

REMARKS ON THE
PATHOLOGY OF
PUERPERAL ECLAMPSIA,

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BY

HENRY LESLIE GRAHAM LEASK,

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Puerperal Eclampsia

is a subject, to which for the past six years I have devoted a good deal of thought & consideration.

One of my first obstetric cases, while attending the Glasgow Maternity Hospital was a case of Puerperal Eclampsia.

Since then (1886) I have met with it in private practice, and while acting as Resident, in charge of the out door department of the Glasgow Maternity Hospital in '89

My time, however, has been so well occupied that I have not been able to give the subject my undivided attention, many circumstances have prevented so careful and ^{thorough} consideration of the subject, or even of individual cases, as is desirable.

I Endeavour to set forth in the following essay, any ideas I may have formed on the subject

My own experience has been so limited, and opportunities of observation so few, that I have been

① John Stuart Mill

② The Science and Art of Obstetrics: Part II. p. 250.
Young & Pensland.
Edinburgh

been compelled to avail myself freely of the experience and research of others.

At the outset, a difficulty presents itself in regard to a Definition, this difficulty arising from our want of knowledge of the pathology of the condition

① "There cannot be any agreement about the definition, till there is agreement about the thing itself"

② "Eclampsia :— Puerperal Eclampsia :—
Puerperal Convulsions :—

Eclampsia is an acute disease, occurring in women, in pregnancy, in labour, or in childbed, often sudden in its onset, rapid in its progress, characterised by convulsions ^{and of} with loss of sensation & consciousness, ending in coma." (Bailey) "The sudden onset is indicated by the word Eclampsia - εκλαμπω - to shine out, to flash"

- ③ Sir James Y. Simpson in 1843 called attention to the fact that the convulsions were usually associated with an albuminous condition of the urine: the relation of these conditions had also been the subject of study and investigation, published by Dr Fever of London in the previous year.
- ④ Dr Simpson suggests, even here, that Eclampsia, instead of being a condition secondary, to renal disease, that, "the dropsy, the convulsions, and the albuminuria," may be "Simultaneous or successive effects of some ^{common} one, central cause, viz:- a pathological state of the blood, to which the occurrence of pregnancy in some way peculiarly predisposes."

In my own experience, a careful examination of the urine has always given evidence of the presence of albumen (in one case though present in the morning, examination next day failed to detect it). Albuminuria is the rule, but even Sir James Simpson admits that it may not be present.

⑥ Lawin: op cit. p. 258.

⑦ Professor Lawin's Synopsis is here followed
op cit. p. 254.

⑧ Hussman & Juncet on Convulsions &c
New Sydenham Society 1859.

⑥ Charpentier has collected 141 such cases, but these Spiegelberg excludes from the domain of 'Eclampsia', calling them 'Eclampsiform'.

⑦ Before entering on the subject it is necessary to consider some of the various theories which have been advanced.

I that the condition is caused by Cerebro-spinal congestion:-

This is one of the earliest theories, but now it is recognised that these appearances are rather to be regarded as the consequence, rather than the cause of the convulsions.

The treatment was derivative: Venesection.

Purging. Low diet

⑧ The experiments of Marshall Hall, Astley Cooper, Kussmaul & Jenner, showing that by bleeding animals to death convulsions were produced, and the fact that in death from hæmorrhage, convulsions similar or identical with those of eclampsia were produced

led to the adoption of an opposite theory, viz:-

II General or Cerebral Anaemia, adopted by Straube and Rosenstein and further elaborated by them. They held that the convulsion was the result of the Cerebral anaemia, and that the anaemia was the result of a cerebral Oedema.

The hypertrophied heart of pregnancy, acting in the hydræmic patient, the resulting high arterial tension relieved itself by a serous effusion, which by compressing the cerebral arteries so caused the anaemia.

Unfortunately for this ingenious theory, the oedema, to which is assigned such an important part in its production is not always found.

Dr. Angus McDonald's theory is an attempt to harmonize the foregoing theories. He argues thus—The cranial cavity must always be full, anaemia of the deep part must be counterbalanced by an overfulness of the superficial veins in the cranium.

Mac Donald's theory is, a combination. of

III Congestion and Anaemia

a. Congestion of the meninges + engorgement of the venous sinuses on the inner aspect of the cranium and spinal canal, resulting from

β. An Anaemia affecting the deeper portions including the collective motor centres + the cord causing a shrinking + diminution in bulk of the parts so affected, which is made up for by the congestion of the meninges &c.

The anaemia is produced by the circulation of a toxic agent in the blood.

(In a postmortem examination which I saw Dr R.M. Buchanan make in the Glasgow Maternity Hospital, on a case of Purpura Eclampsia, these were the anatomical appearances, but the dura mater was calcified, and especially over the frontal lobes was morbidly adherent to the calvarium. There were unequivocal signs of tertiary syphilis.)

Lawrie of cat. p. 255.

IV Eclampsia is a Neurosis

advocated by Sydenham Smith, who remarked

"In conclusion, to give a summary of the whole subject, the true puerperal convulsion can only occur when the central organ of this system, the spinal marrow has been acted upon by an excited condition of an important class of incident nerves, namely, those passing from the uterine organs to the spinal centre, such excitement depending on pugnancy, labour, or the puerperal state.

While the spinal marrow remains under the influence of either of these stimuli, convulsions may arise from two series of causes—those acting primarily on the spinal marrow, or Cerebral causes; and secondly, those affecting the extremities of its incident nerves—causes of Eccentric or peripheral origin."

Lawson of ch p. 256.

Medical News May 1. 1886.

basils, Year Book of Treatment 1890. p. 238

V "Eclampsia results from a poisoning of the blood by which it is rendered unfit to act normally upon nerve centres" - the theory most generally accepted, and the origin of the poison is also generally regarded as arising from failure of the kidneys "As recently stated by Dr. Tyson" "The majority of cases of puerperal convulsions, associated with albuminuria are due to acute nephritis". Elsewhere this eminent pathologist has said "Bright's Disease which I believe to underlie the large majority of serious cases of puerperal convulsions may either be present at the time the woman becomes pregnant, have preceded the pregnancy, or it may be acquired during the pregnancy"

VI. It has been suggested by Dr. Emile Blane of Lyons that the disease is due to a specific microbe

Lectures on Bright's Disease
by Robert Saundby M.D. Edin.
John Wright & Co Bristol.
1889

The theory that is generally accepted is that which ascribes the disease to the action of some poison, or poisons circulating in the blood, though the presence of albumen in the urine clinically, and evidence of kidney lesion usually found by the pathologist, indicate a relationship between this disease and Næmia, so called.

That these conditions are similar is generally recognised: that they are identical is by no means admitted.

But surely discussion on this point is comparatively useless. How can we determine the identity of cause conditions, if we are not certain of our standard of comparison?

"We are not in a position at present to explain precisely the pathogenesis of the so called Næmia. It is plain that the clinical phenomena vary, and that there are many poisons to which these symptoms may be due"

(a case of Belladonna poisoning with a
temperature of 110° is noted in Neale's Medical Digest
376-4. Ledger Smith & Co London. 1891)

Pathologists are not agreed as to the exact conditions necessary to the production of Mæmia. There also a toxæmia is readily admitted as an ætiological factor, but whether it is primary; or secondary to a usual lesion is not clearly determined.

The conditions in question resemble each other in their variety of clinical manifestation, for Puerperal Eclampsia, like Mæmia, has not a constant clinical history.

It has been stated that the course of the temperature is of use in the differentiation of the two conditions.

In Eclampsia there is, it is held, a progressive elevation of temperature, even up to 109°F . (Bourneville) and in some cases the temperature continues to rise after death.

Dr John Brown of Govanhill incidentally mentioned to me a case of Puerperal Eclampsia, which he had met with, in which the temperature, half an hour before death registered 110°F : a similar temperature was mentioned by Dr Galabius

British Medical Journal. Vol. i. '90 p 133/4.

Galabius reference above

Manual of Pathology. Joseph Coats M.D. 2nd Ed. p. 356
Longmans & Co.

in a discussion at the London Obstetrical Society, when this point was under consideration.

In Mæmnia it is held that the temperature progressively falls, and subnormal readings may be shown by the thermometer: quite an opposite course from that of Puerperal Eclampsia.

The very high temperatures in Puerperal Eclampsia would appear to occur in the untreated cases,

"Chloroform or Bleeding especially counteracted if" Sterman pointed out, from a study of such cases that no relation could be made out between the temperature and the number of fits.

If Alvarado's theory be correct, and it apparently has some grounds, viz:- that Puerperal Eclampsia is a strike on the part of the organs of elimination, the glandular structures will be on strike as regards their heat producing function also, for heat production normally is associated with the performance of their special functions.

But in pyrexia the heat is apparently produced differently from the process in health, for we may have it, with glands "on strike" and with relaxed muscles. Dr Coats explains that

op. cit. p. 354.

in pyrexia "the production of heat is due to a destructive combustion of the tissues, and is thus abnormal in its method" "It seems more probable that a morbid agent in the blood directly induces this change in the tissues" The parenchymatous changes, degeneration or cloudy swelling would also go to support this suggestion of toxæmia, for it has not been found in cases of high temperature (acute pneumonia) and it has been found where there has been no pyrexia indicating that the direct action of the super-heated blood, is not the cause as it has been stated

Although the method of heat production may be abnormal in pyrexia, the source of the heat is the same. It indicates a biochemical change in the muscles and glands. In the building-up or nutritional processes going on in the protoplasmic cells of the body, energy is rendered latent and stored up — on the other hand, disintegration of complex molecules means the liberation of energy, in the form of nerve energy — heat — motion — or Electricity — and "Heat is the least specialised of all forms of energy and is a

Broadbent. B. M. Tom. Aug. 9. 90 p. 317.

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a sort of pool from which they may be obtained, and into which they tend to return", whether "Heat is actually as well as potentially absorbed in the building up of structures we do not know, but from the fact that almost all forms of disease are attended with an elevation of temperature it seems clear that when the nutritive operations are disturbed the energy which should have been fixed in building-up of structure is liberated in the form of heat."

In disease the mechanism for regulation of temperature may still control, but its index instead of being set at 98.6 is put to the higher figure of 101° or even higher, the diurnal variations of temperature still exist. This heat regulating mechanism Dr. Gaillardet, in this connection, compared to a stringed instrument—usually it is tuned to A, but we might tune the A string to a higher note; of B or C—meaning an increased tension of course on all the strings to put the violin in tune, the same fingering will produce the same melody, pitched higher or lower according to the key note.

British Med. Journal. 1/90 p. 949

Laroue. p. 257. (Hypopolitis mouets)

Saunders on Bright's Disease. (1889) p. 253

Very high temperatures are registered in Tetanus and in Hydrophobia, and in these diseases as well as in Puerperal Eclampsia. There may be a postmortem elevation of temperature "probably due to the continuance of the action of the poison on the thermogenic part of the second nerve after the death of its motor part" (Stalk White)

In a case of Malignant convulsions seen by me at the beginning of this year, the temperature was elevated, and shortly before death the thermometer indicated $107^{\circ}F$ ~ on explaining the boy's illness to his father, he informed me that the boy's mother had died, at his birth of Puerperal Convulsions

Pyrexia thus may and does occur in Malignant, in this case the rise of temperature was progressive until death

Subnormal temperatures have been recorded in Eclampsia, and Bonnewille from cases of Malignant gives very low thermometric readings of 93.1° ~ 91.1° ~ 89.6° and even 86.1°

But some cause can often be assigned for these low figures, e.g. they occur in old people or in

op. cit. p 69.

chronic cases; in cases with complications, vomiting or diarrhoea; and many of the cases are not "Bright's Disease" but are secondary to obstruction in the urinary passages, and in such convulsions rarely occur. Sandidy recognises these as a distinct clinical type, with which, to compare puerperal convulsions is hardly fair, the essential symptom is the Eclampsia.

Puerperal Eclampsia is, or may be regarded as one of the clinical types of Næmia (so called) Its symptoms and signs vary: albuminuria is not necessarily present.

It is ~~the~~ Næmia modified by the conditions peculiar to pregnancy, labour & the puerperal state.

In pregnancy the digestive organs, are affected more or less. Morning sickness is so common as to be regarded as one of the signs of pregnancy. The liver and other glandular organs, are found on postmortem examination to exhibit evidences of a change in the protoplasm of their cells of the nature of "cloudy swelling", and instead of being

J W Byrd M.D. B. Med Journal. Vol 2. 90 p 687

Form of ed. p. 236.

Pathology. J Coals M.D. 1st Edn p 642.

Lauder Brunton. Materia Medica & Therapeutics

London Macmillan & Co. 1885

p. 15. Group 5.

p. 352 Action of Drugs on Digestive System

Glycogenic function of liver

"

"

p. 650.

p. 362.

p 364

in all cases due to reflex action, it has been
(the vomiting)
suggested that it is in some way connected with
the changes observed in the liver cells.

Acute yellow atrophy of the liver, a condition peculiar
to pregnancy, is associated with an uncontrollable
form of vomiting and "obviously due to the action
of a morbid poison circulating in the blood"

The liver changes are identical with those found
in Phosphorus poisoning. The other members of the
same class of chemical group. Antimony and
Arsenic produce similar change, interfering
with the glycogenic function of the liver and
tending to produce fatty degeneration of the
hepatic cells. Ipecac emetic produces emesis by
its action on the vomiting centre in the medulla;
(Magnus), its local action on the mucous membrane
of the stomach, usually a factor is not necessary.

