda-
tion I could not determine. The Dendromot-
Symptoms point to disease higher up the
Trunko-nerve, and missing the centres
for the Iris and Ciliary Muscles.

The Second Case. The pupil unequal,
the left being larger than the Right, and do
not react to light. The legs diverge; this
Appears to be due to an External Spinal
opttie Reflex Eye. The movements, of which
were generally restricted. The patient
in this latter case could neither see
nor hear, and there would be difficulty
in ascertaining exactly the precise
state of matters.

In the first, and also to some extent the
Second of these cases a distinction Ca be
made between cases in which the lesion
is regular and univariably, and those
in which the degree of movement changes somewhat together with its not corresponding in the two eyes.

A tumour by causing pressure would be most likely to cause the latter form of ophthalmoplegia.

In a case of Dr Macgregor of Aberdeen of tumour of the Pons, published in a short article in the British Medical Journal of 1886. Ophthalmoplegia was a very prominent symptom. Its exact characters are not described.

The same author describes a case of tumour of the Pons in the Lancet, Vol. II 1886 which may possibly be the same case. In this case, ptosis and ophthalmoplegia are marked together with its variability at one time, one pupil contracted the other time.

Delayed, and at another there was convergence as at another divergence.

In the remarks I have read on ophthalmoplegia no attempt has been made to discuss its Pathology. It is a symptom of great importance. Although in some of the best known Text Books
on General Medicine where received little
no notice or but scanty Treatment.
Jacquet such works as Dr. Taffe's also in
the first addition. Don't mention it.
And there is little said in Quain's Dictinary.
Bristow, or even Barratt's latest work
on Diagnosis of Paralysis Brain, Spinal, Nervous.
The conclusions that I would offer are that:
I. It is a marked Symptom in some cases
of Tumour of the Pons or the neighbourhood
of the nerve nuclei;
II. That when due to tumour it presents
the kind which is apt to be incomplete
and variable;
III. That if due care many cases can
be localized in their situation either
as peripheral, nuclear, or cerebral.
IV. There are a certain number of cases
where the pathology is obscure, and
the diagnosis impossible. These are
the group to which most of those cases
I have abstracted would be placed,
In the Diseases of Children by Professor Heusch. pp. 287-288. New Sydenham Society's translation. Two cases of tumour of the Pons are graphically described. In both of which some ataxia was a prominent symptom.

In the first case he says:

"Cannot walk without support. When supported under both arms into he could shuffle along laboriously in an ataxic manner. When lying the lower extremities could be freely moved."

In the 2nd case:

"On examination her gait was found exceedingly uncertain, and staggering especially when the eyes were closed." In Dr. McGregor's case before quoted "A tendency to fall backwards and a staggering walk."

Professor Ferrier in Dubois's Dictionary quotes Professor Dupuytren of Berlin as giving a case in the Pons which when diseased causes Ataxia.
on the other hand, Dr. Long Fox in his Summary of symptoms, does not mention it. Neither does Gowers, p. 257. Diseases of nervous system, or Bastian, p. 235. paralysis cerebrae. Bulbus etc.

The lower extremities in walking, though differing in minor details, execute certain regular and orderly movements. According to Landois Blending and Edition, pp. 744, Section 355, 360, 363, 340...

These movements are six in number.

And they are governed by Coordinated reflex centres in the Spinal Cord.

The Coordinated reflex centres are under the control of a centre in the Higher Nervous System. Self-controlled by muscular tissue muscular and possibly auditory impressions the latter including the results of stimulation of the terminal nerve ending in the bruneourcal canal.

Besides the mechanism above stated, walking properly means a proper relation of the various muscles, joints and ligaments outside the body.

The muscles themselves must be functionally...
Requiring a normal structure and proper chemical relations between the molecules—also a normal blood supply and activity of the motor nerves.

And lastly, the motor nerve centres, pyramidal tracts, and motor nerves must be normal. The lesions which can interfere with the power of walking are many, and variously situated.

Confining the causation to disease of the brain, there is especially with tumours, pressure on the pyramidal tracts, interfering with the downward passage of motor influences. Allowing something for other causes it did not seem to me sufficient, and watching the case through life I felt satisfied that above this there was some interference with the coordinating mechanism. Among the factors which go to make up that mechanism one of the most important is the muscular sense. Lundborg Section 480.

Recent writers especially Bastian and Mequert have located the termination of this sense in the 'ascending Parietal Frontal Convolutions.'
Indeed Barthau goes so far as to deny the motor functions of this part of the brain, and assume for it an entirely sensory function, called the Viscerosthetic Centre; others, however, regarding it as having a double function, sensory and motor.

If such an opinion is true, the fibres of this bundle will probably pass upwards in the segmentary portion of the Pons.

Now a tumour situated in the Pons, although not exercising sufficient pressure to cause marked anaesthesia might interfere largely with the function of the muscular-sensory, causing a certain amount of uncertainty in the said.

Gowers. Diseases of the Brain, p. 34. Says: "In the lower part of the Pons above the olivary body is a small body with a somewhat spherical outline. The inferior olivary body lies in the anterior part of the tegmenum, and its important connections have been traced by Reticular. According to him fibres pass up from it to the pons, and central grey substance of the Posterior quadrigeninal bodies; other fibres pass to the nucleus of the
Sixth nerve, the anterior auditory nucleus. The cerebellum (post-nucleus in the middle line) and to the lateral column of the spinal cord. This connection suggests that the body has important central functions. Recent observation have made it probable that the inferior olivary body and the inferior, nuclei have important coordinating functions. In structure these bodies resemble the superior olive although the latter has a much smaller size. Yellow, pcp 176, assume for its position as a centre for bringing into coordination the ocular and auditory.

Speculations: Whether or not this position is established it is possible that the destruction of this body in tumours of the Pons may interfere with the coordinating mechanism and thus lead to some ataxia. All authors agree in ascribing to the cerebellum a chief part in the coordinating mechanism. It will no doubt do this by means of an interaction between its two halves. As well as being in complete functional union with the rest of the
Strands of fibres which go in and out of the middle Cerebellar peduncle will therefore be an important structure in the Coordinating Mechanisms.

Persistence of any part of this body has caused peculiar symptoms.

"Tendency to rotation round the longitudinal axis of the body with a remarkable divergence of the eyes." Action Cerebral paralysis p. 380.

There was no symptom of rotation in the case but pressure would be experienced and an interference of its functions.

The forebrain is a vital organ any large lesion except at tumours seems to be incompatible with life. Hence except in tumours the symptom might not be so striking.

The cases I have quoted together with the one I report point it out as a symptom which is important in cases in tumours of the Pons. And in association may greatly strengthen the diagnosis.
This diagram modified from Gowers and Dr. Ewing will illustrate the points that I have thought important in ataxia. The position of the tumour is indicated by the red line.

The diagram is drawn on a normal scale and does not make allowance for displacement from pressure.
To long for in a summary of symptoms of diencephalitis of the brain, the braindictionary states that convulsions are absent.

In the present case one or two occurred before death, and several although not important before death.

The differences between the symptoms above and the facts in the case, upon irritation or not, are stationary lesions.

Powers Diseases of the Brain page 88 says that stationary lesions never cause convulsions unless situated within, or close to, the motor centres in the cortex; on the other hand, irritating cause them in any situation provided the "irritation" is sufficient.

The slow-growing tumour may be looked on as a more or less unirritating lesion and thus situated in the brain convulsions will be rare, their occurrence is not altogether against a diagnosis of tumour. Although frequent convulsions would certainly favour another lesion according to the view that convulsions are due to a state instability of the
Centres in the motor areas of the cortex—Professor Hollwich of Vienna states that there is an area situated from the origin of the vagus to the corpora quadrigemina, the irritation of which causes convulsions. He calls it a convulsion centre (Bastian 340). If this centre were stimulated, convulsions set up. Convulsions independently of the motor cortical area, another explanation is offered of their presence.

The cases of Bristow before quoted, more or less, support the rule that with tumours, fits are the exception. The first three cases which he places under the head of "functional" were all accompanied by convulsions. In the cases of tumours, four fits occurred, and of the three remaining cases of disease near the fourth ventricle, convulsions occurred on the superinfection of meningitis, another had in addition to a tubercular abscess in the cerebellum various patches of softening, and the last was a case of hydrocephalus. Convulsions occurred in all these also.
Among symptoms which were absent and infrequent, present are difficulties of articulation, depression, and paralysis of the tongue. Their appearance may be easily accounted for by the tumour being situated in the upper part of the Pons.

Another symptom frequently present, but absent in this case except for a rephrased statement of the mother towards the end was: "rise of temperature." Bain has, p. 72, says: the Pons Varolii is an exceptional region of the Brain owing partly to its position within its boundaries, or in immediately adjacent parts of the Medulla. The chief vasomotor centre is situated, also within these parts, if there is not a centre or mechanism that regulates (or in some way affects) the metabolism taking place in the tissues, so at times to produce marked depression at other times marked elevation of the body heat. There is an increased liability for lesions within the narrow area to implicate different fibres proceeding from each centre situated it may be within the Cerebral Cortex. In association with this subject I shall relate my second case.
Case II

Case of multiple Softening or Haemorrhages in the Pons with a clot in the fourth ventricle.

John Straney aged 25 years. Taken ill on November 7th with pains in the head, and body, vomiting, and pyrexia. He was seen by Dr. Harrison one of the junior House Surgeons. at the Huddersfield Infirmary.

The temperature at that early date were not kept. The Case seemed obscure and Typhoid fever seemed the only explanation.

The Case was admitted into the Birkby Fever Hospital under Dr. Camerons care on the 13th of November, and he died on the 27th of November 1884.

While in the Hospital his highest temperature did not exceed 99.8 and his lowest 98.6.

The other symptoms were:

Frequent tossing of the arms and beating about the head. Rapid incoercible to light and at one time eyes turned strongly to the Right; after both eyes were turned up with widely dilated pupils. Cheyne-Stokes Breathing very marked. The tossing movement ceased some hours before death.
Pus breviter disclosed no typhoid lesions.

The substance of the anterior portion of the bone was studded with minute hemorrhages.

Its posterior surface, towards the fourth ventricle, was studded with minute hemorrhages, and there was a clot in the fourth ventricle. Some hemorrhages went to the posterior floor.

Section showed the hemorrhages to be superficial. Brain otherwise healthy.

The chief interest in this case lies in the temperature symptoms.

In section 37 of Lundt's auditory pathology, it is stated that an area on the cortex, where stimulation produced an undoubted effect upon the temperature and condition of the opposite extremity, was situated in the same area as the motor centers for the fingers and rotators of the forelimb, and for the muscles of the hind limbs. Destruction of this area according to Wood gave rise to an increased stimulation of the opposite. Below that paragraph where the above results are stated, Professor Sterling states that an injury to the gray matter
doesn't affect the temperature, but rather when puncture is made through the Corpus Striatum to the base of the Brain, in this subject for Hale White, gives some cases and remarks. J. Leaent. 1890. Vol. 1, p. 1296. Three cases are given with softening of the Corpus Striatum, and pyrexia at the same place. J. Parment gives two cases of pyrexia of cerebral origin. In the first of which there was a large hemorrhage at the level of the Centrotoral area, with a considerable effusion over the Sylvian fissure at its hinder part. Here he expressly states the basal ganglia were quite healthy. In cases of diseases of the Nervous System from or to Briquet gives some of softening of the Pons Varolii and Corpus Cerebri in two of them the 2nd and 3rd where the disease was limited to the Pons. Considerable rise of temperature took place before death. In the case of Functional Ataxioplegia a rise of temperature was noticed, coming in the second case on as the foregoing symptom appeared which having taken place the temperature became normal.
Although it seems probable there is a centre, which when stimulated raises the temperature of the body, situated somewhere in the brain, its exact site does not seem to be definitely decided on by authorities. Facts and cases seem to show that lesions at the base either in the Poue, Crew, or basa. ganglia are liable to be attended with higher, and more irregular temperature than those situated elsewhere.

