"Puerperal Eclampsia - Its Etiology and Treatment."

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by

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During the early period of the history of medicine, when anatomy and physiology were as yet unexplored, and structures and functions of the various organs of the human body were consequently unknown, the practice of medicine was necessarily empirical, and founded upon no thoroughly trustworthy, or rational, basis. And though undoubtedly the results of empiricism have been of the utmost value to the healing art, and though many of our most important therapeutic agents owe their origin and existence to it; it will yet be generally admitted, that a rational and scientific treatment of disease, can only satisfactorily rest upon a knowledge of its etiology and pathology. And this is especially important in those diseases which are so sudden in their onset, so terrible in their manifestations, and so appalling in their results, in which the conscientious practitioner having no time for reference to authorities, or opportunity for consultation with another medical man, feels the full weight of the responsibility of his position, and must be able to act at the moment, and to carry out the proper treatment with energy, correctness, and decision. Such are many of the diseases affecting the puerperal state, and of these none is more important than Puerperal Eclampsia, the Eclampsia.
Churhill's "Theory and Practice of Midwifery" page 480

"Braun on Perinatal Consequences" translated J. D. Matthews, D.Cines, 1984

Leishman's "System of Midwifery" page 347
and pathology of which have become better known during late years, and the treatment of which, if it does not rest upon an altogether certain basis, is at least much more satisfactory.

The frequency of occurrence of Puerperal Eclampsia is variously stated by different authors. Thus Dr. Churchill collecting the cases of 23 different practitioners found 293 cases of Eclampsia in 198,319 labours, an average of 1 in 679. Braun gives an average of 1 in 500 deliveries. Freshman of 1 in 350. During the last five years 830 confinements have occurred in my practice, 4 of which have been attended by Eclampsia, giving an average of 1 in 207. The following is a short account of my cases.

Case I. On March 21, 1874, I was called upon to attend Eliza Reed, aged 16 1/2 years, unmarried, and found her in the 2 1/4 stage of labour, the os about the size of a crown, soft and dilatable, and the pains regular, recurring every few minutes. With the exception of rather excessive feeling of tenderness on vaginal examination, and excessive feeling of pain during each uterine contraction, there was no abnormal symptom and the labour was terminated naturally in about 24 hours by the birth of a fine healthy male child. Shift the patient upstairs at about 10 o'clock PM, the pulse and respiration the uterine well contracted, and the child natural, the
patient only complaining of headache, and of feeling rather
exhausted. At 6 o'clock, 3 hours after delivery she took a fit,
at 7 o'clock she had another, upon which I was sent for
hurriedly, and on arriving I found her just going into her
3d fit. This lasted about 5 minutes during which her whole
body was convulsed, but especially the left side to which the
body was bent, the face and neck were forced with blood,
the eyeballs staring, the conjunctiva congested, the teeth
clenched, and a bloody frothy exuding from the mouth,
while the arms legs and body were in strong tonic and
clonic spasm, and the urine and feces were passed in
voluntary. After the cessation of the fit she regained
consciousness, recognised those around her, and complained
of severe headache, of a sense of weariness, and confusion
in the head. As she had lost little blood during and after
her delirium, and appeared a strong healthy looking woman,
remembering Sir James Simpson's aphorism "Bleed large
and again if necessary!" I opened a vein and allowed
20 oz of blood to flow, giving her immediate after
a draught containing 30 gr of Chloral Hydrate and the
Same of Bromide of Phaenium. At the end of an hour
again another fit came on, more severe than the previous
one and lasting 5 minutes, after which consciousness
did not return. I therefore removed the compress from
the scene, and allowed 80z of blood to flow upon which the imperfect regained consciousness. I then repeated the chloral and bromide mixture depress so each, but in 1/4 of an hour again the last another fit, from the coma of which she never rallied. Understanding the administration of chloral from by inhalation, of fumes of chloral and bromide, the attacks continued scarce at decreasing intervals, till they came on every 10 or 15 minutes, and she died at 10 a.m. 18 hours after delivery, and 16 hours after her first fit. On enquiry I ascertained that for the last two months but especially during this last week she had complained of headache, dizziness, surging in the ears, and occasional deafness. Her eyes had been noticed to be swollen in the mornings, while the backs of the hands, the fingers, and legs were also edematous. The urine passed before delivery, and which fortunately had not been examined, contained a large quantity of albumen. The only immediate cause for this eclampsia in this case, seemed to be mental emotion from the agitation connected with the illegitimacy of the child, aggravated by her mother hearing after her delivery many injurious remarks. Coupled with it, the albuminuria lasting solely due to mechanical pressure of the uterus in a girl little more than 16 years of age in whom the development of the system was not complete.
Case II On March 22nd 1846 at 11 PM I was sent for to Mrs Walker, aged 26, pregnant of her 2nd child, and daily looking for her confinement, and was informed that she had had during the day several fits, during which she had every labor consequentees, and about which after regaining consequenties she knew nothing. Labour pains had not yet commenced, but the labour fits which had been separated by intervals of perfect consequenties lasting 5 or 6 hours, had begun to come more frequently, and the midwife in attendance getting alarmed advised her friends to send for me. I found the patient dull and stupid looking, the skin hot and dry, pulse 120, tongue furrowed, great thirst and headache.