The action of this chemical group is evidenced by
the production of fatty degeneration in other organs
than the liver, and especially in the muscles, first

— it is suggested, by their replacing Nitrogen, then
by large doses of the Albuminous
Tissues are
Non-nitrogenous
Substances e.g. Fat etc
Nitrogenous e.g. Leucine
Substances Ipecac etc
converted
into
Carbonic Acid
Excreted by lungs.
Urea
Excreted by the kidneys

Leishman's. System of Midwifery. 1880. p. 153. fig 18

Sawin op. cit. p. 161.

Manual of Human Histology. Vol ii. p. 258.

By A Kölliker. Sydenham Society. 1854.

D Byers. B.M.J. Sept. 26. 1891

Vomiting is a form of Convulsion, its occurrence in the morning is because then the nervous system is refreshed, and the centre most excitable.

The gravid uterus is much larger, and heavier than the unimpregnated. The muscle corpuscles increase in size and number; the capacity is increased, and the functions entirely altered. Corresponding to this, changes take place in its vascular system; the vessels increasing in number in size, and length, an increased blood supply being demanded, to satisfy the requirements of this important organ in the performance of its most important functions.

The demand will be the greater in a twin or triplet pregnancy, a larger blood supply will be asked, and more waste matter thrown back on the maternal organism for elimination, and those most important organs of elimination - the kidneys - may be hampered in their functions by having their circulation interfered with mechanically, by pressure of a much distended uterus. Winckel notes a predisposition to Eclampsia in twin & triplet pregnancies, and "on the other hand

A system of Midwifery. By Jushuan. 1880. p. 260.
The Anatomy of Labor. W. A. H. F. Barbour. ^{foot note}
W. A. H. Johnston Edinburgh. 1889.

B. M. Journal p. 988. Vol. 2. 1891.

Alton Dagge. Principles & Practice of Medicine. 2nd Edn
Vol II. p. 615.

"that with the death of the foetus ched during pregnancy the danger for the gravida is much lessened or entirely overcome".

D. Freeland Barbour & D. J. D. Macfarlane have recorded cases in which an albuminuria has disappeared simultaneously with intra-uterine death, and D. Barnes tells us that the increased arterial tension and Cardiac hypertrophy peculiar to pregnancy "continues throughout while the ched is alive".

These cardio-vascular changes indicate an endeavour, to meet the extra demand made on the economy, in connection with increased supply, ~~and~~ aeration of blood, and elimination, and best explained as Cohnheim accounts for the similar phenomena of Bright's Disease:- the increased activity of the circulation sending the blood more rapidly & therefore softer through the lungs and kidneys and other organs of the body.

The anatomical expression of this excessive, but still regarded as physiological activity is the Cardiac & Vascular Hypertrophy. These changes, like the hypertrophy of the Uterus, disappear slowly

Larva p. 158.

Basels Year Book of Treatment. 1890. p. 233.

Dr. Leopold Meyer (Zeitsch für Geb. und Gyn.

Band xvi. S. 215)

Mey. Basels Year Book of Treatment. 1891. p. 331,

(Arch für Gyn., Band xxxv.)

after pregnancy. O'Barnes has found that the heart at full time weighs 103 more than the standard of 8 or 9 ounces.

In the later months the lungs may be interfered with in their functions, while a greater demand is made on them. The amount of Carbonic Acid exhaled increases as pregnancy advances.

By the kidneys, there is diminished elimination of the inorganic salts, except Chlorides, those retained being required & used, it is presumed, in the development of the foetus.

Albuminuria occurs in 10% of women in last month of pregnancy. This has been observed in association with. Eclampsia. Puerperal mania.

Accidental Haemorrhage. Premature Labour
Accidental Disease, and intra-uterine death

Glycosuria occurs in 6% (Parvin) of Pregnant women at this same time. The source of the sugar is the lactical secretion, for in pregnancy it occurs only in women with large and well developed breasts. It is present in 75% of Lying-in & nursing women, and increased or diminished in quantity as the flow of milk is hindered or very free.

Vierdort's Medical Diagnosis. p. 447.

Young J. Furthland Eden? 1891

Dr J. W. Byers. B. Med. Jour Vol. ij. 91 p. 681.

op. cit. p. 69.

p. 78 " Saunders op. cit.

This is held to be a physiological Glycosuria, the milk in these cases is more nourishing to the infant than when sugar is absent, and the more present and the longer it lasts the better well-nursed will the woman make.

The sugar is lactose or Sugar of milk.

Acetonuria is associated with Diabetes; Stumpf noticing the ether-like odour of breath in patients suffering from Puerperal Eclampsia, found Acetone and Sugar in the urine.

Dr Saunders "third type" of mania resembles Kussmaul's Coma; that form met with in Diabetes "there may be convulsions and coma, preceded by epigastric pain, with rapid pulse, and deep sighing respiration". An acid formed in the intestine, and thence absorbed into the blood is supposed to cause this "Kussmaul's Coma".

Suvalor has noted this condition in atropine poisoning.

The state of the nervous system in pregnancy, and the more as labour approaches is one of increased tension, and is liable to reflex disturbances. Significant changes, round the nipple, on the abdomen &c.

Larvin of cat. p. 157.

A Text Book of Human Physiology ~ 1891.
Laudon & Stirling. p. 19.

of it p. 249.

3
occur, the degree of colour varying greatly.

It is a physiological imitation of the pathological condition known as Addison's disease, and connected in some way, therefore, with the Suprarenal gland.

The Blood is altered quantitatively and in quality: I The watery element is ^{increased} ~~increased~~ and it gives more fibrin; II Diminution as to the quantity of albumen III The number of red corpuscles ^{is} ~~are~~ reduced, and the quantity of Iron as a consequence IV The white blood corpuscles and Bizzozzeri's disclets are present much in excess of normal (Halla).

D'Leishman uses the term - "pseudo-chlorotic state". Cazeaux described it as a condition of Chloro-anæmia, but the advice given by them as to the use of animal diet is in certain cases - those with albuminuria - open to question though the use of Iron, say in the form of the tincture of the Lactate if combined with a saline, as the ordinary sulphate of Magnesia in those cases which D'Leishman classes as chlorosis, can be productive of only good.

Dr Galabin B. Med. Journal. Vol. 2. 1891. p. 679.

Stanton Jagger. Principles & Practice of Medicine
Vol II p. 805.

These physiological changes must be remembered in considering the question of the production of Puerperal Eclampsia.

Reflex action may play an important part in the production of the Convulsions in Puerperal Eclampsia, thus it is sought to explain those cases occurring with an absence of albuminuria; "these two causes — namely increased reflex susceptibility, and the presence of a source of irritation — complete the whole pathology."

Gowers thus explains the absence of profound Mænic coma "the presence of a powerful cause of reflex irritation, which may excite convulsions, apart from any toxæmic influence, and when no other predisposition exists than an undue excitability of the nervous system."

Again Epileptiform convulsions have been cured by such a simple measure as extracting a decayed molar (Jones) or by the successful treatment for the removal of Septic Wound (Trousseau)

In the pregnant woman we have an unsettled state of the Nervous System ~ "Convulsibility of Pregnancy", depending on the "state of nutrition of the nerve-cells, and therefore dependent on the quantity or quality of the blood supply. Such a state of the central nervous system may be regarded as physiological. (2) but the circulation of a poison having an action like strychnine, and further influencing the nutrition of the nerve cells would exaggerate this physiological state into a pathological condition. Some poisons are described as having first a stimulating effect passing on to paralysis ~ but by giving a smaller dose, the first effect of a large dose may be obtained and the last avoided, while on the other hand, the use of a very large dose will at once produce a paralyzing action. With opium for instance a tolerance is produced by its repeated use ~ in time, a larger quantity is required to produce the stimulant effect, to produce which it is usually taken, and its action may be long delayed.

Landon & Stirling of ed. p. 838.

Woods Therapeutics p. 208. 210

Smith Elder & Co London. 1888.

Wood p. 208.

Lauder Brunton of ed. p. 132.

Small doses of atropine at first increase the excitability of the motor centres.

In atropine poisoning a "maniacal surge from convulsions & reflex spasms early in the poisoning and often exhibits evidences as though of excited reflex activity." In not too large amount atropine is a stimulant to vasomotor centres. This action being similar to the action of the drug on all the other motor centres. On the spinal cord atropine has an action similar to strychnine, in causing increased excitability &c.

A toxæmia thus may so affect the motor centres as to render them more excitable, and an efficient reflex irritation will call a convulsion into action all the more easily.

The individual nerve cells, in the motor area, related to the movements of muscles with which an epileptiform convulsion sets in are smaller in size than those which come into play later, and would therefore be more easily influenced by changes in the blood. (Hughlings Jackson)

Laudois + Stirling of al. p. 785.

to regions of the body furnish a stimulus to reflex action, more effectively than do the intestines or sexual organs. This may be explained by their relations to the Sympathetic and Pneumogastric Nerves.

It is probable that all reflex acts are due to the repetition of impulses in the nerve centres. — A weak stimulus, not enough of itself to the discharging of a reflex, will do so if repeated sufficiently often. Strychnine so interferes with this "Stimulation of Stimuli" by increasing the reflex excitability that a minimal stimulus is at the same time a maximal.

The uterus is the organ, to which we naturally look, in seeking for an exciting cause of the Convulsions in puerperal eclampsia and it is possible that the action of such a poison as Atropine — acting either directly on the muscular fibre, or by its action on the spinal cord — may be a factor in producing irregular, painful, and useless contractions known as false pains, ^{and} rigidity of the os which acting on the motor centres of the brain

Obstetrics. In J. Y. Simpson p. 297 footnote.

Helen Suggs. 2nd Edn p. 501.

Principles & Practice of Medicine, William Osler M.D.
Young & Stunkard 1892. p. 767

might determine the onset of the fit.

"After pains" and "the pains" of abortion may account for the cases occurring during pregnancy or after labour. Any other sufficient peripheral impression might act similarly.

D'Hamilton describes the epigastric pain which is one of the three puerperal symptoms as "Crampish pain of the stomach," which would indicate a similar mode of production.

This might act ~~as~~ as an exciting cause.

Epileptiform convulsions have been caused by the pain(?) due to the passage of a gallstone, on the other hand - in renal colic going on to obstructive suppression (D'Roberts). D'Roberts remarks

that "the mæmic symptoms may not develop for a week, when twitching of the muscles, great restlessness, and sometimes drowsiness supervent, but strange to say neither convulsions or coma". Here we have a true

condition of Minæmia. The kidney affection is due to the presence of a calculus, and not the result of a toxic agent other than the normal constituents of the urine.

One of my first cases in private practice was a multipara in her 13th labour, a big, strong, stout, plethoric woman.

I was summoned one evening at 9 p.m. and found her suffering severely; the α was quite unaffected by the contractions, showing no sign of dilating. The woman fell asleep at 12 o.c. and I left, giving instruction to be sent for if required.

Next evening the summons came again and the condition on examination was as unpromising as on the previous evening.

She had passed an uneasy night, and had been troubled all day with ineffectual pains. So giving her 45 drops of *Sanduanum* ^(only to be brought back immediately) I again left, \wedge assuring her that she would get a good sleep, which she much needed.

The character of the pains changed at once, and being felt in the sacral region indicated a dilating α . After a rapid & easy labour of 20 minutes the child was born. Since this case I have had a similar experience frequently.

B. Med. Jour. Vol. i. 90 p. 1440.

Lauder Brunton. op cit. p. 437 - Table -

Chap: *1*, on the Antagonistic action of Drugs.

op cit 399.

Parvin pp. 301. 443 et seq.

Management of Labour. Army & Lauder, M.D. p. 75
Charles Griffin & Co London.

Discussion on Modern methods of managing
lingering labour. B. Med. Jour. Vol ii. 90 p. 715
W. S. Playfair M.D. and remarks by
D. Murdoch Cameron. D. Walker & others.
Lauder Brunton op cit p. 437.

Has the opium an antagonistic action here as it has to atropine?

Quinine too which is useful in similar cases has an antagonsim to atropine, and Brindley classes it with Ergot & Savine among the chief scbolics. Parvin also bears testimony to its good effect, recommending its use in abortion, and in labour. Lauder

recommends its use in doses of $\frac{1}{5}$ repeated every hour. "A sleepy uterine centre may be roused by Quinine and the general muscular tone improved. It has no special action upon the uterine muscle, acting indirectly but none the less effectively" he goes on to say "Ergot is the most uncertain drug in the Pharmacopœia."

nor is the good opinion of quinine confined to America. Competent obstetricians in this country ^{confirm it.} Dr. Bell has found Yeloverum act similarly. It also is an antagonist to atropine, and so is chloral. hydrate.

If clots are well cleared out of the uterus these same drugs are useful in the

Cassels Year Book of Treatment p. 149. 1892

" " " " " p. 379. "

treatment of after pains.

Such irregular uterine contractions are usually ascribed to irritation of the bowels. It is interesting to find that Arsenite of Copper, found useful in the treatment of Colic and Chronic Diarrhoea should be recommended in the treatment of after pains, and used with good effect.

The poison acting in producing Haemia is still unknown: the advance of modern chemical research should soon throw more light on the subject.

The Carbonate of Ammonia theory of Frerichs is only mentioned. It now receives no support.

Urea, has, even in recent times been looked upon as the poison, as also have allied bodies - the various extractives. These bodies are found in normal urine but occur in excess in the blood in Haemia, and other secretory organs

by vicarious action may aid in their excretion when the action of the renal organs is compromised.

The presence of an excess of urea in the blood indicates either increased production of that body, or, that it is not being eliminated by the kidney.

It must be remembered that urea is a diuretic, a small quantity is found normally in healthy blood, and the quantity eliminated, will depend on the amount of fluid passing, and on the point of saturation of the blood. It is a non-vital substance, of organic origin, with such a comparatively simple molecule that it would pass readily through the renal epithelium— even if this epithelium were paralysed in its selective functions— in obedience to physical laws.