According to Bourneville, we may be enabled in an ordinary case, by carefully taking the temperature to not diagnose the lesion but also give a prognosis. The rules are given by Bastian, p. 69. Paralysis Cerebr. + Bulbus.

Cases 7. Hemorrhage in which the temperature rises quickly and high soon dies. This may also be explained by the centre lying nearest the base. As the clot in these cases will be large and thus an extensive pressure and interference of function will result, in the other softening unless it occurs in the neighbourhood of this surrounding.
Structures rarely cause a temperature of any height; those however occurring in the Pons sometimes raising the temperature to an extreme degree.

In this case the following relate to one of cerebellar tumours. The temperature before death was 108.7.
Case III

Case of Tumour of the Cerebellum with Palsy, Ataxia, Facial Paralysis and Double Optic Neuritis.


Family History of Palsy.

Slightly previous illness was six months ago where she had an attack of Fiddleness. Had no idea she was the subject of Consumption.

Her present illness began about three weeks ago with pain in the head, almost constant sickness, Squinting, and facial paralysis. The sickness ceased three weeks before admission.

She is short, and thin lying on her left side which is her constant position in bed.

The Right facial and 6th nerve, paralyzed. The facial palsy extending to the orbicularis palpebrarum.

When she turned her head to the Right of the head, she into sudden movements together.
with hystagnus. the eyes and head turning to the left.
Her pain chiefly lay in the occipital region going down the muscles at the back of the neck. No tenderness. The vertigo was also much complained of.
The sensibilities were normal (touch heat pain etc.)
Hearing was completely lost on the right side. Taste and smell normal, organs reflexes normal.
In walking she went four or five steps forward, then four or five to the left, and if not supported she fell. Sometimes backward and more often to the left. In making steps she teetered. The facial muscles showed the reaction of degeneration.
Her mental condition was fair.
Besides the above she had signs of consolidation of right apex.
She continued much the same until the 21st when for the first time she lay on the right side
March 2nd she suddenly became comatose and died with a temperature of 108.
Post mortem disclosed a large mass occupying the whole Right hemisphere, along part of the middle lobe, and some of the Left Hemisphere. Microscopical examination showed it to be tubercular.

There was a small patch in the Left crus.

The Right flocculus was involved.

The diagram represents a cross section through the Cerebellum, modified from Powers. The red ink showing the relation of the Tumour, and the extent to which it involved the cerebellum.

The facial and auditory nerves on the Right side were pressed on by the tumour, and possibly the Right Occipit. This wasn't clear at the Post mortem.

The thalamus seemed also involved in the lower part of the growth but this function didn't seem affected during life.
The above diagram, taken largely from Linnaeus, gives the relationship of the Pons, Medulla, and Cerebellum on the right side with the nerves. It also shows how easily the facial and auditory nerves would be involved in a tumour which pressed the under surface of the Cerebellum.

As having many symptoms in common with the previous I give the details of Eliza Sykes. The case was watched in its course in the Huddersfield Infirmary, but no postmortem was allowed.
Case IV

Eliza Sykes. Case of double optic neuritis and ataxic symptoms.

Aged 34, coal-miner's wife. Complained of pain in the head, and giddiness.

Family and other history unimportant. Except that she had had two miscarriages 12 months ago. Complained of headaches after an miscarriage 14 days before. It became worse and towards the back.

Underpresenting herself as an inpatient. Senior surgeon to the ward. A certain incoherence of manner in her talk attracted his attention and he asked me to examine her. It was found she had intense optic neuritis.

She was pale anaemic and the mouth inclined to ooze.

There was extreme headache, and no actual paralysis, although the whole four limbs seemed weak.

There was double optic neuritis with then limitation of the field of vision. Could read well, and distinguish colours.

Passed urine in bed. Reluctant told to get out but did so.

Tendon reflexes exaggerated.
The chief peculiarities lay in the locomotor and coordinative functions.

She walked slowly, and with a tendency to fall backwards, and when she walked there was a great want of steadiness; in fact, she walked very much like a 'Cerbrite'.

When asked to walk, she would go forwards a little, and then suddenly stop, and walk backwards, for a short distance in a rapid way, almost like the commencement of the walk in a case of paralytic agitans; with the exception the latter goes forwards; if not supported she fell backwards.

She was very restless, talked at random, and seemed unable to fix her attention for any length of time. She slept and took food well. Electrical reactions did not show anything abnormal.

September 4th: after being in the Hospital for a fortnight, the urinators had gone on to Atrophy.

8th Sept.: Notes say there was almost complete perversion of intellect. When left alone she scrambled along the passages; sometimes backwards,
Sometimes forwards, falling down, and
Crawling, or managing to get up again.
She continued about the same until her
Dolly when she died suddenly.

No postmortem was allowed.

The weakness of all four limbs without
any ocular, or facial paralysis
suggested pressure on the pyramidal
tracts where they are close together.
There was no anaesthesia. The double
Optic neuritis, and severe pain pointed
to tumours, and the Ataxia suggested
the Cerebellum. with probable an
interference with the veins of Galleu, and

dilatation of the ventricles, and
perhaps it is to account for the paresis
and perversion of the processes of
Intelligence.

Remarks
Basilew p. 348. Paralysis diagnosis of the
Says about the Cerebellar gait.
"The gait has been compared to that of a
Drunkman, but in some cases it has
Seemed to me closely to resemble that of
a person who walks on the deck of a vessel
in a rather rough sea. The legs are wide
apart, and the progression is staggering
and uncertain, without the spasmodic
movements, or the bringing of the feet down
with a stomp, such as we look for in
Posterior Spinal Sclerosis." Futher on he says,

"Another symptom occasionally met with
in disease of the middle lobe of the
Cerebellum, is a tendency to fall forwards
where the lower part of this segment is specially
implicated; and on the other hand, a tendency
to fall backwards when the upper part of
the middle lobe is involved."

Attention to fall was a well marked
symptom in both cases but especially in
the last.

With regard to the Symptom of nystagmus
Dr. T. A. P. Practice of medicine p. 582 ed. ed. 1875
quotes a case of Dr. Taylor

of a boy, five years old. The eyes, which
were affected with a peculiar form of
nystagmus. When he lay on his left side
the eyes would gradually roll over to the left
And would then be suddenly jerked back
to the Right, when he sat up there was
a continuous movement of the head from left
to right...

In explaining the symptom he quotes to
Pernier indicating that from his experiment
that when any part of the Cerebellum is the
seat of irritation, the eyes become turned
in the corresponding direction; in many
cases analogous movements of the head
accompany the eyes. And the tendency
to fall backwards would be explained
of the upper surface being irritated.

The eyes being turned up and the head
thrown back.

The explanation of Ataxia in disease of
the Cerebellum has been attempted by
various writers most of whom hold
different opinions on the subject.

Experimental evidence, and the results
of reflex action in cases of paraplegia
show the spinal Cord to have a close
share in the mechanism of Coordination
Thudoin already quoted. Foster's "Eding".
The function of coordinating experience of the cerebellum will be higher.
D. Broadbent quoted by Lange, p. 532. Say that the cerebellum brings muscular contraction into relation with visual impressions.
Bastian, p. 224. Paralysis.
Claims for it a much more extended function. He then argued that in proportion as movements become more automatic so does the dominating influence of the production of those movements leave the cerebrum and rest with the cerebellum.
Further, that the cerebellum is a storehouse of molecular energy, which is constantly being given off, giving tone to ordinary muscles, but, also keeping up those many contractions that go on during comparative rest.
This latter want of tone was very marked in both cases. The contractions seeming to be flabby and uncertain, and here rests the great distinction between the coordination of cerebellar viscous and those of ataxia. In the latter they seem to be overdone. And failure of coordination
Later place success rather than insufficiency.

The study of playing the piano offers a good opportunity of Coordinating functions.

Over and above the mere playing of two notes, the method of striking brings out sound of different timbre, according to its variety.

The best teachers find several different varieties, according as the pad of the finger, the pulp, or the inner part near the nail is used. Each again showing differences of loudness and softness, to which may be added the results of playing from different parts.

The modern piano allows of a much wider application of these than was thought above.

At first the Coordinating movements so as to bring out every opportunity and advantage is entirely an intellectual process, meaning that the mind learns to constantly guide the positions of the fingers, and in playing unless thought is suspended, the player forgets his exact natural way. At first even each movement of the fingers requires exercise.
After arduous practice, the fingers can accomplish intricate movements in any position, and gradually a slight mental insensible become all that is required. The best players, after long practice, are able to go through large quantities of music without any mental effort or thought as to their fingers, giving themselves to what may be called the reaction of the Muscles on themselves. Even the notes are unremembered, the whole becomes an automatic process, due to intense stimulation of the Cerebellum. The guiding control has been removed from the Cerebrum to the Cerebellum, and also the coordinating reflex centres in the Spinal Cord.

Suggesting three large divisions of coordinating function: Cerebral, Cerebellar, and Spinal. That the former is not entirely left out of control is shown by the ease with which it is movement of the fingers again becomes an intellectual process.

Want of coordination is often present
in diseases of the Cerebrum. The next case
I shall give will be an example.

Professor Stewart in his lectures on Diseases
of the Nervous System, p. 128, says on this
subject: "The mechanism which subserves
Coordination is somewhat complicated.
It is uncertain whether it is subserved by
separate Nerve Structures or not. I incline
to think that it is. It requires sensory
Structures for the reception, Conduction,
and perception of impressions. It requires
central ganglionic Structures which are
thought of some distinct from the Motor
Centres; and it requires Efferevences
of which the impulse from the Centre is
Conducted to the Motor Structures."

The Philosophy of Herbert Spencer has been
brought to bear on the functions of the
Cerebellum, and Coordination by Dr.
Hughlings Jackson in his remarkable
Address to Medicine before the British
Medical Meeting at Leeds. Quoting some
passage he says

"I believe that all the Skeletal Muscles are
represented in the Cerebrum in one set of
of movements, and that all of them are represented in the cerebellum in another set of movements. According are only partial statements. The order of representation in the cerebellum is of movements of the arm, legs, spine. The order of representation in the cerebellum is of movements of the spine, leg, and arm. This agrees with the current doctrine that the cerebellum coordinates movements of locomotion. The back is the most special part in the cerebellar series, and fails first in disease of the cerebellum. The incoordination which results from a tumor of the middle lobe of the cerebellum is referable not to the direct influence of the lesion, but to the over activity of perfectly healthy nervous arrangements which are doing more than their normal share of work, owing to loss of some movements of the spinal nerves. This paragraph seems to open up new ground in clinical observation as to whether in cases of ataxia the result of cerebellar disease it can be satisfactorily made out that the spinal muscles fail. If so it would...
tome help in localization.

Applying the principles laid down in the address to ataxia alone, and especially
motor. The latter Coordination will
be more in the spinals Cord and medulla.

Developed out of them the Cerebellum.

Differently stated. The Brain and spine
may be taken as two separate organs.
The latter. The representation of lower
Evolution involving no volitional power
is situated, but reflex action largely
developed. it contains well-organized
Coordinating Centres such as all lower
species possess. The Brain being a higher
Evolution the motor processes are
Becal to more intricate and political
impulses. Some of these impulses being
necessary to the active & social life
of the being a new Solution is
required in which the starting point
for these motor processes can be transferred
and their occurrence to take place
independently of volition. Any
interference with its activity will again
bring the Coordination of these higher acts
Autocephalus, and then seems to take place in disease of the inculde lobe of the cerebellum. the gait is exactly that of a child learning to walk.
The only other symptoms I wish to remark on are facial paralysis, and deafness in alien snakes. When she was first admitted, the facial paralysis auditory and gait lead to a diagnosis of tumour of the base, or perhaps disease of the petrous portion, and an involvement of the brain circular canals. The presence of double optic acuities which was only discovered some days after admittance, owing to great difficulty in seeing the discs lead to a correct diagnosis.