The abdomen was much distended, the vagina and os uteri were soft and moist, the latter dilatable, and the head low down. Suspecting that, from the condition of the parts, labour would soon be completed when once it had begun and thinking that relief might be obtained from evacuation of the liquor amni, I ruptured the membranes liberating a large quantity of fluid, emptied the bladder with the catheter and the breasts which were dilated with forceps by an enema, and at once gave 4 oz. of cholera and 3 oz. of pears chloride, repeating the half the dose every night. After which she fell asleep and slept for three hours.

At this time labour pains commenced, at first slight but soon
increasing in frequency and strength, and owing her out of her severe condition. She administered Chloroform and under its influence labour progressed satisfactorily, the os rapidly dilated, and without further commotion, and without interference further than digital dilation of the cervix during the pains, the patient was delivered at 5 a.m. of a small male child which only lived two days. The placenta was easily removed, there was no haemorrhage, but the pulse continued high 120; the headache, thirst feverish symptoms continued, and two hours after delivery the patient had another fit. The chloral hydrate, bromide et omnia were ordered to be continued every 2 hours till the next day. The next day she was much the same, had had two fits since yesterday afternoon, pulse 130; temp. 102°; complained of pain over the abdomen, more tenderness on pressure, &chi; slightly deficient. On March 24th she was a little better, pulse 120, temp. 101.2°; the abdominal pain and tenderness had been greatly relieved by the application of hot fomentations, the debility more abundant. Two very slight fits had occurred in the afternoon of yesterday. March 25th, great improvement, had slept well during the night, pulse 100; temp. 99°; headache better, affection slightly improved. From this time improvement continued, no more fits occurred, and the patient made a good recovery.

Two years subsequently this patient again became pregnant.
had an easy labour without any symptoms of eclampsia and was delivered by a midwife two months afterwards. However, she became dull and melancholic, and had delirium, suffered in short a slight attack of puerperal mania from which after three months treatment she recovered.

I have now repeatedly had this patient under my care for three years, have examined her urine again and again, and during her attacks of eclampsia subsequently, during state of mental derangement, and I have never been able to detect the smallest trace of albumin. My brethren E. A. and W. Smith saw the patient several times with me, and corroborated the negative result of examining of the urine by myself.