In uræmia following "obstructive suppression" (Roberts) Convulsions & coma are rare, but they frequently occur in the uræmia of scarlet fever, where there is a toxic agent

Obs. of. cat p 737.

Manual of Pathology. O'Coals 2nd Edn p. 808.

circulating in the blood.

It may be noted in passing that Scarlet fever has been said to resemble Belladonna poisoning.

It would seem that in the Human subject something else must be present than the ordinary constituents of the urine to produce relapsa. "Haemuria may supervene in a case of chronic Bright's Disease in which a large amount of urine is being passed with a fair proportion of Solids"

Compensatory renal hypertrophy is a recognised physiological condition: Experiment in full grown animals demonstrates that after the excision of one organ, the remaining kidney in a few days adapts itself to the needs of the organism, and proves adequate to the double duty demanded. It may and does occur after an excision of surgical kidney, or when a hydronephrosis of its fellow demands it, but it is not part of the history of "Bright's disease" so called.

Clinical Notes MSS.

See list of "Diseases of the Blood."

Hulton Taggs. 2nd Edn p. 747.

Notes of cit h. 26.

" " " h. 15

Dr Gairdner insisted, I remember, that Bright's disease was symmetrical, bilateral, diffuse accompanied by degeneration, and Dr Coats in considering the causation of this disease has no hesitation in recognising that the "initiant" is carried to the renal organs by the blood.

Pathological anatomy would seem to indicate clearly that Bright's Disease is a "blood-disease." The different forms resulting from different initiants. Anaemia may be taken as the type of those so called "blood diseases."

If we have regard to the recent views of its pathology, how can we deny Enteric or Typhoid fever a place in the same class? in one form of which disease — the "nephrotyphus" of the Germans or the "fièvre typhoïde à forme rénale" of the French an acute nephritis may complicate the disease, — occurring at the onset of the disease or during the height of the fever. A scarlatiniform or rash may occur in Typhoid, during the first week and this also occurs in

Saundersy of. cit h. 244.

of. cit. p 767

Belladonna poisoning; and erythema is common in Mænia

To distinguish a "true", synonymous with a mænic form of eclampsia, as Dr. Lushman suggests, however distant from a therapeutical point of view — and in using morphine the presence of a large quantity of albumen, would make us cautious — pathologically + clinically we will have some difficulty in drawing the line. The poison may circulate in the blood and aid in the production of the condition of "reflex excitability" or "heightened nervous tension" and also perhaps so act on the uterus as to provide an efficient stimulus to reflex action and yet never affect the kidneys at all, in such a way as to be recognised clinically by the presence of albumen in the urine — or what is more probable, that presence may be so evanescent as to escape detection, or the albumen present, in such a form as to escape ordinary testing reagents

As there may be convulsions, and no albumen demonstrable in the urine, or escaping detection. on the other hand known subjects of Bright's disease, and also women suffering from some albuminuria of pregnancy with marked oedema may escape the convulsions & have a remarkably easy labour, especially if treated dietetically.

In these cases we explain the non-occurrence of convulsions by the want of excitability of the nervous system - a tolerance having been established; the want of a sufficient exciting cause; or the dietetic or medicinal treatment employed, may have prevented the formation of, destroyed or antagonised in some measure the noxious or poisonous agents

B M Jones. Jan. 3. 91. p. 12.

* The individual cells, as will appear later, have not yet attained the perfect state "

Diseases of children p. 421. Money
H. K. Lewis & Co London. 1887.

As the convulsions is the essential and constant symptom of puerperal eclampsia it is interesting to consider in connection with this subject some of the other forms of Eclampsia

D Jardine has pointed out the similarity between puerperal eclampsia and the convulsions of childhood, and in many, and the essential points the comparison holds good. In the child we have a state of the nervous system comparable with the
* "convulsibility of pregnancy" and consequently convulsions are frequently met with.

In making comparison we must remember developmental differences in the brain of the child from that of the adult: the convulsions in the newly born are "lowest level fits" of Dr Hughlings Jackson, the higher centres being undeveloped. The convulsions of childhood may become Epilepsy in after life, and even these, may at times have a relation to a traumatic convulsion: "A ^{mere} ~~trivial~~ lowering of vitality favours Epilepsy in neurotic

Vincent's Medical Diagnosis. p. 448.

children. A defect in the liver, a temporary inadequacy of the kidneys skin and lungs may increase and maintain epilepsy in neurotic children" These convulsions of childhood are examples of fits produced as the result of "reflex action," an explanation which always requires scrutiny - on careful examination it seldom will "complete the whole pathology." though it may certainly play a part. Diacetunia, occurring in adults associated with certain nervous system symptoms indicating toxæmia is of bad prognostic import "As to its significance when it occurs in children, Sakoch, by recent investigations arrives at the supposition, that the convulsions which so frequently occur with them in acute diseases may be explained by diacetunia"

An attack of pneumonia in a vigorous child is often ushered in by an alarming convulsion Dr. Angel Monev in a recent discussion in one of the London Societies was inclined to attach to such a good prognosis, inferring that the disease will terminate favourably in as abrupt a

Eustace Smith *The Wasting Diseases of Infants*
& children. p. 110. J & A Churchill. London. 1888.

B. M. J. Suppl. p. 97 June 18. 92.

a manner - by crisis. But in chronic disease this hyperexcitability is lost and a secondary pneumonia may develop without any marked constitutional symptoms, and is discovered perhaps accidentally by indicative physical signs. A common termination of a

dianthoëmic illness in a child is by the Hydrocephaloid Disease so graphically described by Gooch, ascribed by Sajot to the poisonous action of a ptomaine, and resembling mania.

In alcoholism the convulsions are eclampticiform and the fits may resemble closely the disease of pregnancy - recurring frequently at short intervals.

The distinction between the convulsions of the puerperal condition and Epilepsy may be impossible, especially from that form distinguished by Dr Hughlings Jackson as Epileptiform. It can only be done by a very careful consideration of the clinical history of the case.

Certainly they cannot be distinguished by the presence or absence of albuminuria. An Epileptic too may enjoy an immunity from fits during pregnancy and may pass through a difficult

Labarra

without any convulsions. Can the poison circulating in the blood have an astringent action on the nutrition of the nerve cells?

Belladonna has been recommended by Rousseau in the treatment of Epilepsy.

In the Eclampsic fit there is a "certain order in the disorder" - "a regularity of the irregularity" - the hysterical fit differs from this in being all disorder and all irregularity - the patient does not lose consciousness and takes good care of herself, avoiding the injuring of herself by her movements or biting her tongue. Compared with the genuine it is a very poor imitation.

A young unmarried girl was sent to the Glasgow Maternity Hospital in a cab, said to be pregnant for the fourth first time and about the third month. She had suffered from two or three convulsive seizures in a house in George St. her landlady having given her notice to quit. She had no fits while under observation in Hospital. Examination under chloroform, showed that she was pregnant; probably about the fourth month but a split cervix told its own tale.

Dr. Hughlings Jackson. Brit. Med. Jour. Mar. 29. 90.
(Lumbar Lectures) p. 703

Victor Horsley. Brown Lectures. Lancet. Dec. 25. '88

Eclampsia is regarded by Vinograd as "Symptomatic Epilepsy" -

The recent remarks of Dr Hughlings Jackson deserve more than passing notice.

"The most brutal-looking convulsion is only the sign of a departure, by a vast excess and by a caricature from normal nervous discharges"

It is assumed by him that the convulsion results from excessive discharges from nerve-cells meaning the liberation of energy by rapid metabolism of some matter in or part of these cells

Three classes or kinds of fits are recognised depending on the rank or level of the discharging centre - in order of their evolution, from below upward Each of these levels of the Cerebral nervous system is sensori-motor, and they respectively represent, re-represent, and re-re-represent impressions & movements of all parts of the body Each level is bilateral, and the two centres are connected by fibres as well as with other "non-identical" centres of the opposite brain

The fits in eclampsia are cortical fits, for the combination & sequence of tonic-clonic

Order. of cit. p. 958.

Saundby of cit. p. 69.

could originate only from the cerebral motor cortex". The absence of aura & their usually localized beginning on one side of the face and body - the turning of the head to the one side class them as Epileptiforme. The signal symptoms affects the facial muscles, and the fit always becomes universal, and consciousness is lost. "Typical" Jacksonian Epilepsy does occur in mania. The convulsion affecting one limb & consciousness retained.

The whole convulsion is but an exaggeration of familiar normal movements "those of smiling, masticating, singing, manipulating etc." "a mad endeavour on the part of the highest centres to develop the maximum of function of every part of the body, animal and organic and of all parts at once"

The nerve-cells have still their usual connections and relations, but their nutrition is so altered by pathological processes, that they have become highly explosive or "mad."

B.M.J. 1.90 p. 767. foot note.

Organic matter - protoplasm - and nervous matter has excellence - has as its function the storing up of energy. Dr Jackson supposes that the explosive condition is always the result of a pathological process, by morbid nutrition, - a nutrition which alters the composition of the nervous matter; that strychnine for instance enters into the composition of the protoplasm of the nerve cells - this morbid (substitution) nutrition, implying an "hyperphysiological" degree of function corresponding

We are certain that normal movements result from the liberation of energy attending katabolism, and having seen what relation the convulsion bears to normal movements, we infer that it is the result of excess of the same physiological process - sudden and excessive energy liberation attending great and rapid katabolism.

Glycerine, where some of its hydrogen is replaced by nitric peroxide, becomes the unstable highly explosive nitroglycerine, an analogous change is assumed in the

Brit. Med. Jour. '90. Apr. 26. p. 949.

production of this "physiological fulminate" - the abnormal nutrition giving rise to a substitution product, and renders unstable protoplasm, still more unstable and explosive. The constitution of the protoplasm remains the same, but its composition is altered - its morphological character remains unchanged but its function is altered.

D'Arcy White holds that there are three thermic levels, and makes out an interesting parallelism with Jackson's three evolutionary sensori-motor levels.

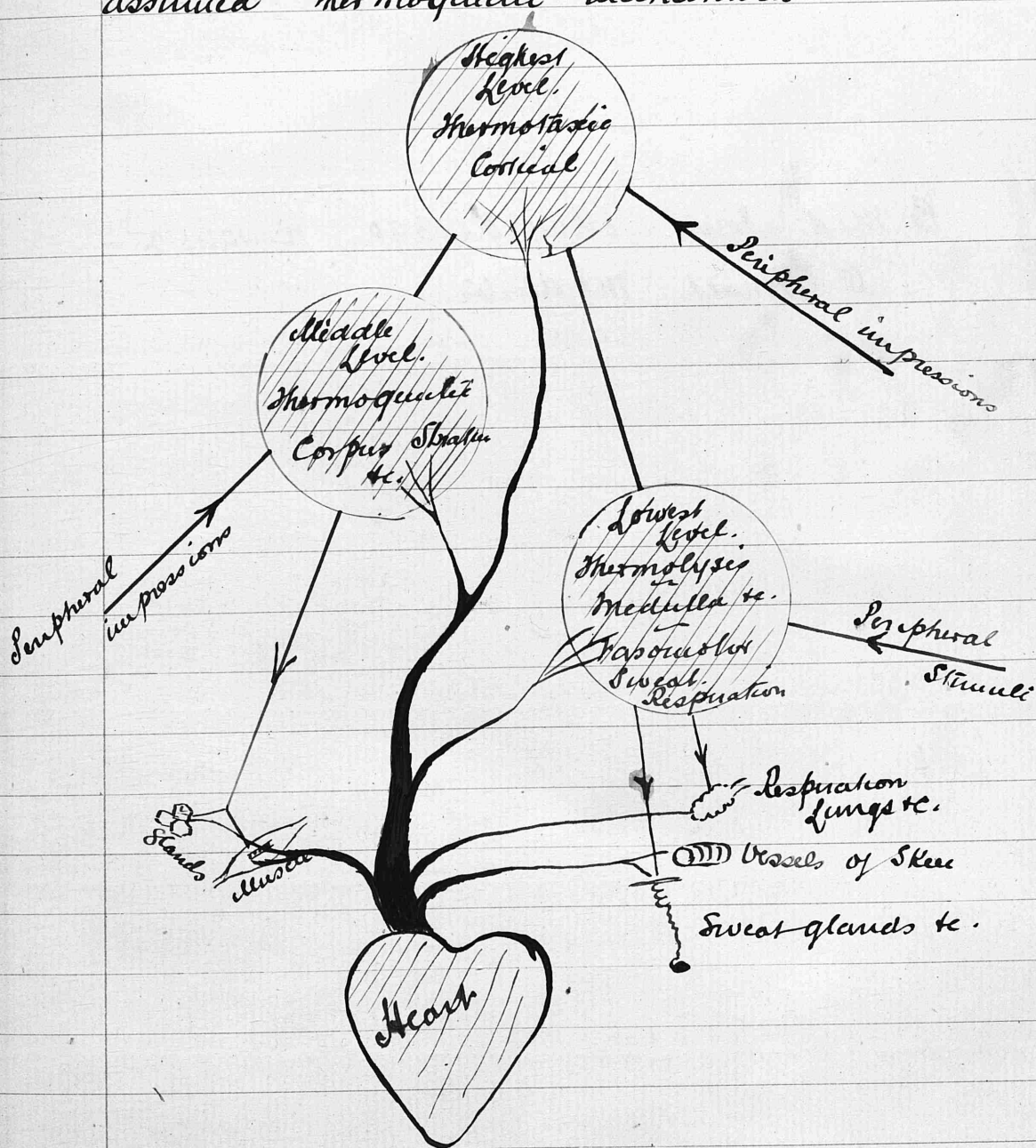
I Lowest level, controlling heat discharge
Thermolytic

II Middle level, controlling heat production
Thermogenetic

III Highest level, balancing the action of the lower centres
Thermotaxic.