The next case is one of great interest watched by the visiting house-surgeon of the infirmary for some time. The case died during my tenure of the senior house-surgery. According to the kindness of my junior colleague Mr. Maldwyn obtained a post-mortem. It will be the first of some cases of aphasia.
Cases of Aphasia

Case V. History told me by the grandmother.

Aphasia, accompanied by possible
blindness, followed by convulsion.
Death from brainfever.


When seen first time.

Two years ago the child apparently well
in the afternoon, came back from school
complaining of not being well, also observing
struck at the schoolmaster. In the evening he
became unconscious, and lost the use of his
limbs. She did not seem quite to know whether
it was. Right handed.

On his recovery it was found he was quite
unable to read. Before his illness he was
considerably advanced for a boy of his
age. This state of matters remained
sometime until it was noticed he
used wrong words: then afterwards he
did not seem to understand language spoken
to him, and finally never spoke.

At this time he began to waddle in his gait, and
also continued in the same way for some time
he refused to walk. Soon after not speaking.
He was rather small for his age. He smiled and seemed pleased at a stranger, especially when he spoke loudly. He took little or no notice of things that once pleased him. He took great delight when food was put into his mouth. Especially savoury things. His hearing was good and he chewed with great delight if anything tumbled and made a great noise.

Before I saw him he had completely given up words, and speaking them kept as a mere noise made no impression.

He could stand. I tested the power with some weights, and found he had considerable power. He was constantly slapping his left hand. Of particular notice nothing of importance was noticed.

He used to have convulsions which were universal.

In the other aspects nothing else of importance could be detected.

The visual. The pupil acted to light and accommodation. Action on in much distance was not until he died from brain tumors in the spring of 1886—

The above account is condensed. But all the remaining notes give negative information.
Fig V

View of Brain copied from Landois.

Post Mortem Examination in which I was helped by Mr. Laidlaw then in charge of the case, showed an area occupying a part of the Postero Paramedian Supra marginal, the greater part of the Angular gyrus; the Anterior part of the Posterior inferior with the Postero orbito gyrus of the left side of a yellowish soft confluence quite different from the remaining portions. No part was allowed to be taken away. It pierced the whole cortex of that part. portion named above. The brain otherwise healthy. Brain only allowed to be examined.
Case VI.

Case of Aphasia following Right hemiplegia in infancy.

Laura Ashaw 14-
Family history of fits in one sister.
when only 14 months old the child had two fits one evening, and this was followed by hemiplegia on the right side. The latter soon got better but she was two years before she walked, and three years before she said anything.
Her mother, who brought the case to me at the Huddersfield Infirmary, said of her that the chief peculiarity in her language was that they were "describing words" they could never teach her to read or write.
She was of good height, and looked intelligent, and seemed to understand what was said to her in ordinary things, and messages very well and brought back what she was sent for.
Her hearing was quite good, and she enjoyed a tune.
I asked her to pick up pieces of wood of different colours, and this she did perfectly well.
I asked her about multiplication table.
She could say a few numbers; and then
stealed her of saying twice ten is twelve
she immediately shook her head, but if I said
holy she nodded assent. And seemed
to have some elementary ideas of the
correctness of the multiplication table.
I asked her to repeat words after me.
She was unable to do so. That she had not
heard before—nor rather had not been used to say before.
When asked to name a bell, she called
it a "pinging den," and an eyeglass
she said was a "spying" glass. She could
after the word glass without "spying." When
asked how she was she said "yes well thank"
She could say the alphabet up to two, and
in before said she could repeat a few
numbers, and especially in succession.
She had learnt the names of some simple
Colours.

Strength was remarkably good, and
neither pains had been taken with her.
Nothing else was noticed.

She made no improvement under treatment
neat all her talking was the sort illustrated
above.
Case VII. Laura S. Cooper came to me in Alton in the autumn of 1889. and gave the following history. About two years ago she had had an attack of paraplegia of the right side with loss of speech. The paralysis had completely recovered. This case offered one of the most complete cases of loss of speech I have ever seen. Not a syllable of anything could be uttered. She protruded her tongue quite well and its movements were not limited in the slightest. She had no paralysis, loss of sensation whatever, I took some trouble to test these points.

With regard to her mental condition, she could read, printed words, and written language quite well. When I read out loud she could turn over at the right place, and the history, and other points were given if writing on a slate, and her writing was just as good as it had ever been.

As far as I could ascertain I thought there was no diminution of her intellect. Her age was 22. There was no cardiac mischief or double optic neuritis.
I only saw her once, and advised that attempts be made to reteach her as a child.

Case VIII. A little boy aged 8 who had Measles during the Epidemic that occurred here. During this winter after recovery lost the power of speech for nearly three weeks after recovery. He could write, and hear what was said but was unable to utter anything. He recovered rapidly in the course of a day or two. First using a few words then they all seemed to come back.

Case IX, which I make use of by permission of Dr. Turner of the Alton Asylum. This is a lady of good family had been an inmate twice before for melancholia. I examined her on her admission for a third time. She seemed to be suffering from some delirium. But the speech defects were interesting. When I asked her a question, she seemed to make strenuous efforts to answer me, making use of the sound, uh uh uh, then shook her head and looked in deep pain.
Several times she started the first three or four words of a sentence, and then stopped and gave up the rest. I ascertained that there was a sentence of which she could say two or three words. There were open spaces that had been recently on her mind. She had come from Southampton by train. Twice she started a sentence about the Railway and station, and stopped being unable to complete it, and it seemed quite clear she wished to say a good deal but couldn't. A word remarkable thing about her condition was the fact that every now and then, without any effort, she would say quite a sentence. Automatically. Having no connection with what she wished to say. It coming out seeming to bother her and evidently made her feel that she could speak this sentence, and not what she wanted to.

Her mother had died a fortnight or so before and this had come since. She had some symptoms of instability, opined in the fact that she thought herself forced.
There was no paralysis, and I believe no symptoms. I could not examine the area at the time owing to the relative's attitude wishing her to be handled as little as possible. She is still undergoing treatment at the Asylum. No further changes have taken place.

Case 5: This is a case of a minor form of the above defect.

MRS. C., a lady in good circumstances in the autumn, was suddenly attacked by giddiness and had to go to bed. When she got up, when she began to converse with her daughter, who lived with her. She found herself frequently unable to say what she wanted. She told me several times when talking to her that I could not put words to the ideas as they pass through my mind. Her intellect was capital, and she insisted on having all the accounts of a large establishment brought up to her and quickly attacked the faults that her children had made. Her language was quite clearly spoken. After a month she got better. She's 67 and somewhat better.
Case X. Mrs. C. a lady whom I saw when doing D. Smith's Practice in Leamington in 1888.

About a month before I saw her she had an attack characterized by giddiness, thick ness of speech, and certain weakness of the left arm, which had gradually recovered, but the day before I saw her. She had another attack, no paralysis, but thickness of speech.
She lay in bed: if she raised her head she felt giddy. She saw double, and had slight palsy of the left external rectus, which however passed away. The grip of the right arm was much less than the left. But her legs were not in the least affected.
The chief peculiarity lay in the fact that whereas previously she had been a clear and volubulous talker, she now seemed confined to the simplest answers, with a tendency to repeat herself.
At times if troubled her talk was not intelligible.
She had a clock placed on a wardrobe over her bed, and visited on being visited.
At special times when late she used to point and say "lady, ten minutes" and soon. If asked a more than ordinary question she would say. Can't answer. No words.

During the time I was with her she spoke became better and she made her will.

Andrew a letter from Smith. He says she is much better, and thinks in 12 months will be quite recovered.

I have given these out of several cases. I have seen as being most interesting.

In another case that I shall give a summary of there was towards the end a "low deafness." But another case was interesting in this respect. I shall not give it now.

I now propose to give some remarks on Aphasia as a whole, and with special reference to the cases quoted.


And the monograph of Dr. Ross on Aphasia -
Case IV, which I omitted is a very important one, being a member of our profession. I had the details from him personally. He was never undertaking mental work, but at that time was in a large general practice in London. It took place in March 1894, and besides having carried on his own work, he at that time had considerable mental anxiety from the fact that two of his brothers were ill.

Dr. J.B.J. aged 38, in practice in London. Apparently enjoying good health, was called up at 1 a.m. on March 29, 1894. Spoke to his wife, and to the messenger, the latter the husband of the lady who was about to be confined. When he went out, he found himself unable to say a single word. The wife was cold, he walked with the husband. Completed the confinement. A somewhat complicated case. Although not instrumental with precision, and walked back the whole distance being about three miles. In the morning he was completely amnestic but was able to write perfectly correctly.
A letter in which he described the peculation and ill-treatment to be followed to his junior partner. There seems to have been no word deafness. He could read easily, what he himself had written, and what anybody else wrote; understood and read the papers well.

Jockedhie that he could think in words.

And he said: All his thinking was carried on through a stream of words, the sounds of which were devoted to conversation.

As far as speech, he had noutterance at first whatsoever, either automatic or recurring. And so far as he remembered, used no thought-expressions during his emotional state, such as a paralytic. He said to Stephen Jackson, who discovered that he had considerable quantities of

There was no paralysis. Motor responses he could produce his tongue, which, and showed no signs of defective articulation, Moscato.

Dr. J. B. J. is now taking charge of an asylum. And seems to have health, passing small quantities of opium. He possesses considerable intellectual power.
No subject presents greater difficulties to study than Aphasia, and the fact of all writers on the subject differing very largely in their treatment leaves clearly that the facts at our disposal are not yet completely susceptible to exact statements. I think that some obscurity has been thrown into the subject by certain authors arguing from a priori diagrams rather than trusting to an interpretation of cases to reveal their meanings. Such especially some German writers.

All authorities agree in placing the seat of outgoing language in Broca's convolutions and the auditory word centre in the superior temporal, at the posterior end. This later is the most important seat of centre in outgoing language. These two centres are connected by connecting fibres which pass close to the posterior part of sensory division of the internal capsule, and through the Island of Reil. Another set of fibres connected with Broca's convolution pass downwards to the internal capsule.
to the region just posterior to the knee, and itsinner side. These pass through, or close to, the
Island of Reil. Another set of fibres pass to
the Motor Centre of the hand; according to
Brodersen they are commissural and pass
in the white matter between the two convolutions.
There are then another set of fibres connecting
it with its corresponding part on the
opposite side, and lastly, a set whose
Course is unknown, which bring the stimuli
from higher intellectual centre or centres to
arouse its action.

This Centre contains: the machinery of
outgoing speech. Different views are
taken of method of action, Coordinating
Guides, or Neuroethetics. It would not
seem profitable to discuss these various
theories, and I shall pass to consider what
I think the view which will best explain
the phenomena of speech Disorders, which
is this: all spoken words have a physical
base in the cells of this convolution: or
as it were, the fibres that proceed
downwards from this centre start from
words or their nervous equivalents—
The stimuli to start these comes from a higher or intellectual centre, just as a writer in the newer American instrument used to classify in the legal profession for copying set the words of tappings certain letters excepting the fact that the analogy cannot be carried too far.

The next question that arises is: how far is this centre used in thought?

I believe that whenever active thought takes place, the words that as it were clotted the thought are due to the activity of this centre. Stated in another way, the activity of this centre is necessary for thinking in words.