Many interesting & conclusive facts are brought forward in support of this theory showing "that the parallelism between the three thermic levels, and the three sensori-motor levels is in their anatomy, - their complexity, and their order

of evolution very close. The "middle level" of both, corresponding with the motor area and the corpus striatum, is the seat of this assumed thermoelectric mechanism



Landow & Stirling of ca p. 873.

B Med. Soc. May. 3^d. 1890 p. 1041/2
Dr. Donald Macalister

Landow & Eulenberg's observation that excitation of an area in the cerebral cortex produced a variation of temperature in the part of the body to which it was related, is interesting. Destruction of this area produced a rise in temperature ("1.5°C to 2°C or even 13°C) Wood & others. This localisation of the nervous theory of pyrexia put forward by McAllister, gives it a new interest and importance. It must be admitted that there are some discordant facts, but these may be explained by further working.

These centres may be acted on by poisons e.g. poisons circulating in specific fevers. A rise of temperature is noted in "fish" poisoning & Belladonna poisoning.

They may be acted on by peripheral impressions or stimuli - severe pain, e.g. Biliary colic in very tense painful abscess, where opening gives immediate relief with sudden drop of temperature.

Parvin op cit. p. 258.

Galabin B.M.J. Vol ii. p. 679 2nd col.

Dr Kirk. Lancet May 3^d 1890.

Cassels Year Book of Treatment 91. p. 135

Albuminuria occurs in the majority of cases of Puerperal Eclampsia; the association has been so constant, that as has been noted, competent authorities, would distinguish a true form of the disease, from that in which albumen is absent from the urine, and called by Spiegelberg Eclampsiforme. Albumen in the urine, by those, is taken to indicate disease of the kidney - nephritis - which condition by interfering with the eliminating function of the kidney produces the blood-poisoning, so causing the eclampsia.

But Dr Galabius suggests that the eclampsiform fit may be best explained, by supposing the existence of a prealbuminuric stage: such as the case Dr Mahomed demonstrated in the chronic form of Bright's disease.

Albuminuria indicates that the Glomeruli are allowing the escape of albumen, but its absence is no proof, that the other parts of the kidney are not affected in their proper function.

In support of this idea may be mentioned a condition - Mucinuria - which Dr Kirk calls attention to, which always occurs with and is

Manual of Pathology. 2nd Edit. p. 115/6.

J Coats M.D. - Longmans. London.

D. Coats remarks may apply to large doses -
comparatively - by analogy we would expect
a stimulant action to precede the paralyzing -
as atropine paralyzes the nerve cells after
stimulating them -

* I now have not the slightest doubt but it does!

a forerunner of albuminuria, and is suggested by Raabe to be indicative of a derangement of metabolism in the renal epithelial cells.

Anything impairing the function of these cells may evidence itself as a "mucinuria", and its continued action may produce albuminuria.

Naturally one feels inclined to refer "mucinuria" to irritation of the renal epithelial cells, but before so doing remember what Dr Coats says as to the term irritant — "this name irritant is apt to be misleading, as it embodies the conception of a stimulating action; whereas the so called irritants in their nature and action, possess characters rather of a deadening than of a stimulating kind." This explanation is very necessary, and would suggest a paralysing action; we can thus understand how a substance acting on the renal epithelium, as atropine does on other glandular structures, will affect them.

* The clinical condition of mucinuria & may be indicative of such action — albuminuria may indicate a similar but excessive action on

Professor MacKendrick.

M.S. notes on Physiology. 85. 86. Winter.

no.

Samuel Ferguson on Bright's Disease
Albuminuria. p. 17.

the glomerular epithelium.

The kidney is a compound tubular gland - plus a filtering apparatus, and the cells exercise a very similar, if not identical function to that of any other gland; in virtue of their vitality and special function they have a selective action.

Very lately in the Glasgow University, the theory of Ludwig was favoured - that albumen escaped with the salines & fluid, by a process of filtration under pressure, and was reabsorbed, by the cells lining the tubules, the urine also becoming concentrated by absorption of fluid.

"Atropine paralyses the cells of a secreting glands - if atropine is administered to animals albumen appears in the urine (McEugor Robertson) because these cells are paralysed"

Ludwig's theory has been weighed in the balance and found wanting. It could not stand the test of careful histological investigation, although the anatomical structure of the kidney seemed purposely made and designed for it - the loop of Henle evidently designed to hinder the escape of fluid until

Supplement to Brit. Med. Jour. Aug. 91. p. 38.

British Medical Journal. Jan. 2. 92

Vide "Landois & Stirling. op cit p. 261

Leptones & Nutrition. B.M.J. July. 20. 1889
p. 137

the cells of the tubules had re-absorbed the albumen. The beautiful & careful experiments of Prosser & and Ribbert disposing of this theory are most conclusive.

Heidenhain's researches will modify our physiology considerably - they impress on us that the vital activity of protoplasm must be considered in explaining physiological and pathological processes, many of which have hitherto been regarded as purely physical phenomena.

"As physiology advances it has become more and more abundantly clear that purely physical causes will not account for vital ~~phenomena~~ problems. (Heidenhain)

The purely physical "endosmosis, diffusion and filtration" do not fully explain the process of absorption of digested food in the intestinal canal.

It is not merely an organic membrane we have to deal with comparable to the parchment of a dialyser, but the activity of its lining epithelium must be regarded and

His lymphagoques are simply mutants with different affinities - they may paralyse one tissue while they stimulate another - the flow of lymph will be from the "stimulated" towards "the paralysed"?

recognised.

There is "Vital absorption" and "regeneration" of peptones in their passage through the intestinal wall, i.e. the peptone is transformed by these cells into - it is presumed Serum Albumene

Purely physical causes have never accounted for the phenomena of dropsy. Heidenhain's researches on the formation of lymph, may help to shed light on this subject. "Blood Lymph" and "Tissue Lymph" are distinguished by him, and those substances which he has found to increase the flow of lymph, he designates "Lymphagogues"

"We must conclude that this lymph can no longer be regarded as a mere filtrate from the blood, nor can the capillary wall be regarded as a mere passive filter, and for the formation of lymph other forces are in action besides the filtration of fluid through a pervious membrane" "Lymph then is to be regarded

Lauder Brunton op. cit. p 374

as a secretion formed by the activity of cells of the capillary wall" (Starlingham)

But the anatomical structure of a glomerulus — the comparative size of its afferent and efferent vessels are strongly suggestive of filtration under pressure

Ludwig and his pupils have shown that the amount of urine depends on the difference of pressure in the glomerulus and the tubules. If the pressure in the tubules be increased the quantity of water is diminished even with a high blood pressure — obstruction of the renal vein produces the same effect, the venous plexus surrounding a tubule becoming congested exercises pressure on the tubule and prevents the flow of urine through it.

Filtration is a modification of the physical process known as diffusion

Graham divided substances into two classes — Crystalloids + Colloids — the former class being easily diffusible — the latter with great difficulty or hardly at all

Disorders of Digestion : Oslander Brunton.
p. 317.

Laudon & Stirling op. cit. p. 464.

Manual of Pathology. Os Coats. 2nd Edn p. 6

Naube has shown that the molecular weight plays an important part in this process.

Haemoglobin - a crystalline body is not a crystalloid. it has an enormous molecule judging from its chemical formula

$C_{1200} H_{960} N_{154} Fe_2 S_6 O_{254}$ - (Peyer)
a "giant molecule" - so large that it will not pass through the pores of a membrane.

White of egg, when injected under the skin, appears in the prints. white serum albumen is effectually prevented in passing through the glomerular epithelium. The chief protein of white of egg is vitelline - a diffusible albuminoid.

Here again some explanation is necessary. John Hunter's experiment showing how a fresh or living egg with - stood freezing, considerably longer than an egg already killed by freezing is very interesting. When put into a freezing mixture its temperature falls to $29\frac{1}{2}^{\circ} F$ - as does that of living animals without freezing, and it takes resistance 25 minutes longer than the already "dead" one, and before congealing the temperature rises to $32^{\circ} F$ - the freezing point.

Lauder Brunton . B.M.J. June. 8. 1869. p. 1278.

Laudois & Stirling of et p. 462

living protoplasm differs from dead albumen, its molecule must differ.

"The highly organized protoplasm which forms the physical basis of life has, in all probability a most complicated chemical structure, and Flüger supposes that the relation which the size of a protoplasmic molecule bears to that of an ordinary chemical molecule is like that of the sun to the smallest meteor. We do not know how this gigantic molecule is built up, but we are learning something about its component parts by a study of the substances it yields when decomposed. Among these products of decomposition we find various acids containing Carbon, and compounds in which Nitrogen plays an important part."

The formula of Egg albumen is given by Bunge as $C_{204} H_{332} N_{25} O_{66} S_2$, and unboiled white of egg is the typical protoid - this formula I take it represents the "dead" albumen as distinguished from the "living" albumen of the fresh egg. There must be a molecular difference between them the molecule, or the arrangement of molecules.

W. J. A. Broun. Coonau lectures.

British Med. Journal. p. 1278. June 8. 1889.
"Evolution of Elements" - "Evolution of organic matter."

(*) An inflammation of the blood?

of the "living" will be much more complicated than the simple molecule of egg albumen. A step higher in the ladder of evolution leading from the simple atom to protoplasm. Will not the serum albumen²¹ and globulin of the circulating blood, ~~not~~ be a step higher than those same substances as recognised by the chemist in his laboratory. As they occur in the blood we can hardly call Serum-Albumen and Serum-globulin ~~as~~ chemical compounds, and represent their chemical composition by a formula. but it may be conceived as possible that such bodies ~~may~~ ^{may} be formed ~~in~~ ⁱⁿ the circulating blood - if some chemical agent with strong affinity were to enter into chemical combination with the circulating "albuminoids" of the blood and degrade them, depriving them of their vitality²² - to the rank of a "chemical compound" - or such a "compound" may be formed in the intestinal canal, and through some defect in the apparatus of intestinal absorption - in the intestinal epithelium or liver - may not attain the more perfect state of the circulating

Counting of Squames associated with *Hemicarionia*
+ *Diactaria*. W. R. Kirt. B.M.J. Apr. 19. 1890 p. 903

Landouls + Staling. op. cit. p. 464. § 249. The annual prozoids
+ their characters.

Lander Brunton. Pharmacology. Materia Medica
+ Therapeutics 1885 p. 144.

albuminoid - may pass through the body as a chemical compound: a state of *Htero-albuminaemia* leading to albuminuria, and, comparable to the albuminuria produced by the injection of Vitelline or Egg albumen under the skin.

How can we otherwise account for Bence Jones - Albuminuria. Septoruria. Stercialbumosuria - a condition which Dr. Kirk of Portland believes to be not uncommon?

How can we account for our so called Physiological or functional albuminurias?

How far is the albuminuria occurring in Pneumonia the result of a *Htero-albuminaemia*?

We recognise Acid Albumins, Alkali Albumins (Albuminates) - definite chemical combinations in which the physical & chemical characters: e.g. diffusibility & coagulability are altered.

There exists an analogous compound consisting of an albumin united chemically with an alkaloid, with altered chemical and physical properties corresponding - resembling however more the acid combinations than the alkali combinations (so that in this instance the term alkaloid is a

British Medical Journal . Aug. 24. 89. p. 423.

F.W. Pavy, M.D. Brit. Med. Jour. Aug 24. 89. p. 418

unusually) these albuminates are not coagulable by heat -

Their chemical structure is identical; the acid alkali or alkaloid combining directly with the albumen or protoid

D. Saunders is convinced that small quantities of albumen escape detection by the Nitric Acid test - an organic acid being far more reliable and he prefers dilute acetic acid.

"Chemistry has shown that several modifications of albumen exist; and the number has been an increasing one with the recent ^{cases} ~~advances~~ ^{met with in renal disease} made by research. The usual form is serum albumen which is precipitable by mineral and not by organic acids - In cyclic albuminuria, on the other hand, my experience leads me to say that it is the rule instead of the exception for the addition of an organic acid to be followed by the production of a precipitate. What is usually in this class of case is that two kinds of albuminous matter are present - one of which, like alkali-albumen and mucin is precipitated by an organic acid - and the other which corresponds

B.M.J. (Staig) vol. 90 p 64.

to serum albumen "

These organic acids may act by decomposing an alkaloid albuminate combining to form a soluble salt with the alkaloid, and liberating the albumen

That theory known as

Professor Semmola's (of Naples) is a most interesting one. — Stöckvis has ably refuted it — (he says) but it seems right in principle, and is so original that it deserves more attention than it has received. It may contain a germ of truth. He takes as the first stage of the process a *stefro-albuminaemia* ~ or the presence of a foreign albumen in the ~~white~~ blood, produced according to him by deficient skin activity and in other ways — the passage of this foreign albumen causes irritation of the glomerular epithelium and this defect allows the escape of the albuminoids normally present in the blood. When the condition is experimentally produced, the damage to the renal epithelium is indicated by a continuance of the secondary albuminuria of blood albuminoids when the primary cause is no longer in operation

Ind. Med. Jour. vol 2. 90 pp. 197/201

B. Mj. Aug 24. 89. Prof. W. J. Gardner M.D. p. 422
B. Mj. Aug. 24. 89. p. 419. Dr Geo. Johnson

The diffusibility of Serum-albumin and Serum-globulin D Noël Patou has shown varies with the pressure. Serum albumin, under high pressure diffusing more rapidly than Serum Globulin, while with a low pressure the latter diffuses most quickly. also That Svanborg's observation is correct: that both proteids are present in all cases of albuminuria.