At the same time, the auditory word centre is equally necessary. It is the preceding sensory centre. Wherever words are uttered in thought, it alone is able to recognize them, test them, comparing their meaning as remembered words with the meaning they are used to set forth. At present, I shall leave no more on this outer centre, but go on to consider the out-going centre.
The chief reasons which make us think the above method the most correct are:

Thought can be carried out independently of words; as an illustration I may quote the famous case of Jordan, who when Aphasia could arrange the headship's lecture together, and also the zoology, but yet could not remember a single word.

The only explanation that seems to me at all feasible in this case is that the centre for outgoing speech was affected, and words could not be recalled by thought.

Only after recovery from Aphasia the patient have been able to state the state of their mental power. The first case quoted by Trouseau is an example of ordinary Aphasia. Here there was no impairment of the auditory word centre, or the intellectual memory of words when uttered by another, and yet he distinctly stated, when left to himself he could not voluntarily recover a single word. Several such cases could be quoted.

The natural pathway from the intellectual centre is towards the muscular or outgoing centre.
All words that can be used in thought are under ordinary circumstances, such as conversation, are used in loud spoken language.

And it is a well-known fact that when thought is intense, without intention on the part of the individual, it is spoken loudly. Now if the view I have expressed above is correct, the two cases of T. B. Y. and Laura J. Conley are not cases at all of disease of the centre but are due to absence of the connecting fibres between this centre and possibly another centre for the motor articulation process below. They would be treated, perhaps in the whole matter just below the centre. They are cases of aphasia - and according to the article of B. B. they are one of the most typical cases of the situation. In Professor Stewart's diagram it would affect the line from the Will centre to the speech centre. In Professor J. G. M. the line joining the motor centre to the motor processes.
The Case given by Trouseau of a girl who died in the Palphetière. Adele Ausselin was of a pure nature. No lesion Broca's Convulsion was found, but rather the atrophy of the right kidney. She returned to much greater degree the powers of writing and, although her intellect seemed affected, she could reproduce the voluntary thought with a reproduction of words sufficient to write a few words and to find out the mistakes when she first made them. As this Case is somewhat Complicated, in its anatomical and clinical aspects, too much could not be predicated on it.

The most important point is the organisation of tissues in the medulla oblongata of the brain. At the meeting of the British Medical Association, Dr. Arthur Jackson threw out the idea that the development of speech followed the ordinary laws of Evolution, and this idea which is the one adopted by Dr. Ross in his monograph seems to be the one which explains most clearly the fact. Shortly stated it will be the passage from the one to the other organised
Disease will affect it in just the reverse order.
The earliest language of the child has reference to qualities and adjectives, while adverbs are more organized forming
language than nouns, and thus remain so throughout life.
A language acquired later in life will be less organized.
Certain forms of aphasia are due to a partial destruction of this centre. Such cases are inability to say words
in a newly acquired language, and loss of power of naming. Although in each case the name of language is
virtually recognized when spoken by another person.
This constitutes the great difference between lesion of the central or outgoing centre.
Such cases I would group under one head
Partial aphasia affecting only the outgoing centre.
In some cases the destruction is complete,
and the results more profound.
Although the centre is on the left side
primarily, except in exceptional cases where the
patient is right-handed. It seems certain
that the right side is capable of taking on a
considerable share in speech processes when
required. One question that naturally comes
in is: How far is the right side active in an
ordinary way? In ordinary paralysis
Broca's rule. Speech that bilaterally
associated, and more generally organized
movements are stimulated post-bilateral
somal. Either side can do the other work;
probably the same rule applies to speech
and the more automatic and muscular
speech is represented in bilateral acting
together. This is an explanation of what
takes place in ordinary aphasia.
In the latter the patient can not voluntarily
utter words, but still he has some words;
they are such saying a yes and no:
utter under excitement. Sometimes the
patient has, for 4 words which he uses
a numeral where he wants a number:
a noun for a noun, a verb for a verb
and an adjective supporting relation.
not suffering from any other lesion he immediately knew his answer was wrong. Now these are organized on the right side. Recurring utterances, which are so curious are explained by Hughlings Jackson as the last thing spoken. And the first and only thing spoken reorganized probably on the other side. Many curious things are noted in the recovery or partial. And I think they are all to be explained on the theory of new organization of words on the right side such as the tendency to repeat the last word uttered, that of misplacing syllables, substituting labial consonants for liquids, substituting allied words, and otherwise. Misplacing words. Letter authors have quoted numerous cases, given each illustrating one of the above defects. What seems to me to strengthen the opinion I have expressed at the head of my remarks as to thinking in words, being only possible with the activity of the originating centre for words is that in recovering from what is an undoubted lesion.
the process has taken, by exactly the same
as that in the infant, by process of
imitation. These patients have their
auditory word echoes active, and it
would seem that if words are recovered
sounds, the patient himself by bringing
the sounds into his thought voluntarily
would himself reorganize his new oral
sensory centre; but it is exactly the opposite
the patient leaves letters being shown
hourly put together. Words by having
them sounds, and the latter are often
repeated wrongly; these during this stage
aphasia may be produced.
Two other processes are affected by
this lesion, reading, and writing.
Alexia and agaphasia.
All people with very few exceptions
when reading a book or otherwise
mentally repeat the words, or by
a second or they think the words, that
are received into the word seeing centre.
Introduce they become aphasic, they
cannot voluntarily repeat the words.
Here they are unable to understand
What they read, and this is true of most aphasics. Some have attempted an explanation by supposing it necessary for the word seeing centre to have become affected. And although lalleric affected.

Although it is not clear, the chief places are entirely different nearly all accompanied by anemia and that it is quite unnecessary to have recourse to such an explanation when the above simple causes will suffice. The case of Vincent quoted by Powers p. 106 brain broken of a cannon become the result of a blow but destroying both the articulating power as well as the writing element.

Conclusively that this centre contains elements for writing as well as speech, and that it does not seem necessary as is shown by Dr. Ross to postulate another centre in the posterior part of the second convolution. He follows these and gives in support a case of Mr. France with brain 1878-1879 and also a case of Nollekens and others.

But each of these cases explained that the lesion in these cases was that for movements of the hand. In connection
with this subject. Powers makes the following very forcible remarks.

"Other mistakes in written letters are due to a similarity of the muscular (and therefore nervous) action in pronouncing them, as the substitution of G for P and F for C (observed errors) a proof if proof were needed, that the written words are first perceived at the speech centre."

As a rule, the writing defects are more profound than the speech. And the above I shall conclude my remarks on outgoing language centre, merely adding that the explanation is chiefly for ordinary persons. There are some persons who are capable of receiving into their understanding written words directly. Another way be some who have the power of receiving words sounds independently of the outgoing centre. But I believe these are a very small minority.

I shall next pass to consider the other fiction or injury, Audaciously Communicate, Aphasia.
I have previously stated that "active" thought in words is only possible with the outgoing motor centre functionally active. Now I think the alternative proposition is equally true: that all passive thought necessitates the functional integrity of the outgoing centres, auditory, visual, and tactile, chiefly the two former.

I may well think that in making a distinction between active and passive state, I have drawn utterly an artificial one.

A careful consideration of thought processes will show that it is an allowable one when unoccupied and not especially engaged, ideas, associations, noises, etc., often pass through the mind gate and were untroubled effort, and as an illustration of how the two may follow each other.

One may see what every one frequently experiences by when having an important subject on one's mind, and after giving considerable attention we relax our efforts, and are it were as: now during this resting time, ideas start in our mind or associations which give new direction.
or enable us more fully to understand the subject, these connections without effort. Now they are immediately recognized and these constitute the 2nd part in which they are actually thought of. Preceded


2nd part. The words recovered are revised in going impressions. But in the 2nd part, the outgoing centre is brought into activity. Many more illustrations could be given but the above one, will show how I use these two impressions. Passive thought is necessarily memory in its chief part, but above memory it contains facilities which are distinctly belong to the higher parts of intellect. The whole of the disorders of speech which result from lesions on this side of the brain have been placed as true aphasia, or as loss of speech.

With regard to these forms Pasteur says: "That the tendency to cerebral impairment with aphasia and the degree of such impairment will other things being equal, increase according to the size of the left hemisphere which produces aphasia, remote from the third frontal convolution, and approach the occipital lobe"
This proposition stated many years ago in the work on the "Brain as an organ of the mind" has been largely proved true as far as actual lesions.

The auditory word centre is the most important, and its situation is by common consent placed in the inferior temporal convolution of the left side, and chiefly its posterior portion.

At different views are held of the processes that result from a lesion of this part. I shall give a quotation from Dr. Bartley as the head of the authorities who look on this centre, not only as containing the memory, but as also the centre where the words of active thought are carried out.

Page 122: "Analyse Cerebral and Bulbous."

Dr. "Suppose an animal to be suffering from a defective activity of the auditory word centre, colloquial speech cannot be recalled 'voluntarily,' only 'association.' There would be from this cause frequent hesitation and difficulty in the expression of thought, both by speech and writing. But suppose this were defective activity were to be replaced by actual destruction of the
left. Auditory word centre, word. Once there
of course, neither be recalled voluntarily nor
by association; and still further spoken words
could not be perceived, and consequently
could not be imitated. An individual thus
affected would neither be able to speak nor to write,
that is he would be completely Aphasic. Kotthesch
stated peculiarly that he would not readily
comprehend spoken and perhaps written language.
The latter ability might prove to some extent because
the molecular equilibrium of the auditory word
centre, and of the related visual centre of the
opposite hemisphere might not be sufficiently
disturbed to prevent all apprehension of spoken
or written symbols.
This proceeds in accurate language hereafter.
It would accede, if the auditory word
centre had such a dominating influence
as to make speech impossible without its
function to active.
But the other hand supposing the
motor centre. takes an active process
in thought, undertakes guiding influence
of the auditory word centre. Declination
of the latter, B. taking away the usual
and best test of the words thought, and leaving
the intellect to be guided by the much fainter
sense of muscular movements, with cause
serious embarrassment. Speech would
be curtailed and its utterance very
faulty. and patient would to a large
eXtent be unaware of their faults. Still then
would be considerable voluntary utterance
left. More in some cases than others.
and provided only the auditory word centre
was affected reading would to some extent
be retained.
Case of word deafness of an uncomplicated
kind are difficult to find.
But there I can find seems to favour
the view that there is considerable voluntary
utterance left.
The Case of Kusnerowicz quoted by Bigg, Steward.
1854—suffered chiefly from faulty utterance
Paraphasia. Although some Aphasia was
present.
One of the best recorded cases of word
deafness is that of James Lee. 3 Dr. Ross.
p. 36 The only mandate he obeyed
unless accompanied by pantomime.
was put out your tongue. I observed no
sign of being able to appreciate right from
wrong name when uttered, and by other
signs shewed that he was clearly suffering
from word deafness. at any rate that
was the opinion of Dr. Ross whose case he
was. Now this patient had considerable
utterance, and he suffered from another
form of aphasia. In recollection he could
not name about imagination losses
of common things showed him. He suffred
from paraphasia. Calling most things a
public house. for instance being asked
to name a watch key. Initially replied
"is your public house here?" pointing to the
watch pocket. This patient could
understand reading and writing. He
could write himself a good hand. But
his attempts were unintelligible.
The case is full of interest and will merits
a careful study.

Another case quoted by Dr. Ross is Friedrich
vonquist marie almarees aged forty
years. She seemed to be suffering from
complete word deafness. Reck to questions
Addressed to her in writing. She replies after a short pause form consideration either in a lively voice or in writing. At the
autopsy a cancer was found in the left first and two Temporal Convolution.
A third case John describes. The incapacity to express words in spoken language was much greater there in either of the other two cases.
These cases which are the only uncomplicated ones which I have read of. do not at all support the view advocated by Bastian. The completeness of the word deafness precludes the view that the lesion was a partial one.
They seem to have a much better explanation is the fact that the patient with the most outgoing centres intact is unable voluntarily to recall words and the success will depend largely on his powers of substituting the two other sensory centres as guiding centres. Instead of the usual auditory centre.
It would be intellelible to think.
whose power to be guided by the trained or
radiate centre being smaller abs. asemic if
it function a far as utterance goes
a few almost aphasia. At any rate
the speechless could have no control over
an element constitute one of the causes
of that interesting form = siberia.
Aphasia —

Case word deafness are rarely free
from another form of incurring Aphasia.

By the Aphasia of recollection or Verbal
Aphasia. But sometimes the latter occurs alone.
A few cases this has been seen by Ross
in his monograph. He was a man who lead
no word deafness. Blindness, and could
not hear utter sounds. Poor to declare
union of the first frontal. Yet couldn't
recollect names. Could not even count
he had the greatest difficulty in recalling
it. Sometimes failing although knowing to
me perfectly.

Another case is reported by Ross, which
quoted Dr. Ross. The disease was here
subcortical the 2nd and 3rd temporal lateral
convolutions. The patient being quite free.
In one of the recent articles I have mentioned before on partial lesion of the outgoing centre, the same result follows, or would follow a lesion of Dr. Brodbeck naming centre. And frequently a general lesion such as exhaustion, intoxication etc., of the cerebral cortex.

Dr. Rosen in his monograph p 110 attempts an explanation of these on the principle of evolution. Shortly his views are:

Kaming of speech is a special part of speech, and a medullated one accomplishes more than the other parts of language. He believes this both individually and also in the history of language itself. Therefore in lesions of language centres these various parts are the first to go. He accepts the localization of Broca's that says that he thinks it is either a part of the auditory word centre or interrupting some of its connection there causing a partial lesion or in other words, doing away with the special parts of recollection.
Now if this view of Dr. Froux is correct, the lesion which causes loss of names may be situated in another part or even in the auditory word centre itself if it is partial enough. And then an explanation of Dr. Broadbent case which occupied the supra-marginal and angular gyri to offer. There would interfere considerably with the passage upwards and downwards from the centre to the lower nuclei in the medulla. Indeed he rejects future, Dr. Broadbent view of special naming centres.

Another view of such defects seems to see an intelligence centre or centres. Professor Stewart in his lectures, p. 185 says it is more common for us to find the higher centres—the intelligence centres—afflicted. When it is involved, the patient fails to understand any kind of language; words written or spoken are alike meaningless to him. Although he represents it by a separate circle, believing that it must be performed by some other portion of the brain than that which is trained to synthesize letters.
...sounds into words. This manifests difficult-to-bring-forward evidence from clinical experience of affection of the function which might not be explained on the hypothesis of a general affection of the lower circles. But there is no difficulty in producing evidence that the word centre may be spared and an active centre, while the speech intelligence centre is affected and one of face.

The meaning of the last sentence I take to be: that although the word-hearing and word-seeing centres are intact, an intelligence centre for words may be involved. I believe it to be such a centre speech, and that it is multiple and that it has practically, proven out of the ordinary centres.

These latter occupy the convolutions bordering on the posterior limb of the fissure of Sylvius. As the function of language extended and more brain substance used so with this use, sensory centres surround the old ones in the neighbourhood of the Sylvian fissure.
Sixth Centre would extend into the lower part to the 2nd Temporo-Occipital, and third. So in the upper portions the occipital would be involved, and the upper and posterior parts of the parietal and the anterior gyrus — the upper portion involving in the highest sensory centres. Mids bilaterally, and perhaps still Akensio found ~ Tibet Mind deafness. Prevaling from their being inactive. The seat of intellectual activity has not been localized. Some suppose the posterior lobe and others. Part of the occipital lobe and perhaps the best correct referring Intellectual activity to a complete interaction between all the brain centres.

In the diagram I have represented the position of the word centres for sight and hearing back and the higher centres red.
The first case I quote, the lesion of which first space, I think, of the history involved, the word being centred, subordinated. I believe into the higher centres. I shall undertake this, where I come to speak of the cases in detail.

Dr. Broadbent speaks of a form of aphasia in which he says that there is a lesion of a repositioning centre. In which the patient is unable, alone and fails to express the relations of things. He furthermore says that if there is a centre of language, the repositioning centre is hence. (See. p. 95. Monograph.)

Dr. Ross explains this form equally on the view of Binocular. And these how closely such a condition resemble Chinese. He gives the following letter of such a case:

"Dear 10 years 3 days. Say goodbye, Horatio. pulled back to Manchester last month. 4 weeks to good-harbour, and on letter and now near done. only my health little longer, and see my legs and throat, and four weeks had cleaning. Send your warm toast." (p. 95. Monograph.)
The form of this note and speech represents a large interference with the intellectual construction of language. Hence it has, although not the power of words, at the same time capable of thinking and correctly putting Experience he had gone through. And the careful construction of the letter seems to point to the fact that he had. The letter which he doubtless had was one of language and I cannot conceive that one gives the visual or auditory word centres. Could give rise to such a peculiar construction; but rather on a higher language centre were connected with integral forms of utterance than mere words or sentences.

The form of speech defect named word blends can not be closely defined. The patient is unable to read or understand either printed or written language. Although, as far as other language relationships are concerned, they are cut off. Some patients better power they proceed
I reviving language, because of tact or memory, are enabled by a process of writing the letter over again to rescript the word and alike sense.

Two classes of this kind are recorded one in which the patient can name and feel together letters, but is unable to spell the word. The second is the form in which the patient is altogether unable to recognize the letters. A third form is that in which the botany are affected. I am not aware of any localizing values attached to these distinctions.

All authorities agree as to the position of the lesion in the forms by the angular gyrus on the left side. A frequent accompaniment is bilateral in sensori-sensory aphasia of the right side.

A very instructive case is recorded by \( \text{Dr. Symm. in the British Medical Journal.} \)

The patient had fallen and bent fractured his skull in the occipital region. After which he became word blind, but also...
Minds blinded. Dr. Gowers said in his remarks that the lesion was possible located entirely in the occipital lobe, but probably there was involvement of a part of the angular gyrus. All the author at all the beginning gave cases of word blunders. Helpful is the most interesting is that of the case of Lecture VI., p. 130. New Sydenham Soc. The brain. Combined with his lecture on amnesia of visual forms. Cases of mixed forms are decidedly difficult to analyze. In many of the cases there is obviously a large mixture of interference with the intellectual factors proper. There are two cases presently Dr. Ross. They are both difficult to comprehend. Some cases of German aphasia where the patient utters nothing but meaningless talk in with considerable slurred. Cato be explained by a double lesion.

I shall leave the injurious process and pass on to say something about commissural aphasia.
The above are two diagrams of Lichtheim's theory. They were copied from 'Landois and Sterling: Physiology.'

From Professor Stewart's lecture on aphasia.
I have copied these diagrams to illustrate the different forms of commissural aphasia.

The hypothesis most interesting is the one that unites the outgoing centre with the auditory word centre. This would probably be through the island of Reil so that a lesion here would cause speech defect in one way or another. Cutting through these fibres would cause speech defect in one way or another.

As Riechan was one of the first to indicate ascending these fibres, I reproduce his diagram and also steal give quotations from him below his views. Essays, p. 122, "Anatomy. Paralysis Cerebral Special Shells." "From what has been said above it seems to follow in the plainest way, that ordinary..."
Typical Aphasia might also result from
Destructive disease situated anywhere between
the auditory word centre, and the kinesthetic
word centre in the third frontal convolution
(Gratia) from any lesion which destroys the
commisural chancels between these
two centres, in any part of their course.

Racter has laid down carefully what he
mean by this term. He says p. 118, "did
In Aphasia the patient commonly articulates
some one or two sounds or actual words quite
distinctly, but his vocabulary is limited to
these. There is no in distinct utterance; rather an
inability to attempt to utter any proposition, and
the indiscriminate use of some one or two words
or mere sounds, on occasions. The Aphasic
patient cannot repeat a single word after you
And generally cannot repeat when bidden to do
even one of the words which he is frequently
mawking of. He understands everything
that is said to him." Page 192. Wood says
"Gratia, about the same time that I dwell
upon the above mentioned idea (18th century). Called
Special attention to a fact which had not
previously attracted much attention. By the
Unfrequented Association of Aphasia with
corresponding disturbance of facial expression (num- 
anesthesia) on the right side of the body."

"A reference to Fig. 55 (which is Flechsig's each)
will show that the posterior part of the hinder
segments of the internal capsule is far
removed from the region of Broca and the
contiguous portion of the Insula. Although
it must be very close to the posterior part of the
Commissural fibres connecting the upper
temporal gyrus with Broca's region.

Again the island of Reil lies in the direct
tract which must almost certainly be
taken of such commissural fibres. But
since 1868, when Meynert originally advanced
the notion, and supported it by cases that
ablation in the Island of Reil might produce
atypical Aphasia Condition, other cases of
the same kind have been published, and
there have been analysed by Roger (Etude
topographique, Paris, 1879 No 115) There are now over thirty such
cases on record, so that there can be no doubt
as to the correctness of Meynert's position."

91
Curit would agree according to Baxtian that the form of disorder will be, more or less, an ordinary Aphasia, together with possibly some mental impairment. In a table published by Rosch in the same paper, I abstract the symptoms according to him... (Proceedings, 92).

Vocalional speech becomes paraphasia.
Vocalional writing becomes paraphasia.
Reading aloud: Paraphasia.
Repetition of words: Paraphasia.
Writing to dictation: Paraphasia.
Understanding of spoken words: Retained.
Written words: Retained.

Faculty of copying: Retained.

I shall insert here what Dr. Rosch says: "The third type now remain for consideration. In the example which Lichtheim gives the patient on being asked: What two things for supper answered. Bread, meal, potatoes, with only two mistakes on being asked to relate his history, he string together numerous words of which only one now and then could be ascertained such as: Solving, fire, and security and... The patient could understand..."
Spoken and written language, and could also repeat correctly short words uttered in her hearing, but in the repetition of words generally and in loud reading he committed the same kind of mistake as in voluntary speech. The lesion was in the region of the posterior trunk of the Sylvian artery.

Furtheron to Ross, says, "It will suffice at present to say that Liebmein's third type corresponds with the disorders of speech which Dr. Broadbent has named inability to express the relations between things, and which he believes to be caused by disease of the assumed proportioning centres." We will also consider the Commissural Aphasia.

With regard to lesion of the island of Reil

Causing Aphasia

Gowers, Brain diseases, p. 105 says, whether the island of Reil forms part of the Speech Centre is still uncertain, speech defect from disease limited to this nucleus yet been observed, but its position between the motor and auditory centres, and the way in which fibres between the two pass by it leave
lea lernecke and others to regard it as part of the speech center region.

All the cases adduced as proof of the dependence of aphasia on disease of the island of Rep is inconclusive, either because the lesion was not limited to it, or because the duration of the case was too short to permit indirect symptoms to fade away.

The statements above abstract from those authorities on the subject differ very widely as to what would result from a lesion limited to the commissural fibers.

The fact of the auditory center being involved with patience will not suffer from word deafness.

The repetition of a word that is not understood reduces a word in a foreign language to be an impossible word. The patient would not miss the quiescence which it usually receives from the auditory word centre, the auditory word centre being heard in the corresponding auditory word centre. Under these circumstances...
A state of paraphasia would result in which the patient would frequently misuse words. The patient would still have the desire for motor movements to guide him, but accustomed to auditory centers to guide him. This would often fail. The misplacement would not be so great in some cases of word-finding difficulties.