The amount of these albumens varies - a variation depending on the stage of the disease, primarily due to the composition of the blood - a diurnal variation, in their relative amounts due to changes in the Blood pressure

By his experiments he also shows, that the statement - that paraglobulin indicates a functional albuminuria - and serum albumin organic disease of the kidney - is incorrect

Albuminuria in practical obstetrics as well as in the practice of medicine ought to be regarded as a "Danger Signal"

Dr George Johnson regards albuminuria as being always pathological - considering a saturated solution of Picric acid - the test

D. Noil Salom. loc. cit

introduced by D Kirk - as being most reliable
It causes no opalescence in normal urine
and if opalescence is produced and withstands
and increases on the application of heat albumen
is certainly indicated

In pregnancy pressure on the renal vein is
undoubtedly a factor in the production of albuminuria
as has been explained. If long continued such
obstruction by causing a constant congestion
produces a form of cirrhosis of the kidney
similar to the pathological condition of the lungs
known as "brown induration" due to an
increase of connective tissue

Impeded respiration during a fit would produce
this same condition of congestion or
aggravate it if already existing

Increased arterial tension would also sometimes
appear to play a part as in the cases
referred to of D J. D. Macfarren & D. Frelaud Borbon
the three chief factors to be recognized in its production

are I Changes in the filtering apparatus of the kidney

II Changes in the composition of the blood

III Changes in the blood pressure.

As to the poison producing Puerperal Eclampsia, the theory that it is a ptomaine has been put forward.

Animal alkaloids, and other allied bodies play a very important rôle in the genesis of many forms of disease. As yet we know comparatively little of these - they have been designated the unknown quantities - the X. Y. Z's of Pathology. An alkaloid is an organic body, which forms salts with acids, resembling an alkali in its chemical relations and bearings.

Many of the vegetable alkaloids have been for some time familiarly known to us, but the discovery of similar bodies in the animal tissues resulting from the decomposition ^{of albuminoids}, or activity of their protoplasm has given this class a new interest and importance.

For all practical purposes the intestinal canal is outside the body, and the bacteria which abound there produce ptomaines by decomposing albuminoid matters.

The intestinal canal - so far as the processes going on there are concerned - is still in great measure - a terra incognita - and the fact that ~~clinical~~

Sir William Aitken Knt. M.D. LL.D. F.R.S. on the
"Animal alkaloids" H.K. Lewis. 1889.

Aitken p. 5/6 p. 8.

Lauder Brunton. Therapeutics &c. of cat. p. 101
3rd Edit.

alkaloidal poisons are there produced, is now beginning to be clinically recognised.

The alkaloids produced vary with the substances present and the agents acting on those substances. A poison resembling Muscarine has been obtained from decomposing fish: decomposing sausages have given rise to the symptoms of atropine poisoning and a crystalline body resembling atropine in appearance has been obtained by the chemist.

If such a source of poisoning be admitted, the acute and chronic forms will differ in their symptoms: in the chronic forms a condition of tolerance may be established: or like some of the vegetable alkaloids they will have a cumulative action.

To Bouchard we are indebted for many interesting facts regarding these bodies: from healthy human faeces he has obtained a substance by dialysis which produces violent convulsions in rabbits and he believes that Mænicia is due to the absorption of alkaloids from the intestinal canal.

"Bacteria + their products." Dr. Sims Woodhead p 363.

(Walter Scott. London + Newcastle on Tyne.)

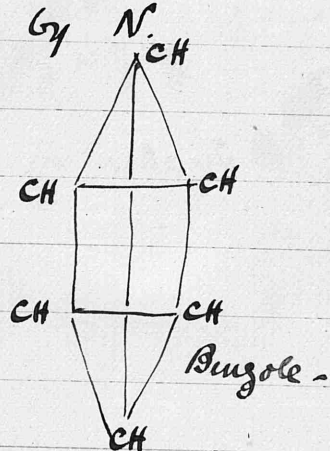
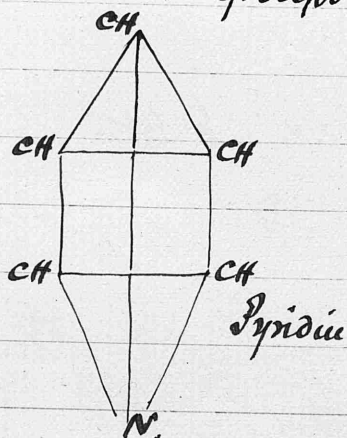
The difference between "muscarine", "atropine" + "pyridine" of the animal alkaloidal series seems to be one of degree of oxidation - "animal alkaloids are more unstable than those of vegetable origin

The Croonian lectures on the relationship between chemical structure and physiological action. BMJ, June 8, 1889 et seq.

In fact he gives diagrams showing "evolution" of Benzine'

Many such alkaloids have been described, and their chemical constitution and construction represented by formulae. As a rule they appear to be of a simpler type than those of vegetable origin, still their formulae are exceedingly complicated.

Some appear to be constructed on a pyridine skeleton a unsaturated alkaloid having a near relationship to Benzole, differing from it in that one of the CH groups is replaced by N.



Both these alkaloids are non-saturated, and their affinities may be satisfied in so many ways that an endless number of organic bodies, having the same skeleton, may be formed, and D'Gauder Bruntore makes out a relationship between chemical structure and Physiological action.

An interesting point, of chemical relationship, helping to bring the Carbonate of ammonia theory of Fries into touch with this Ploumme theory, is the relation-

A.C. Farquharson. M.D. (Glasgow) on

Quinine & other animal alkaloids. 1892. p. 12

John Wright & Co. Bristol

Veronal of al. p. 366 (Vomil)

Dialize on continued fevers p. 114.

of al. p. 28 et seq.

-ship of Ammonia to the alkaloids, which has been clearly made out in those of vegetable origin, and is assumed in the case of those of animal origin.

In certain diseases a distinct ammoniacal odour is perceived, due it is held to the presence of these bodies. In Mænuie patients the breath & vomit smells of ammonia, and with the glass rod moistened with Hydrochloric acid chemical evidence of its presence is obtained.

Murchison notes an odour of ammonia in Typhus and "it has also been observed that the cases in which the odour is strongest communicate typhus more readily to persons in health, and in many cases where the symptoms of typhus have supervened immediately on exposure to the source of contagion, and where we may suppose the poison to have been unusually concentrated, the affected persons have been conscious at the time of exposure, of a most disagreeable odour pungent and ammoniacal." Dr William Aitken contends in favour of a 'de novo' origin of Typhus - that a similar or identical condition may arise from animal alkaloidal poison, the result of over-fatigue &c.

In William Aiskew. of cit p. 33.

D. Sims Woodhead. of cit p. 363.
(1891)

* My sympathies are entirely with Breiger

Saunders on Bright's Disease of cit. p. 159.

ammoniacal compounds form the poisonous element in illventilated rooms. as poisoning with Sewer Gas: — exhaled with the breath or as a result of decomposition of nitrogenous matter.

These ammoniacal compounds have relation with the cyanogen compounds — which also are derivatives of Ammonia.

"Houmaures" are formed in the intestinal canal.

"Leucomaines" in the body by the activity of the protoplasm.

Bruer of Berlin has disputed the production of

* "Leucomaines" — holding that the alkaloids so called are "Houmaures" absorbed from the bowel.

In considering the aetiology of Purpural Eclampsia we attach rightly great importance to the hampering and hindering of renal function, by pressure, especially in primiparae where the anatomical conditions favour this.

Should we not attach also great importance to the condition of the intestinal canal?

Constipation is common in pregnancy, and is also noted as part of the clinical history of Bright's Disease

Lauder Brunson "Disorders of Digestion" p. 240.

Outlines of Infectious Diseases. James W. Allen p. 73.
London. J. & A. Churchill 1886

Notes on p. 70. Treatment of Scarlet fever.

Diseases of the Kidneys &c &c. Edited by Dr. Raef
Carroll Year Book '89 p. 80. Summary of
Dr. Carlos Bradshaw's lecture on Uræmia

alkaloidal poisons, the lower down in the intestinal canal they are produced are the more poisonous - may we not infer that the longer retained - the fæces - they will become more poisonous.

In the treatment of Scarlet Fever the importance of preventing overloading of the lower bowel, urged by the late Dr. Mahomed to prevent that ~~nephritis~~ which is an aggravation of that nephritis which is part of the disease is now universally recognised - the same end is in view in the strict milk diet.

"It is worth mentioning that Laccoud insists ~~on~~ upon the great value of milk diet in Scarlet fever as a preventive of nephritis" (of Scarlatina)

"The diminishing of the poisonous products reabsorbed from the intestine can be effected ~~as~~ ~~an~~ indirectly by diet; for if a healthy man be fed for a given length of time on an ordinary mixed diet, and then for an equal length of time on milk alone, the urine of the second period is much less poisonous to animals than the first" If this strict dietary cannot be carried out recourse must be had to the use of antiseptics and the inhalation of oxygen - Carter recommending the administration of ten litres of the gas daily

Dr Ashley Greswell. Cassells Year Book. 89. p. 132.

Dr William Aetken of cit. p. 19.

Aetken p. 52.

The oxygen may be given in solution, being now easily obtainable in Glasgow in Syphons.

This treatment is used to prevent the tendency to albuminuria.

The relation of these alkaloidal bodies to the question of temperature is interesting, remembering the assumed distinction of eclampsia from uraemia by its temperature course.

It is held that Hypo-thermia results from animal alkaloid poisoning: Hyperthermia from poisoning by extractives.

These statements are certainly open to question. For in atrophic poisoning we have a rise of temperature - and the animal alkaloid mydalin described by Brieger has a similar action.

Increased temperature means increased Katabolism and as a result "extractives" are formed - a consequence, as is also the pyrexia of this increased morbid tissue change.

These animal alkaloids, would sometimes appear to influence the course of other diseases, than those directly due to them. Everyone has confirmed the observation of Lauder Brunton as to the beneficial effect of

See also Cassell's Year Book. 1890. p. 25. "Sterile doses of
calomel in pneumonia" Dr Strong! of New York
Vide also Broadbent B.M.J. Oct. 11. 90. p. 781

Dr. William Aitken of Cal p. 57.

Lauder Brunton: Disorders of digestion. p. 290

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p. 285

a purgative in the course of a Pneumonia, and in practice I have now dared to give a calomel purge, which had a decided influence for good in a most unpromising case of Enteric fever. (2nd Week)

"Most of the aescaloids which have been obtained by the decomposition of albumen appear to belong to the leucomaines² of the "muscarine" type,²² and to have a tendency to cause diarrhoea; but some appear to belong to the "atropine" type, which to a certain extent counteracts the effects due to muscarine."

Bouchard suggests instead of the term "maemia" the new one of "Stercoraemia," on account of its production, in his opinion, by the absorption of aescaloids from the intestine.

"Leprieux and Mollere describe a case of a man with intestinal constriction who suddenly became ill and died in two days with all the symptoms of atropine poisoning, redness of the skin, delirium, dryness of the throat, extreme dilatation of the pupils with loss of reaction to light, and rise of temperature"

D^r Brunsdon gives a case from his own experience "A case of maemia which I saw

a few days ago was strongly suggestive of poisoning by a mixture of atropine and muscarine. The secretion of urine had completely stopped, the skin, eyes, and mouth were all dry, the pupil was somewhat dilated, the pulse was beating at the rate of about 130, the mouth held constantly open and the breathing was laboured and gasping, but air entered abundantly into the lungs and there was no secretion of bronchial mucus. All these are symptoms such as we find from poisoning by atropine, but in two respects the symptoms resembled those produced by muscarine for the skin was pale instead of being scarlet as in Belladonna poisoning, and cotton cups were applied over the regions of the kidneys in order to restore if possible the renal secretion, very little blood flowed from the incisions."

In a case of intestinal obstruction, in which the absence of vomiting, the character of the abdominal swelling, and the quantity of fluid it was possible to inject 'per anum' - all guided me to a

diagnosis of obstruction low down, about the sigmoid flexure. The appearances were similar to the case of obstruction just described, the red flush involving principally the face and neck.

The ordinary methods of the physician proving of no avail Mr. Rutherford Morrison F.R.S. Eng., my senior principal, was asked to see the case.

From the appearance he at once gave a doubtful prognosis - saying that the flushed face &c indicated a condition of vaso-motor paralysis, and that he was afraid the woman would not recover.

As Belladonna had been used in this case I suggested that, as a cause; but he said he had seen the condition frequently, when not a grain of Belladonna had been used in the treatment.

He performed left inguinal colotomy, and a large amount of bad smelling limpy and liquid faeces came away.

The patient sank rapidly and died in a few hours.

Post-mortem examination showed no organic

cause of obstruction, but indicated that a volvulus had been relieved by the operation. The whole of the lower bowel presented a condition of fatty degeneration, which also affected the small intestine & the stomach and other organs. Many other facts I have observed clinically and noted in reading have made me favour an alkaloidal pathology for puerperal eclampsia.

I by no means hold that any one alkaloid produces the disease, for the alkaloids generated in the intestinal canal may be many and various, and by one antagonising another as well as by the action of leucamines, extractives &c the symptoms of their action may be modified variously.

Still I think I can best illustrate my hypothesis by stating - that in puerperal eclampsia we have a condition resembling in many points, and analagous to atropine poisoning

The following may be put forward in support of this idea. Working from therapeutics to Pathology:- All the medicinal measures used in

Lauder Brunton op ed. (Therapeutics &c) p. 437.

"Antagonistic action of Drugs. Table showing
most important examples)

do.

p. 132.

Lauder Brunton Therapeutics p. 717.

p 716.

the treatment of Puerperal Eclampsia, with success have an antagonistic action to atropine or are recommended as useful in atropine poisoning.