The view of Ractan is the one which follows from the opinion which he holds as to the auditory word centre being the chief factor in the speech mechanism. According to him, such a lesion would cause symptoms not possible to remove clinically, from ataxia. If treatment were taken an alternative a lesion in the region nearby supporting Ractan's view. But rather his view that, molecular speech is possible, but without the guidance of a sensory centre. Misplacements of words are apt to take place.

I can agree with Dr. Ross when he places the case of what Broadbent calls...
accurate perception of the relationship between things to the cause as Nietzsche and believe cases which illustrate the peculiarity described by Breuer and result from a higher centre, one which is more intimately connected with intelligence and language arrangement.

Dr. Hartig, p. 126, gives a case by Dr. Strumpf in which the fibres from the voice auditory, auditory to Broadbent in which auditory sensory fibres were affected. It supports the doctrine of the connecting fibres between the auditory and visual centres as of two kinds one, which passes from the auditory to the visual (audito-visual) and one which passes from the visual to the auditory (neo-auditory). One test of writing from dictation, the other, reading aloud or naming from sight. Of the other commissural fibres there are theoretical grounds for suspecting their existence but that only cases which throw any light on the clinical symptoms to which result from their interference.
In making the remarks on aphasia, I have noticed only those points which seem to me of interest, and have not intended to write an account. I have said little or nothing of agraphia. The only case that I have read of agraphia occurring independently of speech defect was that of Pitres—"Considérations sur l'aphanie après d'une obstruante ou sur une dysphasie motrice pure.  Genève: de l'Université 1884-1885—"

Many points seem still obscure in aphasia, and unfamiliar information is required, especially about the relationships of word blindness to mind blindness, and word deafness to mind deafness.

Before leaving the subject I propose to make a few remarks on each of the cases I have related.
Case I was one of very great interest apart from the Aglosia. There were symptoms which strongly pointed to the symptom called by Munk Psychical Blindness. The history of this case pointed to a sudden lesion in the middle cerebral, resulting in permanent damage to the region supplied by the frontal branch. The remaining part of the lesion arising from Brodmann.

Figure I

Shade indicates the position of the lesion by hatched lines. The parts of the diagram being copied from Baxtel's work. The lesion extended upwards to the frontal, and part of the second occipital lobe on the left side.

Spores of the occipital lobes have been said to take place without giving rise to any appreciable signs.
But recently, definite functions have been assigned to this part of the cerebrum. and special parts have been used in lesions of which cause very remarkable symptoms. Taking from Sneurzy's lecture of November 7th, 1888, LANCE— he says:—

There can be no doubt that the centres for colour, form, and light. These are all present in the occipital lobes, and posterior end of the occipito-temporal convolutions, and it is probable that they are situated as Hulse and Defries supposed, arranged in larger ones over the other in the centre or another think. They are placed side by side.

According to which a patient might suffer from achromatopsia without any interference with sight in the ordinary sense. Further, he says:—

"A very remarkable visual defect is that known as binocular blindness, a form of visual impairment, involving blindness, uneasiness, of what has long been known as the mind's eye. Sights in the ordinary sense of the word—the reception of the retinal images by the visual centre—is unimpaired, but the physiological realization of the stimuli
Image is not affected. The objects are seen
although right of them suggests no corresponding
idea in the mind of the patient.
This clonic symptom seems to be divided
into three divisions. The
one where the patient is unable to
comprehend any form of an object
except that if mere difference of shade;
the other in which the patient able
to make out the form but it's alike,
no significance in the mental operation.
A third will be where the patient appreciate
perfectly the meaning of forms where
seen but is unable to retain them in his
memory where away from these. So that
where he recites a poem if he may
have known perfectly well, like his native
tongue. He seems to him to be quite new and
the impression are renewed each time only
to the somnolent.

The case reported by Charcot. Lecture VIII
Vol III Lectures of Kewley Sociey.
Translation of sudden loss of mental
vision objects and objects. Clear asplesand
example of the cast form.
I believe my case represented a milder form of this affection. At the time I took it up, I had not a sufficient knowledge of such a symptom otherwise I should have taken pains to test it as far as possible. But the fact is, I took them seriously there was a difficulty in determining the case itself. Moreover, there was a profound interference with intuizione, hence some manifestation seemed to contradict the fact, and there was a great deal of the intellectual faculty was retained.

With regard to the localization of the symptom, I remember saying in my book, "The structure that restrains the function of

minds blindness are certainly separate from those of the half vision centres, since they are not

from because of the cortex does not necessarily involve this special loss. The centres concerned are probably in front of the half vision region, either in the anterior part of the occipital lobes or the

front division of the parietal lobes the latter is more probable."
Figs. XII

Figure of Roland

Position of lesion in left hemisphere (anterior
symphysis) which caused complete numbness during
the short time the patient lived (Chambers 1901 p. 40)
from Sowers p 30

The above diagram have abstracted from
Sowers and the parts involved were similar
but the was never limited to my case in which
the lesion extended upward to almost the middle
line.

Further observation care required as to whether
the special part of the side such as
Speech or whether. This usually necessary
for both sides to be affected

the case of P. Moore, omiliary to the occipital
region with this symptom previously quoted
factors to localization within part. Here,
no perturbation took place and the exact
amount of damage was not ascertained.
It would be impossible to fit the angular
synechon not involved.
One peculiarity of the case was that not until blindness seemed to come on in any case after the ordinary word-blindness was present for some time.

Word-blindness is only partial word-blindness which becomes deeper.

The patient also became deaf afterword.

If at any rate deafness came to comprehend what was said to him, the temporal lobes were accustomed to be quite healthy.

Hence before stated that thinks there is an intelligence language centre which has arisen out of the ordinary sense centres.

If such sense does exist apart would be involved in this case, which with the fact of deafness being only young auditory, education and partial would make him lose all language relationship and thus a condition allied toward deafness would result.

The Ataxia coming in and did with the other more advanced cases, such as blind-blindness, and loss of language.
point to the fact that it may be in some way connected with them, and would be due to the want of the visual perceptions which would in his case be necessary to proper coordination of movements.

Case III was a case directly opposite to that of the left inferior frontal convolution. It illustrates well what has been said that the process of naming is a higher development or a more special part of language than qualities. Although his face looked fairly intelligent and when compared with other children of the age there were remarkable differences, his actual ability of similar scores would be measured by the reason of this. In the inability to use many words in thoughts and the converse being very much better. If pictures were correct it might appear that without word-defining ability to process new knowledge there would be a lesson of the underlying centre.
The method of treatment consisted in trying to make her form her letters from practice of the lips. But this was unsatisfactory, carried out owing to the patient living at some distance.

The case of Laura Jacque, Dr. J. B. S., may be placed on the same footing. In both cases I have given reasons for thinking that lesion was not of the mouth but of itself backwards, interfering the passage downwards.

In fact the case were true of aphasia.

I copy the definition from Rautenfels, p. 118: "In aphasia the patient knows quite well what he wants to say. There is no tendency to use words that he does not wish to employ. Nor, consequently, to say what he does not mean to say; he has simply a difficulty, moreover marked in the articulation of words. If he is not paralyzed on the right side the power of expressing his thoughts writing remains imperfect as it ever was.

In connection with this a case of Dr. Bistrow's published in his volume on Neurotomics, p. 93. of great interest
A paralysis owing to congestion which might have been a sudden haemorrhage or softening in the pontine region became paralyzed. Irregularly, on both sides of the body, together with loss of speech, where recovery took place. He was completely unable to utter anything.

To Buretow says at the first visit: "I found that he was perfectly intelligent. He understood everything that was said to him, that he could read well and comprehend anything that he read and that he could maintain a conversation for any length. He wrote as a state and his interlocutor speaking." Further, he says: "Having spoken to him casually from time to time during my periodical hospital visits, I had come to the conclusion, judging from the fact of his intelligence, of his perfect ability to understand spoken and written language and to write, and of his complete voluntary power over the organs of articulation, that his inability to speak was most probably due to his having forgotten how to combine automatically the movements of these organs.
So to obtain from them the elementary sounds which in combination constitute articulate speech, and she determined to make the attempt to teach him.

This was done successfully in a way which is graphically described by Bristowe.

To J. B. Y quickly recovered his speech. Laura recovered in a way, and before I had an opportunity of reading to Bristowe, work, but it seems quite possible a similar method might have been successfully employed in her case.

Case VIII is a very interesting one. As shearing some speech defect is apt to follow measles, I believe it was similar to the case reported by Bristowe and the explanation he offers of this case is equally applicable to this one as his rapid recovery shows.

Cases XX and XXII are peculiar and are evidently situated away from the ordinary centre.
Attitude

I think that perhaps in both cases there
must be an interference with the passage
of the intellectual centre to the outgoing
word centre, or rather from the passage
of the seat of ideas and thoughts processes to
the outgoing centre. Large interference
must not be profound, and that the
first and attempts at altering recent
events may be explained by fresh mental
taking place in these ideas and recently
thoughts of. In questioning Dr. Turner as
Tolto Condill's since I wrote the account
given, I find that there still
an innate and that her skeletal powers
have undergone some improvement, but
when lived she was misused and used,
to return to the same de...
Case XXX

A case of Tumour in the left side, involving both panels, parietal, occipital, and top of angular gyrus. A second one involving the whole of the right temporo-occipital lobe.


Complaining of loss of power of right side. Diplopia and vomiting. Antecedents had extended over weeks.

4 weeks before admission she had a fit.

Her history presented nothing unusual except some attacks more severe neurotic in nature; once stump, at another time numbness, and headache.

Bowels always relaxed. Cataracts normal.

Sensory changes commenced with numbness of right arm, headache, vomiting. 1 week ago put the medicine of Dr. Meagher who says the skin of right arm was blue, albumo-vascular, numb and cold to the touch

She was unable to move it.

The muscles responded to Faradism.

Temp: normal. The headache confined to the right side for two days. After this found evidence diminished. Dipsasia paralytic in the right side. Although when she laughed they both acted.
14 days later had further right with aphasia—She also took a considerable amount of flesh during the last three weeks.

**Present Condition**

She had headache which she said came and persisted accompanied by vomiting. No marked sexual.

She had slight paralysis of the left external rectus, and the right arm was almost completely paralyzed, although a slight amount of power retained. The sensibility only, slightly impaired in this arm.

Paralysis of the left leg with diminution of sensibility.

Right facial paralysis on the right side, but orbicularis, completed, free.

All other sensibilities normal there.

Smell hearing Except the eyes and she had well marked double optic nerves.

Organic reflexes normal, and the patellar reflex somewhat increased on the right side. She remained in the hospital until her death about four months.

The paralysis became complete on the right arm and leg. With loss of sensibility.
And she gradually lost intelligence. About a month before she died, the left side of the face became completely paralyzed. This lasted for a fortnight and then completely disappeared. Reconvulsion preceded the coma which preceded death.

At the beginning, a large degenerated mass on the left side occupying almost all the hemisphere on the surface of the left side from the fissure of Rolando backwards to nearly the extremity of the occipital convolution downwards to the gyrus fissure, and further back the parallel fissure.

On the right side there was another degenerated mass occupying the greater part of the temporal spherical lobe. In each mass several hemorrhages occurred. In each place the mass extended in toward the white matter.

The cerebellum and the cerebrum were quite healthy, and also the cerebellum.
Microscopical examination showed blood corpuscles, granular bodies and debris. The opinion was clear. The grooves were sarcornalin in which true cells had given away.

The most peculiar feature about the case was the few localising symptoms together with the extent of the face covered by the lesion. None of those who watched the case were at all prepared for the disclosure of the

The opinion which we thought most probable included to carcinoma under the case showed in the inferior was that to

a feature probably in the area. Perhaps was the lateral hemisphere of the cerebellum which interfered with the pyramidal tract. and also to a slight extent with cutaneous

sensibility in the paralysed. This we supposed would take forward as far as possible to involve the facial above the crossing.

The slight but definite loss of sensibility preceded a lesion limited to the cortex in the motor region.

Had it involved the internal capsule, the facial paralysis would have been
probably as complete as the arm and leg. and the loss of sensibility complete at the same vertex of these would account for paralysis of the left.

Dr. Pass in his medico says: "Now it is important that as Physiologists we should be able to interpret away phenomena of inverted action of the nervous centres our patients may present, and treat as physicians we should pay attention to every feature of a case which may enable us to understand it better, but I don't see why we should impose upon ourselves a task which we are no way called to perform, that of attempting during life the practice of all or even most of the customs of the brain that come under our notice, and still less why we should feel disappointed at the failure that seems to be the inevitable result."

This statement representing as it does the matured experience of Dr. Pass, success to the fully justified of the case I have given.
Case. XIV

Tumors of the fourth ventricle

with complete atrophy of both sides

various eye-symptoms. paresis sudden death.

Emma Littlewood, a housewife, living at

Wood Green, Huddersfield, born on July 30

1864. Complained of sickness without

headache until inability to walk. She had

lived there all her life. She had been on and off here and

there. She was under the influence of various

eye-symptoms: Chronicitis, paralysis of

right external rectus. And finally, complete

optic atrophy due to syphilis, which she

had contracted when young.

Her previous history otherwise was unimportant.

She was pale, and enervated, and seemed very sensitive to touch. Although they were

most on the right side, her headache was

situated most on the back.

Her pupils were dilated, and she could see
There was complete atrophy, fulness, and patches of choroiditis. In special paralysis of the eye muscles. The head presented no abnormality of bottle, and declared that although she tried she could not walk. The tactility sense was normal. There were signs of the general hyperesthesia. The body was achia paralysis facial or appendicular. The pupils were highly dilated, the skin disclosed numerous patches. The body was otherwise normal. Under treatment he seemed to improve slightly, especially in power.

At the end of four months, she suddenly became comatose, and died in the space of an hour or so.

There were allowed after mortem. She had no friends and lodged in the house of a gentleman. People practically kept her.

P.M. disclosed a commune mass compressing blocking up the fourth ventricle. It seemed to arise from the poster-inferior corner of the fourth ventricle, magna, and pushed it way up beneath the cerebellum. The cerebellum at the fornt.
were involved in the area, which altogether was of an egg alittle smaller than a thumb. The floor being compressed to receive it. The mass was composed chiefly of cells. And was probably epithelium. It was helped in the procedure to Mr. Malden underneath care she afterwards was.

Fig. XIII

See above diagram modified from owrs. Shows the position of the tumour roughly indicated in red ink.

The diagnosis of tumour of the fourth ventricle must always be one of difficulty, or even impossibility. Bristow because of the nervous system gives a case p. 299 of tumour of the valle of Viucerus, involving cerebellum and corpora
The eye symptoms increase worse as though from the right eye. The left side is affected. The patient was unable to move the left side of the body, and the symptoms were due to the loss of power in the left side. Another patient was affected with weakness of the left side of the body, and the symptoms were due to the loss of power in the left side. The legs were affected, and the symptoms were due to the loss of power in the legs.
Case XV

24. A child admitted at Huddersfield Infirmary under the care of Mr. Robinson suffering from ophthalmia and disease of the heart and cells.

The child had suffered from ophthalmia years previously and dated its ear disease from that time.

The case was operated on by Mr. Robinson and a large exostum removed, and free drainage established.

All went well for some time when the temperature went to 104°.

Kept up for some days, when about five o'clock one afternoon the child moaned and cried with pain in the head, on the next day a convulsion followed by several. These were watched by Mr. Harrison (the resident in the infirmary) and myself.

He first drew down the corner of his mouth on the right side. He then moved violently, the muscles at the angle of the mouth on the right side gradually the muscles of the whole face became convulsed, and finally the whole body. The fits always started at the
Right angle of the mouth.

The legs were strongly turned to the right side. He became comatose and died the next day.

The post-mortem was made the following day by Dr. Harrissone.

A small abscess about the size of a wallnut rather flatter, was found just ascending principal, opposite the third, and slightly second principal convolution.

The main notes of the case I have not got, but only some I took at the post-mortem and the leading characteristics of the convulsions.

Fig XIV

[Diagram of brain]

I don't remember it.

The above which is a rough diagram of the brain represents the principal convolution perhaps a little lowered than shown drawn it.
Case XVI  a case of abscess in the frontal
lobe.

It is a worker in a mill, came up to the infirmary towards the end of December 1885 with a piece of steel in the right eye, which had penetrated deeper.

The eye was cured by Mr. Robinson after the operation suppurative took place in the orbital cavity, owing to the decomposition from the steel, which was retained beneath a sponge dressing. An incision into the tissues gave over to a considerable quantity of matter. And for a fortnight he did very well. On Dec. 22nd he had a convulsion followed by a temperature of 104° and a considerable amount of headache.

The latter continuing with a certain remission symptoms for a few days. Some hope was entertained of his recovery. And the next day before he died he said he felt as good as better.

He died quite suddenly about 3 o'clock. His wife noticing some change asked me to come upstairs. but he was dead when I came into the ward.
abdomen made by Mr. Macleod.

(Ammonia of the pulmonary, or as the Huddersfield Infirmary) and disclosed a large abscess in the posterior lobe.

Case XV. an abscess, temporal, sphenoidal lobe, coming on a part of the afternoons of polyphus.

She had a Convulsion just on admission to the Infirmary, after which her breathing ceased. Artificial respiration was kept up for about three hours and atrofex injected but she died about 3 hours after admission. A large abscess was found in the temporal sphenoidal lobe. together with floridening of the auricle, and caries the roof of the Symphonum.

The last two cases I have put down from memory. In the last case I made the post mortem myself.

These are two cases of great interest which I watched during my residence in Alton. Unfortunately I could not obtain post mortem reports, we could get little to allow deducing although they indications seemed so definite.
Case XVII

Mrs. El. Carter aged 56. a labourer's wife fell down stairs a week before labour but having recovered partially, did not seek for a medical man. and saw her on the 5th day, vomiting, and headache had set in. And she was extremely restless. Temperature 102, pulse 80. On examining the scalp a bruise was situated almost in the middle line - and taking the measurement from the occiput protuberance to the centre of the orbits, it lay about an inch behind. Extended to 2½ inches, the length being 1½ inches. There was considerable tension of the pulse and bounding glaucans. Joints reacted to touch and accomodation. Asymptomatic motor, sensory.

9th day. Sickness less, headache still severe. No spicc reactivity. No retors until 1029. Citrate.

10th. Increased restlessness, no sickness
Temperature normal.

16th. Improvement, pain in head better and fairly intelligent.

22nd. Vomiting returned.
24th day. She slept the whole 24 hours.

25th

26th days Somnolent. Bowels which before had been rather constipated became loose.

27th day. She became more somnolent and restless. Passed under her to talk to her several times like a person suffering from dementia. At first, no paralysis could be made out: sensory or motor.

30th day. She had complete paralysis of both legs. Unable to move arms although could move and flex the arms freely.

A referee could ascertain this was unaccompanied by dyspnoea or faintness.

33rd day. She died very suddenly, almost without any warning.

Conceivably no post mortem. Temperature abnormally after the commencement.

I took the notes of this case in a similar way to those of Mr. Hulsewasser in the case of the gross intestinal obstruction in his recently published Archives of Surgery.
There cases are chiefly of interest especially the first and last from the point of view of localisation:

In the first case the neck of the injury corresponded more or less with the situation of the top of the ascending parietal and the posteroparietal lobulations.

The presence of complete paralysis of the arm, knee, face in a case corroborating the localisation by Forees who places the motor centre just below the stem of the ascending parietal, and Pasteur also the ascending frontal and the postoparietal.

The indications for trepanning seemed so clear that I refused very much it wasn't allowed.

The absence of a patient, not the case perhaps of some interest.

In the first case, illustrates the result of an irritative lesion in the motor centre for the face.

The third case illustrates a peculiar paralysis of the respiratory function which has occasionally been reported.

I now pass on to give three cases of what I think were peripheral neuritis.
Three Cases of (probably) Multiple Leiomyosarcoma.

Case XIX

A case of paralysis of both legs and also sprue with alopecia and multiple fibromata.

A. B. aged 30 living at Newton Common in the neighbourhood of London, with a strongly alcoholic history, was seen first on January 1st 1889.

The illness has continued more or less down to the present time, when he is almost recovered, with only some weakness in the ankles.

When seen first at this date, he complained chiefly of severe pain in the right leg, also in the left, but to a less degree, and the pain shot down the leg.

On examining the loins nothing could be found except to extreme tenderness. He could bend his leg slightly, and seemed able to turn over in bed.

There was not any wasting of the legs, and the areas were quite free.

Appearance could judge there was no loosening or loosening, but considerable hyperaesthetic over the loins, and ulcers.
part of the thighs, and the hips. He exhibited some symptoms of mental excitement but otherwise there was nothing in the cardiac respiratory, and genito-urinary system. His temperature was normal. on the 14th of January, the loss of power had become evident in the legs. When asked he could scarcely move them. The loss of power also extended to the right arm.

There was considerable pain in both legs extending down the length. There seemed distinct loss of sensation in both legs below the knees. The tendon reflexes were quite absent. Plantar reflex could be obtained.

He still complained very strongly of the pain in his right loin. There was no facial or ocular paralysis. His mental symptoms were also very prominent. Unfortunately, during the difficulties of convergence to no electrical examination could be made.
at this time owing to the delay in, and
which the pain in the right loin was
complained of, an exploratory incision was
suggested but not pressed.
Without giving a detailed account of
his progress, I may say, during the
next three or four months, the only
change in the symptoms was the extreme
wasting of the limbs that took place.
The fever continued about the same
and he seemed quite unable to lift himself
or even bend it at the knee. Anaesthia
and palsy became a little more marked.
both in the legs and arms. The movement
in both the latter being very limited.
About May or the early part of June
there occurred what at first seemed
to throw a great light on the symptoms.
**Numerous hard fibrous, scarie
fibrous tumours**. These felt at first
like sarcomatous growths. From these
one each arm, and one in the right
loin. It was supposed the case was
one of multiple sarcomata, the symptoms
corresponding to those mentioned. 

Further examination and the growth of new, pedunculated ones, seemed to show that they were of the nature of fibromata.

In September, having not seen him for some time, I was sent for at the Jaffers, who said he was drooping.

There certainly seemed a great change in the size of the lower limbs, and also the face; but careful examination showed the increase to be chiefly in the calves and thighs; which were very much firmer. He had recovered flexibility, and considerable amount of power being able to lift his leg somewhat, and also his head. The increasing power in the leg also returned to the arms, and the wasted flesh seemed to have become round and fairly plump. He got out of bed with help.

About January, he came into Austin Grill a distance of five o'clocks, but unfortunately unbehind strongly.
with the result that the paralysed, pain, anaesthesia cleared leaving him up again until Feb 26th. He was set up again, and his improved condition with the help of a stick he walked moderately well. The London reply had been returned when last examined, and after a long stay walking the ankles swell.

Case XX

Mary Jane Black. Admitted into the Huddersfield Infirmary Nov 18th 1885 under Dr. Cameron care with almost Complete paralys of all four limbs. She had been ill about 9 months. And gave the following history.