Atropine, on the nervous system, has a similar action to strychnine, and Dr Jackson's suggestion that strychnine enters into a combination with the living protoplasm has been already referred to. The fits in eclampsia, are due to a "discharging lesion" located according to Dr Jackson's theory, to the motor region, and the rise of temperature, according to Hale White is in favour of this location. The poison would seem to have an action here.

Hydrate of Chloral has quite an opposite action on the brain, producing sleep. "The pupil is almost invariably contracted, the temperature falls steadily and rapidly, and this fall appears to be due partly though not entirely to lessened production of heat for it still occurs though to a less extent when the animal is wrapped up in cotton wool, or is put in a warm place", Chloral has also an antiseptic action, and lowers arterial tension.

Professor Lushman op. cit. p. 774/5.

Woods Therapeutics p. 215. (1888)

Keali Medical Digest. Sect. 376-4 p. 210
1891.

Brunton's Therapeutics p. 717.

do do p. 156.

It has been very strongly recommended in the treatment of Convulsive disorders of puerperium and childhood, and in Tetanus.

"The sedative and narcotic effects of this drug are well known, but it is not so generally understood that when it is pushed further it produces an anaesthetic effect, under the influence of which a woman may be delivered without experiencing the slightest suffering. We can without hesitation corroborate much that has been advanced of late in regard to the marvellous effects of this drug in the treatment of convulsive diseases"

Atropine, affects heat production, causing a rise of temperature - The increased heat production Dr Wood who is an advocate of a nervous theory of puerperia refers to the influence of the drug on the nervous centres. A temperature of $110^{\circ} F$ has been registered in Belladonna poisoning.

When large doses of chloral are given "the temperature gradually falls until it can no longer be measured by an ordinary clinical thermometer"

Bromide of Potash diminishes the excitability of motor centres, so that convulsions cannot be produced

Purpura Eclampsia. Bnt. Med. Jour. 91. vol 2
p. 987.

Maternal Medica & Therapeutics. 3rd Ed. p. 334

Guy & Jones. Forensic Medicine. p. 520.

Renshaw London 81.

Parsons of. cit. p. 253.

by irritation of the cortex, in experiments with dogs (Albertoni). Small doses of atropine increase the excitability of these centres and convulsions are easily produced; and by an alkaloid of this type and in the proper dose the condition known as the "convulsibility of ~~freq~~ frequency" might be produced, or exaggerated.

On this theory we might explain the high arterial tension factor so ably advocated by D Barnes.

Atropine in not too large doses has a powerful action on the Circulation, acting as a stimulant to the Vasomotor centre. Whittle says "the heart becomes excited and the vascular system stimulated (standing 12 feet from a patient the writer has heard the heart sounds)" - "the arterial system is tension is at first raised, but large doses paralyse the vasomotor centre."

Arabic pulse occurs in Buladonia poisoning.
"in Eclampsia the pulse varies from 100 to 140 and even this last number may be exceeded"

This condition of the circulation is the foundation of some of the therapeutic agents used in the

Uterine Crises in Puerperal eclampsia. (Jewett)
Cassell's Year Book of Treatment. 89. p. 262.
also Parvix p. 261.

Cassell's Year Book. /⁸⁹~~90~~ Carter p. 81. /90 McKenzie. p 94.
Parvix p 261.

of Al. p 757.
Manchester Medical Chronicle, July 1892. p 263.
Abel Gendy "On a pathological cause of Puerperal Eclampsia"
Kallmeyer "On the etiology of Puerperal Eclampsia"
Centralblatt f. Gynäkologie. May 21. 1892

treatment of Eclampsia - Punctions. Such drugs as Veratrum, Aconite, Antimony, Morphine, Antipyrine, Calomel may all have an action in this way. One writer recommending veratrum viride says: "experience has shown that no convulsion will occur if the system is sufficiently under the drug to hold the pulse under sixty per minute."

Morphine has an antagonistic action to atropine but not to a lethal dose of this alkaloid, but it is contraindicated therefore if there have already been a number of convulsions, and if there is ^{deep} coma. It has been used in Mæmnia with good effect by McKenzie of London. and American physicians use it in heroic doses.

Dr Osler speaking of its use in mæmnia says "I have ~~used~~ ^{used} this remedy extensively and can speak of its great value in such cases."

Kaltenbach and Girdes experimenting with cultures of their "Eclampsia Bacillus," get confirmatory results. "In rare cases the respiration became slow, and death occurred after 9 to 20 hours. Girdes then found that by preliminary injection of a sufficient dose of morphia, the life of the animal could be rescued from the effects of an otherwise fatal dose of the bacillus."

Lauder Brunton Therapeutics &c. p. 905

Handbook of Therapeutics. by Sydney Reiger M.D.
12th Edn. 1888. Lewis London

British Medical Journal. Vol. 2. 91. p. 682.

Atropine has been shown to have a powerful action on glandular structures, affecting the salivary glands, the sweat glands, the mucous glands, the pancreas and liver, and in his lectures on physiology Dr. McEldrick mentioned that atropine administered to animals produced albuminuria, indicating he thought a paralysing action on the renal cells. Bruntton explains this action by a paralysis of secreting fibres, but Ringer points out "that the atropia may possibly act directly on the gland cells, this hypothesis explaining the fore-going facts as satisfactorily as does the assumption of the existence of secretory fibres"

Dr. Auvard's (of Paris) theory is that "Eclampsia is obviously the result of a strike on the part of the organs of elimination, a cessation of function which may be restricted to one of them — the kidneys or the liver for example — hence the frequency of jaundice and albuminuria in association with this malady; or it may involve the entire apparatus of elimination"

Laudois + Stirling of cit p. 324.

Lauder Brunton. BMJ. 89. vol 2 p. 66.
also figures on pages 68 + 69.

Laudois + Stirling. of cit p 315

Dr Lushman of cit p. 260 p 773

Cassels Year Book. 89 p. 81.

But the liver has other functions than elimination, all the blood practically from the intestinal canal bearing the products of intestinal and gastric digestion, must pass through it.

It has the power of arresting, storing up, or destroying poisonous & vegetable alkaloids, these organic poisons are rendered inert by combining with Glycogen. and as milk will quickly supply this, it is preferable to But-ter in "laëmic" poisoning - for but-ter simply increases the poison and forms no Glycogen.

The appearance of the hepatic cells differs in the resting period and when they are busy. atropine and lead-acetate have the power of inhibiting the signs of activity - the antagonists of atropine, muscarine and pilocarpine produce quite the opposite effect, producing the appearance of activity even in a fasting animal. Salicylate and Benzoate of Soda act like pilocarpine but not so markedly.

Furichs recommended the use of Benzoic Acid, to neutralise the carbonate of ammonia, and Benzoate of Soda has been found of service in the treatment

Lauder Brunton. BMJ. 89. Vol. ii p. 69.

British Medical Journal Supplement. Sep 17. 92
p. 117. Injections of Strychnine in Cholera.

French. Mallet

See also Wood p. 755.

Woods Therapeutics p. 751

(3ii)

of uræmia; two drachms being given in the twenty-four hours - by the mouth or enema.

"The latest development of Pharmacology is the Pharmacology of the cell" - and the antagonistic action of drugs is probable in other secreting or eliminating organs than the liver.

The treatment of cholera by injections of strychnine was during the last epidemic proved to be useful, but when the renal secretion was not thus re-established. pilocarpine injected hypodermically had the desired good effect - "water being passed within five minutes after the use of the syringe"

It is more than probable that a "strike" on the part of the organs of elimination, one or more, might be brought about by an alkaloid of the atropine type, not only within eliminating but their other functions also.

Pilocarpine has quite an opposite physiological action to atropine affecting the cells of the salivary glands, and causing increased secretion of all the glandular organs of the body.

B.M.J. Feb. 1890. p. 420 ~ Wood. p. 755/6 of cit-

Lancet of cit p 261.

B. Med. Jour. Vol 2. 92. p. 681. Acute of puerperal eclam

Pilocarpine has proved useful in Belladonna poisoning, and is useful in the treatment of Puerperal Eclampsia. In a recently recorded case its action was very marked: other measures had already been tried unsuccessfully. "Pilocarpine $\frac{gr}{15}$ was injected into the arm and as the temperature was $103^{\circ} F$, the uterus was cautiously washed out with weak Condy's fluid. The effect of pilocarpine on the heart was very noticeable recalling to mind the pulse and heart-sounds at the termination of a fatal case of diphtheria. She had no convulsions after the administration of pilocarpine."

The first organ, however to strike, in my opinion is the rectum. Constipation is common in pregnancy, and may be either a cause of, or the consequence of, indigestion; in many cases it is the result of carelessness.

A "habit" is soon formed, for these alkaloids soon produce an atonic state of the involuntary muscular fibre, and will have

See Dr Coak on Diseases of the Placenta
Manual of Pathology. 2nd Edit.

no good effect on the epithelial cells, which as we have noted have important functions to perform.

If an alkaloid like atropine be absorbed, the liver suffers first, and if the "glycogen compound" is doled out all the other tissues and organs will suffer in their nutrition; the kidney may, or may not, be able to eliminate the poison, and albuminuria may indicate a paralysing effect on the glomerular epithelium.

The placenta is a temporary organ of secretion and elimination, and its tissues are more liable to degeneration than the tissues of the mother, resembling in this respect some of the cancers. Disease of the placenta is often associated with albuminuria, and I think both are due to a common cause. Did the child produce the poison, the placenta would suffer from much more marked and extensive

Gooch on Disorders of the Mind of Lying in women
Diseases of Women & Children. New Syd Soc. 1859
p. 61

p. 71

p. 81. 82.

Dr A. C. Farquharson. "Hysteria" - Clinical Chapter
Wright Bristol. 1892. p. 99 et seq.

degeneration than it usually presents in such cases, for there may be very little

Suprenal mania is also frequently associated with albuminuria, and I was struck in reading over Koch's lectures with his remarks as to prognosis of that form accompanied with a very rapid pulse, and fever

Among the causes he notes a disordered state of digestion.

In Case E. X. the condition followed Eclampsia. He recommends among other things purgatives to "evacuate gastric and intestinal impurities", and opium as a narcotic.

Modern asylum physicians now recognise on a "floumaigne theory" the importance of emptying the lower bowel regularly and the use of intestinal antiseptics.

Fifty years ago the idea was - that the conditions now thus treated were due to "functional disorders of the digestive apparatus" or to the agency of a poisonous secretion on the

Basel Year Book. 1892. p. 365. Josef Suits

M.S.S. Notes

intestinal nerves.

So we need not be surprised that calomel, which has both a purgative and antiseptic action, and directly or indirectly lowers arterial tension has been recommended and used with success.

In the case referred to "the treatment consisted of "heroic" doses of calomel; 61 grains being given to a young girl of 19 years in the ninth month of pregnancy. "With the onset of diarrhoea the convulsions began to lessen, and complete recovery ensued."

Will the reader, which when necessary we find so useful, not have a somewhat similar action?

Calomel in a large dose I have found useful in infantile diarrhoea. O'Sullivan in his lectures on Diseases of children carefully pointed out that large doses had a sedative effect. An old country practitioner, that I know of treats such cases with one grain of calomel every hour for three or four hours followed immediately by a dose of Castor oil. So in this condition of loaded rectum the

Cassell's Year Book. 1892 p. 368.

Enhardt and Favre

* Bmj. suppl. Jan 17, 1891. p 18.

use of Belladonna—combined with Nux Vomica and with aloes or Cascara—might prove of much service.

I have hinted—forming my opinion from the action of opium, antipyrin, or quinine in cases of "false pains"—that these may be the result of a toxæmia. But can the same poison acting on the non-pregnant woman play any part in the production of the crampish pain of dysmenorrhœa.

It has been pointed out that placental disease in the pregnant state is preceded by symptoms of endometritis, colic pains and leucorrhœa. (and as usual associated with albuminuria of pregnancy; in twenty cases of albuminuria the placenta was diseased in nineteen)

But if the paralysing action of an alkaloid on intestinal epithelium cells and
* on hepatic cells be admitted, it is not difficult to see that the microorganisms may get into the circulation, and be excreted by the kidney, and found in the urine; or finding their way to the uterine

Galabius . BMJ. Sept 26. 1891. p. 679.

P.M. at Glasgow maternity.

mucous membrane form colonies there, the conditions being favourable to their growth.

In frequency, the paralysed cells of the placenta, will form "a good soil."

From both those colonies the material organism might be reinfected, and cultivations of these bacteria or micrococci injected into dogs might produce the disease.

Blanc has found a bacillus in the urine of women suffering from eclampsia and experimentally produced the disease in pregnant rabbits.

Injections of the same culture into non-pregnant rabbits produced only local symptoms at the site of injection.

Rabbits have little susceptibility to the action of atropine: the action of this bacillus in the pregnant state is fatal to them.

In postmortem examination every tissue and organ is swarming with micro-cocci, and I have seen it stated - I forget where -

for a resume of the "germ theory" of Purpuric
Eclampsia. Vide Manchester Medical Chronicle
for July. 1892. p 260 et seq. (HMK. 20th vol)
Cassell's Year Book. 1892 p. 361.

Vide BMJ. 1890. Aug. 26. O'Hale white

" " " May 3^d. p 1041. Prof McAlister

that colonies of micrococci have been noted as occurring in the liver in eclamptic cases.

D. Blane has made experiments regarding the toxic power of the urine in pregnancy - it must be noted (1) that he uses the urine of "healthy" women during the later months of pregnancy (2) the test is made on rabbits, herbivorous animals, and the liver changes and poisons absorbed will differ widely from those in the dog - a carnivorous animal. His experiments are in no way unfavorable to the theory I advance.