At first she had an intermittent rash over the face, and arms and was thought to be the outbreak of a malarial attack of erysipelas. Not improving she came into the infirmary, but owing to the clearing up which takes place yearly she did not stay. She was then beginning to have some swelling of the joints, and other parts of the leg. After being lanced for sometimes
She was not able to walk on one leg, then the other, and also the arms, and was again readmitted. She stayed in the hospital about four months, when a large subcutaneous abscess developed. She went out and died in about a fortnight from Septicemia. In our examination we made out the following facts:

She had no disease of lungs, heart, except a trace of pericarditis, abdominal fluids, urinary system, and feel. The face, hands, and arms were swollen and felt slightly on pressure. worst in some parts than others. In some places the swelling was elastic as if confined more less to the tissues than in the interfaces. There were large nabothes alternating with white on the face, and at places the skin became thick to feel.

The skin on the arms was red, and erythematous especially on the exterior surfaces. It was here also brassy to touch in places. Both legs were edematous, and the knees dis tended with fluid.
Sensibility to touch was normal, but she seemed to suffer considerable pain in all her limbs, but especially the left leg. No hyperaesthesia.

When asked to raise the leg, lift his knees slightly, also rotate the whole leg outwards. Very slight movement, alike flexion and extension at the ankle joint, together some movement, chiefly flexion of the toes.

The backward movement of the upper extremities there was no movement at the shoulder joint, some at the elbow and she was able to perform these very feebly.

She could pronate and supinate.

Electrosensory reaction. The muscles of the forearm, and the calf of the leg responded to a very strong current of Faradism.

The extensors. Shewing less results than the flexors. The reaction of degeneration would be lost facility.

Seudow Reflex, patellar and corac were quite absent. And there was not the slightest response to tapping the muscles.

Opposite the 2nd and 3rd lumbar spine.
there was a very slight and somewhat painful bulging.

Rwatar reflex, and other skin reflexes could be got very slightly.

She swelled quite well, and had no Recto-bladder. difficulties, neither
Infracal or the volar muscles gave any indication of paresis or paralysis.

Sheight was good, unemitted, and also hearing and the sense of taste and smell.

At first some improvement took place.

She was able to sit up at the bed-edge, and the movements of the arms and legs became much free.

About a fortnight before she went out a large

brawny swelling took place in the Right

Sclero-rectal fossa and a large abscess developed. She went home at her own

request.

A Norweinger was made, and the

Cord and Brain were removed and examined. He discovered little of

importance as far as he could see

in the Norweinger. In any part.

Dr. Cameron sent the cord to London Medical
Friend. The examination gave negative results. I believe.

Unfortunately, it never occurred to me to examine any of the nerves for examination.

Before saying anything about this case, I shall briefly describe the third case.

Case XXI

Mrs. Butterworth, aged about 47, a chaussonnaise, became attacked on Friday, April 7, with severe pain in the leg, extending to the arms, which I saw on Monday, Feb. 10th, 1882. She was imperfectly paralyzed, in all four limbs.

The face was red and somewhat puffy. The right forearm and hand were swollen up, and very puffy, pitting extensively on pressure. The right leg was swollen slightly, but the calf was more so than the remainder.

The left leg was swollen very slightly, but the left arm was not at all.

She complained of great pain in all four limbs, but especially in the right calf, which she would not allow to be touched.
The tactile sensitivity was considerable, less on the right side than the left and was certainly not quite normal on the left side.

In the right forearm it might be said to be absent.

When asked to move the left leg she seemed unable to do more than bend the knees and slightly flex at the ankle joint.

She could flex a little more at the right knee joint but would not move the foot at all or the toes owing to the extreme pain.

The movements of the left arm although more or less limited were freer than any other limb. The right arm could at all events she refused to attempt movement owing to extreme pain.

Which she experienced the shoulder being very painful whenever any attempt was made. To move it.

Besides the right calf, the right shoulder was extremely sensitive to touch as far as pain was concerned. Although a feather was not felt.
Leukodrapes were present, and seemed exaggerated on the left side.
Plantar reflexes could be identified but slightly westerup.
No sensory, ocular, or cutaneous, and the special senses were normal.

Notice of temperature, and the other systems normal.

Urinalysis free from albumin and leukocytes.

She gradually regained the use of the limbs, but the swelling of the forearm and arm remained for sometime.

Two months after the commencement, she seemed to have completely recovered.

Remarks. The study of peripheral neuritis is still in its infancy.

The tendency at present is perhaps to attribute to it more than its future will be able to be due to a simple lesion of the nerves.

But it obviously explains many forms of paralysis the true cause of which seemed obscure or indiscernible.

Perhaps the best known form is...
most clearly defined are those due to
Alcoholism.
The first case I give is a very good example
of a case from this cause.
The history and facts are not so complete
as I should have wished to have made
them, but the patient lived several miles
away in a very small cottage, and was
more miserable still. Solitary visits were only
made occasionally, and she was quite
unable to manage an electro-medical examination
She had in every marked degree the wasting of limb
which accompanies this form.
In a paper in article in Brain January
1896, divides it into two forms Alcoholic and
Paralytic.

With regard to the stage of mental symptoms
I did not notice anything similar to what is
stated by Dr. Brucefield viz. the patients
being oblivious to the circumstances about
them, or confined to bed.

With regard to the mental symptoms Dr. Brucefield
Paralytic Review p. 81 says:

In the nature of things, more or less intellectual
disturbance is frequent. The severity is
is especially weakened. The patient, as Dr. Letterman writes, "but nothing that does not exist, they describe the presence of their friends as they saw them." 

Upward cases are given by Dr. Britton p. 355 - 358. Of late, Nervous disease 
muscle weakness, paralysis, albumina 
and Respiration. 
Several cases are also quoted by Dr. Buxton in his work, Peripheral Nerves. 

The chief symptoms seem to be divided 
into three classes: 
1. Anemia in which Mental decline, 
  Symptoms, such as listlessness pain 
  hyperaesthesia, hyperaesthesia, together with 
  Localized atheromatous swellings and the 
  Traces of convulsive muscle spasm. 
  In the second stage, Paralytic Curvature 
  on 2 degrees, more quickly, accompanied 
  with absence of tendon reflex. 
  Still accompanied by sensory symptoms. 
  In the third stage, wasting takes place 
  There is also at this stage extreme sensibility 
  to touch, and the patient generally 
  suffers considerable pain.
with regard to the paralysis. The extensor
sense were affected nearest the flexor.
But differing from paralysis from lead,
although the lower limbs than the
upper. In fact Dr. Buzzaard thinks
dropped foot as characteristic of this
form of acuteness as dropped wrist of lead.
Dr Buzzaard in his last lecture which is
occurred chiefly with alcoholic fables
Says that facial muscles generally
escape.
It seems certain that cases of a very
modified form occur frequently, but
A case eh? I have described is
rare. The prognosis depend upon the
innocuity from alcoholic beverages.
The case of Mr. Brown recovered, and those
of Dr. Buzzaard in some instances.
Hoping fortunately to the recovery of my
patient I am unable to say anything
about the morbid anatomy in his case.
In the second case, I quote the diagnosis of multiple neuritis as an uncertainty, unfortunately in the belief that the cord would show some changes it did not. Occur to make taking the postmortem to remove some of the nerves to examine microscopically. The case was through life a puzzle. Our diagnosis was that there was probably some diffuse change in the membranes.

Dr. Buzard in his lectures, p. 122, says:

"Given the diagnosis, and discuss the points between neuritis and the following: acute ascending paralysis of Landry, tumour of the meninges, the pressure on the cord in the cervical region, Pott's disease in the same region, acute softening of the cord, spinal leptomeningitis, hemorrhage, locomotor ataxia, subacute atrophy, spinal paralysis, Antonio (acute) poliomyelitis.

Of the above, the only two which it would seem could come into the diagnosis of the case are: softening, meningitis."
Several days later. And then we met
Amy Radden or Rectal trouble. The
pain seemed too intense for Splanchnic.

The diagnosis from Meningitis was a
much more difficult problem.

The patient had no rigid Spastics or
Muscular Contractions. Commonly described
with this disease, no pain in the back.

At any moment, at the time she was in
Recumbent posture. I doubt that we
were aware of the importance of
Paralysis from peripheral nerves. But
reading the case in the light of some
more modern works, and especially
Dr. Buggard lectures I think it may
be fairly classed in that Category.

As to the causation - either Syphilis
or alcohol. Could be thought of; Diphtheria
and lead were also put aside. She herself
assumed the disease to have working in
the clayworks opellick Severe were situated
in the neighborhood. As other similar
Cases seemed to have resulted in
the hundreds of girls who worked in
various mills the where they were used.
The third case I quote may fairly be said
to be anewt. At first I seemed to see
a case of acute Rheumatism. With the exception
of the pain and swelling of the wrist, there
was no evidence. I am inclined to think it may have been a case of
serous inflammation of the nerves.
She strictly denied coffee and alcohol,
and it certainly did not correspond to
the history of alcoholic attacks.
Dr. Perugia is in his lectures
several cases of neuritis from
and it seems clear that the course was
a copious beer drinker notwithstanding
her assertions to the contrary; and
the prevalence of urgent here. So it would
come as the most probable cause.
I am given these three cases allowing
them to tell their own tale.
Electrical reaction seemed to furnish
the best tests. But except in special
practice, and hospital work, it seems
impossible to rely on the tests. For in
private practice not only do opportunities
for using them become feeble, and
Electrical apparatus constantly for
outdoors. But unless considerable
practice, vigor, and upkeep. The results
are known to be inaccurate.
Lines in general practice something was
required. Yet if attention is paid not
only to the west side of the question,
but also the cause, together with distribution
and a careful inquiry into its known causes.
Perplexed heart... will at worst cases not
present many difficulties.
In the treat more of the last case
needed antifebrin... together with Saline.
ate of soda... relying chiefly on the
latter.

Bartholow... the edition of his materia
medica... page 394... days... about
Antifebrin. "The author
has found it so effective that it has
seemed... to have specific action."
Certainly seemed... to take the pain
marvellously, and I observed
Disappearing symptoms.

Thinking false parts... linseed. Salicylates
Soda... which has also a reputation in
On peripheral neuritis.

The cases I have given in this thesis have been opt of those here cases I have personally seen. And registered during my three years House Surgeon of the Padstowka Infirmary. They were taken according to the plan of the case given in Professor Stempy's Stewards wards. But in detailing them I have adopted a condensed method, and have limited them to the most prominent features only.

As Dr. Bastian has written three works on brain, and paralysis. All my quotations are from his work on "Paralysis, Cerebral Bulbar, and Spinal." My quotations from others are from "Diseases of the Nervous System: With special reference to the Brain and General Nervous Diseases."

In submitting this Thesis to the Medical Faculty, for approval for the degree of MD. I must ask some indulgence for the Composition, writing, and arrangement being rather fast.
that my time of writing has been limited from the fact increased work which the recent epidemics of measles and influenza. It has been at occasional intervals at night time that I have been enabled to work. The waves in great part were written out and prepared sometimes ago, but when I came to rewrite them I found a new arrangement seemed necessary.

In writing my remarks I have tried to read up annals literature, and could, but my distance from a library has chiefly limited it chiefly to the text books I have quoted at different place. Together with the Medical Journal I have always endeavoured as far as possible to give the source of my remarks when taken. Belief of our Knowledge of the nervous system is common property. And it is difficult to ascertain its source.

A short of the case were of definite localization they ait were tell
their own tale

of Aphasias, Aphasia, and Aplasia: being subjects of great interest. I have
on these subjects made many extended remarks, at the same time I have
attempted there to explain clinical
and pathological views.

In conclusion I must acknowledge my
indebtedness to the opportunities I
possessed during my residence of
three years in the Adderley field, primary
and those of my colleagues who helped
me with cases and volunteered examinations.