With the cell as with the individual, it is not work that kills but worry, and to this we might compare the action of atropine on a secreting cell. The cause of death of the foetus is paralysis of the cells of the placenta, preventing cell-action by which nutrition and respiration are carried on, the poison being aided in its action by mechanical & chemical conditions, brought about during the fit; the high temperature is also an assigned cause, the higher heat centres are undeveloped, the child in utero being in this respect a "cold blooded animal," and prematurely born rational warmth is necessary to keep up a natural temperature.

Deficient skin activity occurs in Bright's disease; The pale face and anæmic condition are very characteristic. Atropine in small doses is a stimulant to the vaso-motor centre, and has a similar direct

action on the involuntary muscular fibre, so it might aid in this way in producing "the stopcock action" of the arterioles described by Dr. George Johnson. Bright's Disease is most common in a cold moist climate. We know little of the meteorological conditions as to how they affect the physiological processes going on in our bodies: how our bilious and rheumatic patients make such reliable barometers: how nervous headaches so frequently accompany a change of weather, some such people are miserable at the sea-side and are happy and comfortable in a high inland district. The east wind finds out everyone "who has a liver".

A bilious diathesis is described; dark complexion, black hair, skin thick and muddy with a large development of pigment, the eyes dark — a still more chronic form of "atropine-poisoning" than we say occurs in Purpural relapsiva. The pigmentary changes in frequency are more marked in people of this type. How many of our phthisical patients are of this type? The tubercular diathesis — "the good soil" is produced by this chronic poisoning paralysing the protoplasm of the cells concerned — diminishing their assistance "their digestive canal is the bane of their life" (Dothergiel) and the condition is hereditary — the vice of structure or function — the constipated habit — may all be handed down — a continuance of the same habits and customs, e.g. as

to eating and drinking keep it up. Gout is hereditary - the typical hereditary disease - there is ~~no~~ no doubt that diet customs have greatly to do in its production. Living on sixpence a day and working hard for it will cause the condition to disappear the cells on whose functional disorder it depends revert to their original state. One who practices in Scotland, will hardly

B.M.J. Vol. 11
1890. p. 1120.

entirely agree with Dr Haig this Uric Acid theory accounting thus for Eclampsia - there is an underlying cause common to both.

Ringer
Opal. p. 226.

Gout can be produced artificially by the use of lead salts, "Opal" In lead poisoning Epilepsy is not uncommon, and in its developing in the adult the possibility of lead poisoning should always be considered. An acute delirium may occur with hallucinations" (Coler op cit. p. 1010). He noted that the action of lead on the hepatic cells was similar to atropine. Again the renal cell - that "protoplasmic sieve" would easily allow of the passage of the comparatively simple uric acid molecule, while the continued action of a paralyzing agent would be very detrimental. Uric acid has perhaps an affinity for fibrous tissue, and is perhaps a cause of that hypertrophy of normally invisible supporting connective tissue, which is such a conspicuous ^{feature} in the chronic form of Bright's disease.

to distinguish between typical epileptiform and epileptic fits is as easy as to distinguish night from day — the difficulty is to draw the dividing line. Epilepsy in my opinion is a more chronic form of this same poisoning.

Chloroform affects the different parts of the nervous system in the inverse order of their evolution — atropine I have no doubt acts similarly. The most acute form of atropine poisoning; the two higher centres being paralysed is accompanied by "lowest level fits" which are induced by attempts to swallow (Lauder Brunton. Therapeutics p. 904) Why the convulsion is epileptic or epileptiform is unequal measure a question of dose — and of tolerance.

Comparing the brain to a double-barrelled gun — in the genuine epilepsy — the highest centre discharging calls the motor centres of the middle level into action simultaneously — both barrels go off at once — in the epileptiform the discharge is not simultaneous.

In the rapidly developing epileptiform ^{fit} of puerperal eclampsia — the signal symptom is usually referable to the face — the left half of the brain is the first part to discharge — and the fit is usually universal.

The epileptiform character is not so evident in the facial movements (explained I think by a consideration of Broadbent's Law. for which see Bristow's Medicine 5th ed. p. 933)

as on the movements of the trunk and limbs, when the action of the right-sterno-mastoid muscle so turns the face that it looks over the left shoulder — the action of the left comes into play later with an opposite ^{result} ~~action~~ and the deviation of the mouth to the left (Bailey) corresponds to the latter action. "Epileptic fits begin in the "animal" parts of the body and commonly in those which are most 'animal' or in other words "in those parts which have most voluntary uses; in those parts which have great independence of movement; in those parts which have the greater number of different and more special definite movements at the greater number of intervals." We will admit that for most individuals the left brain is the more animal; and though ungallant — but suggestive the movements related to the speech centre and the facial movements are the most animal in woman — or it may be explained by the anatomical relations, why the fit should begin there.

p 770. Dr. Jackson explains "that those centres of the motor region which especially represent small muscles (eyes face & hands) will have a greater number of small cells than those which especially represent the larger muscles of the limbs." It is easily understood how the nutrition of

Hughlings
Jackson
B.M.J.
Apr. 5. 90
p. 765.

such centres will be affected by the quantity or quality of the blood supply, and as Broadbent and Frainger Stewart suggest disturbance of the cerebral circulation may partly account for the fit - the "stopcock action" of the arterioles, caused by a poison circulating, aggravated at the time of and by a uterine contraction - a conservative effort to protect the brain - by coming into play suddenly might determine the onset of a fit an explanation suggested by Kusowaul & Sumner's experiments, and by the radical surgical treatment of Epilepsy recommended and practised by Dr Alexander of Liverpool, by removing the superior Cervical ganglion of the sympathetic.

Wood of cat
p. 216. The eye symptoms of puerperal albuminuria might be easily explained by this theory. We must distinguish carefully the local from the constitutional action of Atropine. Applied directly to the eye it paralyzes the accommodation and dilates the pupil acting by paralyzing the unstriated muscle (except in birds where the muscle is striped) and lowering intra-ocular tension, ~~on~~ a fact we make use of in the treatment of corneal ulcer - applying John Heston's old principle in ocular

Wood p. 218.

therapeutics - In amnesia - (which may be another manifestation of this same poisoning) - among the transient effects is a contraction and later on dilatation of one pupil - expressing primary excitation and later paralysis of the cervical sympathetics. Atropine has a central as well as a local action, and with the state of the cerebral cortex and the contracted state of the arterioles a contracted pupil before the full would be expected.

After the convulsion it is widely dilated.

Wood
h 204 The testimony of Heubner "that congestion of the retina is an almost characteristic lesion of atropine poisoning is very interesting when we call to mind the eye changes involving the retina in purpural albuminuria & Bright's disease where it may even be seen in the prealbuminuric stage

The occurrence of purpural relapsaria in plethoric individuals favours the "liver and intestinal pathology" as opposed to that first affecting the kidney.

McGindrey points out that this condition of Plethora is not one of health and is often associated with a gouty diathesis.

In conclusion thus note I that the form of

poisoning is chronic, usually such a dose as produced an explosive condition of the cell of the "middle level".

II The action of the poison is modified by chemical and mechanical conditions. (a) By variations in the blood pressure, explaining partly the onset of the fit, and the presence of albuminuria showing itself after a fit. (b) By the presence of carbonic oxide, which on the gastric mucous membrane has a similar but milder action than hydrocyanic acid. It may even show this action on the skin - discharging a siphon of aerated water has a local anaesthetic effect. (c) Oxygen would seem to aid the vitality of the protoplasm and keep it to resist the effect of the poison. (d) With the individual diminished blood pressure will be as detrimental as one too high. Will my illustration be allowed? The pressure of a tail has much affecting the blood supply to the scalp lets this same poisonous agent act at an advantage, interfering with the nutrition of the hair bulbs producing baldness. Laboraudi

is applied locally to antagonise it, and liberate the protoplasmic cells paralysed by it from its thralldom.

By the aiding action of Carbonic oxide I account for the increased elimination of urea after a fit - to the counteracting effect of oxygen I ascribe the improvement seen in phthisical patients during a pregnancy, when the lungs are so active - while after the birth that ill disease makes rapid progress.

As regards treatment - we must not expect too much of an antidotal ~~pathology~~ therapeutic system, great care and discretion is necessary.

We can overcome an itch and produce an Eczema!

According to J. J. we wreck our ship in charybdis -
Operative treatment must be prompt and decisive.
Dietetic measures - milk diet - intestinal

irradiation by Calomel - aided by Eucema, and
intestinal antiseptics - Inhalation of oxygen and
its administration in solution in preference to a

Carbonic water. Hygiene. Anaesthetics. Chloroform. Chloral
Morphine. Antipyrine. pilocarpine. Amyl Nitrite

Emetics will all be of use in what are considered
suitable cases. Diaphoretics &c &c

I recommend no routine of treatment for this condition. We must administer our drugs, as Opie mixed his coloms - "With brains"

A routine of treatment is foreign to the traditions of my Alma Mater - to think of which only brings echoes of voices - ringing in my ears, from the "chairs" in these old class rooms.

How often has the importance of "Pathology" been impressed upon us? "It is ^{surely} incumbent on every one who under-takes to cure disease to know something of its real nature"

How often has our worthy professor of Practice of Medicine from his rostrum or at the bed-side warned us against treating the "name" of a disease, and neglecting a real pathological condition?

The voice of one who is away - but who though dead yet speaks - instructing us "To remove the cause"; "Put the part at rest" "To compare corresponding parts" - many of us will never forget. Nor have sublime anatomical theories been without their practical lesson - "the ligamentous action of muscles passing over two

joint" is only a manifestation of Nature's Conservatism - "Arterio-capillary fibrosis" is an expression of the same fact. Nature always does the best she can under any circumstances.

From an embryological point of view, is that pathology rational which looks on the heart as other than a modified blood vessel? How can there be a purely Nervous theory of pyrexia, when the heat in health and disease can only be produced in the protoplasmic cells of various tissues of the body?

Let such simple, homely and sound advice, as has been referred to, always guide teacher and taught, and Glasgow University will have no cause to blush for her medical graduates

John Hilton's shout of "Rest!" ought to be re-echoed by the physician and by the surgeon, and be still more recognised in therapeutics than it is. Hilton's idea is not original - The Great Physician's prescription is "Come unto Me all ye that labour and are heavy laden and I will give you rest. Take My yoke upon you^{te} - a text with a deeper and more beautiful meaning than our English words imply, and a fitting foundation for every lecture on therapeutics

I have set forth these thoughts, convinced that this is the Pathology, not only of Eclampsia but of many ~~all~~ conditions. The principle can be elaborated indefinitely. ~~Let us~~

Inflammation is a poisoning of Protoplasm
Dr. Huxley's Jackson's "physiological fulminate" is a degeneration - the degree of inflammation is a matter of dose - this first or paralyzing action of a so called irritant is the starting point of our degenerations - the explanation of Diathesis, that expression of diminished resistance, the recognition of which is of so much importance clinically.

- There is a worm at the root of the tree - A slow battle is being fought, in which not only the individual but the race must succumb. Man may despise the microbe but it eventually will and always does master him in that fight. The physicians are leading a forlorn hope, let our motto be "Nil Desperandum". Let us always try to do our best. - "All flesh shall perish together, and man shall turn again unto dust." - our bodies are mortal - The Spirit returns to God who ~~gave it~~ gave it.

Case. No 1.

Periperal Eclampsia: Delivery: Fetal Termination.

This case which was seen by me in Sept. 1886 in the Calton district of Glasgow is vividly impressed on my memory.

I was still a junior student and had very crude notions of the Science of Obstetrics.

At the request of the house surgeon I watched the case for a night, and administered the anaesthetic. I remember neither name or address of the patient.

She was a stout, strong plethoric young woman, a primipara, and in the seventh month of her pregnancy. There were the usual antecedents, the dropsy, &c and probably albuminuria, but she was a maternity case and so the history was not known so well as it might have been, had the patient been known to, and under the care of a private practitioner.

For a day or two she had complained of headache and impairment of vision, but still endeavored to pursue her household duties, which were very light.

Her husband had left her in the morning, and had not thought anything of her condition, but coming home at mid-day was alarmed at the condition she then was in: she was found lying in an unconscious state on the floor, and occasionally in convulsions.

Assistance was sent for to the Maternity Hospital and in time she was delivered by Dr Malcolm Black assisted by Dr Conway, and the Resident Dr Richards, with all possible speed instrumentally under Chloroform.

Large doses of Chloral + Bromide were administered. Chloroform was administered when twitchings of the muscles showed a convulsion imminent.

Venesection was not carried out, she having lost a good deal of blood with the placenta.

Her circumstances + surroundings were very unfavorable.

Here for the first time I had the opportunity of just observing the Convulsions, the details of which were demonstrated by the House Surgeon. It was typical of the condition, agreeing with the description given by Dr Leishman, in whose text book I then, in connection

connection with this case. Studied the question
commencing with contractions of the facial muscles
and ^{of the muscles.} Eyeballs, & gradually involving the whole body, followed
by an anoxic condition, with widely dilated pupil
& stertorous breathing. Tonic contractions were
succeeded by violent clonic contractions, affecting the
whole body. There was complete loss of consciousness
from the first, and it was never regained, and
this state continued until death. The cornea
could be freely fingered and no contraction of
the eyelid occurred in response.
The temperature varied from 102°F to 106°F and
rose gradually as the case proceeded.

The urine was very scanty, of high specific
gravity, very dark coloured and loaded with
Albumen.

She died 36 hours after delivery.

Case II

Puerperal Eclampsia with history of previous attacks
Controlled by treatment. Easy labour 2 days a/g,

all? D. aet. 35. Multipara. 4th child. was seen
by me during '89 in private practice.

History of Eclampsia in previous labour two
years ago. a very neurotic emotional woman
of good birth and Education, in comfortable
circumstances.

She was in the ninth month of her
pregnancy, and had no marked premonitory
symptom except headache, and slight oedema
of the ankles. The urine contained $\frac{1}{3}$ albumen
and did also on the previous occasion.

D.D. whom I was assisting, was summoned to
attend her at 1 a.m. as convulsions had set in.

I saw her next morning at 8 a.m. she having
been under the influence of the anaesthetic, and
convulsions thus prevented all the night.

No chloroform had been given since 6 a.m. and
she was quite conscious, recognised and conversed with
her husband and the nurse, quite sensibly.

About 9 o'clock a typical epileptiform seizure

was induced by a digital examination. The patient not being under the influence of chloroform. This convulsion certainly was accompanied, and probably in some measure caused by a uterine contraction, distinct evidence of which could be felt by palpating the uterus.

The os uteri was dilated to the size of half a crown, but was very slightly affected by the uterine contractions.

Bromide of Potash (℥ 30) Hydrate of Chloral (℥ 20) were ordered in a mixture, and the chloroform administration was kept up whenever any twitching indicated a threatening convulsion, and thus any further attacks were effectually prevented. Towards evening she felt much better, complaining still of the headache. Antipyrine ℥ xij gave great relief.

Labour showing a no sign of commencing in earnest, and the symptoms so favorable, it was determined not to interfere, or hasten the process in any way. Potus imperialis was ordered and the amount of urinary secretion became normal. Her diet was restricted to milk, and other

measures were adopted with the object of saving the kidney as much as possible.

Bromide and chloral were now only given twice a day, at night & in the morning.

She was delivered of a healthy boy two days after, the labour lasting some 15 minutes and only the nurse being present.

On my arrival, she was suffering severely from after pains, which were immediately relieved by the removal of a clot from the uterus, using due antiseptic precautions.

A $\text{gr } \frac{1}{4}$ Morphia Suppository was introduced into the rectum, and the bandage firmly applied. She made a good recovery.

Case III

Purpural Eclampsia: Hypodermic injection of Morphia
Good Recovery.

Many M.G. Oct. 20. Principara. miscarried.

6 June St. S.S. Glasgow.

An out-door patient in the practice of the Glasgow Maternity Hospital, was attended by Mr. W. D. Rankine and another, Students (of Edinburgh Univ)
They found the woman suffering from severe pains, short & severe, and all at the lower part of the belly. The os uteri was a little dilated, and the rectum was full of faeces.

An enema of warm water with some soft soap was given, which besides effecting evacuation of the rectum, acted as a most decided stimulant to uterine action.

The head was still above the brim, and had not engaged, the anteroposterior diameter being somewhat encroached on by a slightly projecting promontory. The tibiae also gave indications of a rickety constitution. The os gradually dilated and the head engaged & made favorable

Progress. The first fit came on at 7.30 a.m. developing very suddenly, followed by a short period of unconsciousness. In about half an hour another fit occurred during which the child was born, but was dead.

A third convulsion succeeded in 45 minutes bringing away the placenta, and a large clot.

A fourth convulsion occurred about 10 a.m. and was as the others had been - a typical epileptiform convulsion.

Morphia Acetate $\text{gr} \frac{1}{2}$. (Bunroughs Wellcome & Coys tablets) was administered hypodermically and the following ordered

\mathcal{R} Chloroform $\text{℥} \text{iii}$

Potas Bromid $\text{℥} \text{i}$

Stychnin $\text{℥} \text{i}$

\mathcal{R} Camphorae ad $\text{℥} \text{ij}$ $\text{℥} \text{ss}$

Sig. A tablespoonful every 3 or 4 hours as required

There were no more fits. The Morphia was not again administered, and there were no threatnings of convulsion indicating the use of chloroform. Though the students remained with their patient in case this might be necessary

Glasgow Medical Journal, 89. Vol 1 p 231.

The highest temperature noted was $104^{\circ} F$.

The urine contained albumen, though the quantity was small. There was no oedema, impairment of vision, but the patient complained of headache during her labour.

Sept 14. Patient has had a good night; only a trace of albumen in the morning sample of urine.

Sept 15 Patient, not so well. had a bad night.

Rapid pulse, Temperature 100.5 .

Tenderness on pressure over uterus and little discharge, but smelling sweet.

Quinine $\frac{1}{2}$ dissolved in Hydrobromic Acid every 6 hours. Morphine Suppository $\frac{1}{2}$ introduced. Warm fomentations sprinkled with Laudanum applied to abdomen.

The breasts were treated with the local application of Belladonna, with support and pressure.

The relation of uterine contraction to convulsions suggests that one was cause, with the other as Effect. Dr. Malcolm Black has seen an attack of convulsions determined by the administration of a dose of Ergot.

This patient made a good recovery.

Case No. IV

base of Puerperal convulsions, instrumental delivery.
No convulsions after delivery. Good recovery.

M^r. D. aet. 35. 8th child, youngest 2½ years, miscarriage
5 years ago. was sent into the Glasgow Maternity
Hospital suffering from Puerperal Convulsions

She had suffered from dropsy for 3 months
and had been complaining of her sight failing
during the previous week, and also of headache.

Convulsions had set in suddenly whilst
sitting at her evening meal - the first fit
lasting 10 minutes; She had been sensible
only once since the onset of the
convulsions, shortly before leaving home for
the Hospital

On admission she was comatose,
having suffered from a convulsion in the
Ambulance Van on her way to the hospital
. P.V. examination showed the cervix soft and
patulous admitting only the point of the finger.

At 12.30 a.m. a fit came on, of the
typical epileptiform character. Chloroform was
administered, and the convulsions kept

in check by it - if given before they developed but if the patient was not under the influence of the anæsthetic and the fit got a fair start. the chloroform had absolutely no controlling power

She was kept more or less under the influence of the anæsthetic, until delivery in the morning at 8 a.m.

Dr Wm. L. Reid operated, using his own antio-posterior axis traction forceps, applying them after he had with the fingers successfully dilated the os to allow of their application

During the night warm fomentations of Digitalis leaves were made to the loins.

Dr Reid recommended if another fit occurred that a trial be made of Veratrum Viride the liquid extract in a dose of $\mathcal{M} \text{ iij}$, repeated hourly according to its effect on the pulse. it being stated, that there is no fear of convulsions with a pulse under 50, while if it were over 80, there is danger, amounting even to a certainty.

He said however that the membranes ought

x. D. Storr. in Glasgow Med. Journal. 187. p 232

to have been ruptured, as soon as possible

* Professor Lagau's dictum was "Empty the uterus
as fast as you can or as ^{much} ~~soon~~ as you can"

She made a good recovery.

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Shirley

Puerperal Convulsions at the 5th month. Death.

M^{rs} G. Kinghorn. Fife. aet 40. 3-para. youngest child 10 years old.

Hard working. neurotic, worrying woman, in the 5th month of pregnancy.

Complaining since the end of March '90 of being out of sorts, and dreading in anticipation her labour, as on both previous occasions delivery was instrumental on account of narrowing of the pelvic brim, necessitating the use of the long double curved forceps by D. Watson of West Wemyss Fife.

She was a woman who kept herself pretty much to herself, not troubling others with her complaints.

History of Scarlet Fever in childhood. Swelling of ankles, affecting principally the left, more or less - dating back to the birth of her last child.

She consulted Dr. Nelson of Kinghorn, whom I have assisted, 3 or 4 days before her death. The oedema then affecting the legs and even the vulva, and diuretic treatment was adopted.

For years she had complained of headache, but at this time it was much aggravated. No epigastric pain. Vision but slightly impaired, but a puffiness about the eyes, due to oedema. The convulsions were typical epileptiform and were 7 in number.

No. 1 May. 23/90. 12 midnight. Bromide gr 30 Chloral gr 10 - every two hours
" 2 " 24/ " 7 a.m.
" 3 " " " 9.30 " "
" 4 " " " 12 noon
" 5 " " " 2 p.m. Bromide gr 40 Chloral gr 30
" 6 " " " 10 " " - Aborted fit during dilation of os
7. " 25/ 2.30 a.m. - died during fit

Dr Welsh, on the ground that there was albumen in the urine, objected most decidedly to the use of morphia. Sawie recommends this treatment and large doses have been given with good effect. It is an old method revived. The same treatment has been used with much success by Dr Stephen Mackenzie of London in Macemia.

On the continent Albuminuria is not regarded as a contra-indication to the use of Morphine or opium.

In the evening, there being no sign of any improvement we decided on immediate delivery, and with this object in view she was brought under the influence of chloroform. The dilatation of the os uteri was only accomplished after very great difficulty. Barnes Bags were not used. Manual dilatation of the os with chloroform pushed as far as consistent with safety, was at last effectual: at last the os yielded very easily—usually rigidity of the os is due to spasm and yields best to an opiate, or other sedative such as chloral, under an anaesthetic, or to Belladonna locally applied.

During this delivery, it is interesting to note that an abortive convulsion occurred, affecting the facial muscles and causing a tremulous movement of one side of the body, but the patient being deeply under the influence of chloroform it did not develop.

The child was delivered by turning, but was dead: the placenta gave no difficulty & good uterine contraction was obtained. A Bandage was applied.

She was comatose until her death.

which occurred at 2.30 next morning during a convulsion

This was an unfavourable case from the first. She delayed her labour. She was a dyspeptic and suffered much from constipation even when not pregnant.

Cases of puerperal convulsions coming on during pregnancy are recognised as being of more fatal prognosis than those developing in labour: the earlier, the more grave the prognosis

Case of Albuminuria, Headache & impaired Vision
No Convulsions

Mr. Wm. at 20 primipara. Broxburn.

consulted me in her first pregnancy. Shortly before her
expected delivery complaining of oedema of the legs and
genitals, impairment of vision amounting almost
to blindness. The urine was loaded with albumen
and almost solidified on boiling.

She was a very pale anaemic girl, and a
systolic murmur was heard over the pulmonary
area. A loud venous hum was heard in the
neck.

She was put on a strict diet with the
view of giving the renal organs as little to do as
possible. Rest in Bed and the administration of
Pul. Jalapae Co. gr. 40. occasionally was prescribed to
regulate the bowels.

A mixture containing. Infusio of Digitalis. Inf. Ethnoid
Nit + the Infusio of the Perchloride of Iron was
given regularly.

Parvise recommends in such cases that
the patient should be instructed to lie in such

a way, that the uterus may gravitate from the kidney and so relieve its circulation.

The abdominal tumour was very large, and the condition was undoubtedly caused, in great measure mechanically.

Under this treatment she improved.

Labour was natural & very easy. The membranes were ruptured when the os was fully dilated by them, and the child was soon born.

A second child, breech presentation, was delivered half an hour after the first, the arms being brought down and the head disengaged in the usual way.

I always perform version and the difficult delivery of breech cases with the patient on her back, it is so much more convenient.

The restriction in diet was kept up for some time, just as in treating a case of Bright's Disease. The Tincture of the Perchloride of Iron with Sulphate of Magnesia was given in the form of a mixture for the anaemia for 3 months afterwards ~~for the anaemia~~.

She made a good recovery in every way

labour in an Epileptic. no fits.

M^{rs} D: Beechwood Row, West Hartlepool. aet. 30. Multipara
second child.

An epileptic from childhood. before marriage she suffered
much from dysmenorrhoea, which sometimes determined
the onset of a convulsion.

Her husband was very anxious to have children
she was not, and sexual excitement due to coition
invariably produced an epileptic fit.

She had ~~to~~ not suffered from Eclampsia, but
the presence of oedema albumen in the urine made
their occurrence probable.

She passed through a normal labour without any
sign. When the head was well down, the forceps
were applied on account of uterine inertia, simply
to keep the head over the perinaeum.

An epileptic fit occurred a fortnight after labour
produced in the usual way.

Puerperal Convulsions. post partum - Recovery

Mr. S.: primipara at 20 ~ Kinghorne
Had been in labour all day, lingering & making
very slow progress.

Nothing unusual beyond exhaustion, patient
fretful and somewhat hysterical.

Chloroform was administered, and she was delivered
with forceps, without any trouble, the third stage
easily managed by Credé's method.

An hour after delivery she had a slight convulsion
in which "her arms moved and her face was all
drawn to one side; It affected the whole body
she was comatose, this condition passing into
sleep. Soporonal gr 30 was administered when she
awoke and she had a good night's sleep.

Her recovery was uninterrupted.

A similar case was lately mentioned to me in
consultation. The woman was a multipara
whose labour was very rapid. An hour after
the birth she had an epileptiform seizure which
became minor & was followed by a period
of unconsciousness. The fit was twice repeated.

* Much prefer Quinine. Ergot raises arterial tension

*

but did not return after Bromide & Chloral had been given.

After a very rapid labour, and more especially if there have been annoying false pains prior to the proper labour setting in, and also sometimes after forceps cases sometimes, severe after pains set in. Case No 2 is an example of this: in a case attended by a nurse from the Maternity in Argyll St Glasgow, troublesome pains kept a woman uneasy for a fortnight. Labour when it did come was rushed through, the after pains were very severe and only relieved by a hypodermic injection of Morphia $\frac{1}{2}$.

In similar cases I have found Quinine $\frac{1}{2}$ act well before or after labour. Ergot after the uterus is empty is good treatment for after pains with a bandage. *
Laudis observes that he never saw Convulsions commence after labour if the bandage had been properly applied.

The conditions peculiar to pregnancy, viz the high arterial tension, perhaps accounting for the slow pulse that is noticed, the heart being so strong, relatively, that it can work leisurely.

as also does the high state of nervous tension.

The exciting cause less in after pains - painful uterine contractions.

After pains should be treated by cleaning out all clots, and endeavouring to get good uterine contractions. Applying the bandage carefully, Morphia hypodermically, or by suppository