Case III. Mrs. Hetchins was taken in labour of her 9th child on June 15th, 1848, and having found the os only about the size of a florin and the pains slight and recurring slowly, I was expecting a tedious case especially as the patient was 49 years of age, and 5 years had elapsed since her last confinement. As she was making slow progress, and as at the end of an hour there was comparatively little further dilatation of labors, after patient's request I allowed her to get on to the chair, as she in her former labours been accustomed to do. Immediately thereafter severe pains came on, and to my astonishment when I
I found the head in the act of being born, and had scarce time to put the patient into bed when delivery took place, at 11 o'clock P.M. Placenta followed naturally, and with the exception of slight after pains the patient stated that she felt remarkably well, when I left her an hour afterwards. About 2 hours after delivery her husband observed her to be trembling and apparently unconscious. This continued about 3 minutes when she recovered consciousness, but feeling very confused and light headed. An hour afterwards the look another fit, I was sent for and found her quite unconscious and breathing deeply. In a few minutes she seemed to revive a little, seemed to recognize her friends, and muttered a few words, but almost immediately I went into another fit. Never again showed the slightest consciousness. I bled her to 15 ounces, gave a draught of chloroform, an enema of warm water to clear out the bowels, emptied the bladder by the catheter. I then administered chloroform whenever the fits showed the slightest tendency to return, and kept it in for 3 hours, without however stopping the fits although they were less severe. I then bled six times to cleanse the uterus of whichbled freely, but still the fits returned every 15 minutes, the coma becoming more profound. She died at 2:30 P.M. 13 hours after her first fit. I had not seen the patient previous to being called in at her confinement, but learned from her friends that she had often
Complaints of swelling of the feet hands and eyes, the latter sometimes to such an extent that she could not see, and that she had been very asymptomatic for months previous to confinement, to which she had looked forwards with great fear. Her urine drawn off by the Catheter contained about 3 part of albumen.

Case IV  On Feb 14 1840 Mrs Wilson sent for me to keep her attendance during her confinement, expected about the end of March. While talking to her I was struck by the pallid and edematous condition of her face, especially of the eyelids and on auscultating I found that her hands \\
were much swollen, the latter having a cutis listenizing appearance, and ready for lifting upon pressure; that she had for some time passed small quantities of urine, and had been much troubled with diarrhoea. Her urine on examination was marked albumen to the extent of 3/4 of a part, was of a pale colour, and contained hyaline and granular tube casts as ascertained microscopie examination. I continued to attend her regularly, introducing \\
iron diuretics  \\
and an astringent mixture of Calomel and Sod. to keep the diarrhoea somewhat in check, looking forwards with much anxiety to her confinement. On April 14th at 9 am she was sent for, and went at once taking with me great relief.
on the expectation of having Delampsie to deal with.

What was my delight then, to find on my arrival the child washed and dressed, and my patient doing well and in good spirits, learning had a very easy labour the child being born almost immediately after her husband came from me, a
distance of 2 miles. The placenta came away naturally with little haemorrhages. For the next three days the patient appeared to be doing well, the urine was increasing in
quantity, and the albumen in it diminishing, settled on the
3th day after confinement it scarcely departs from 10. The pulse
became kept high and very weak, the complaint of
giddiness in the head, buzzying in the ears, and accessorio
numbness of sight. The oedema left her face and limbs, but
the giddiness seemed to become more decided, the gums and
inner surfaces of the eyelids being absolutely bloodless. On
the fourth day after confinement I was told she had had
a fainting fit, and had been unconscious for half an hour.
During my visit the head a 2\\text{nd} which consisted of high
swellings of the face and limbs, and unconsciousness
from which she recovered in about 20 minutes. I ordered
her Retsch of wine and ammoni in Oprah doses, mixed
-#ing with Ivy and Brandy. Next day (the 3rd after
confinement) she had another fit of much greater severity
in which I was told she was always conscious. I was sent
Benedict "Euphrasia Conventualis" • Alcuin • page 22

Source: Guy de Maupin Report [1848]
for and found her comatose, pulse 120, never perceptible, pupils dilated and insensitive to light. Her urine passed in small quantities and became very dark on being heated, her appetite was nil, and she had great thirst. I added digitals to her mixture, continued the sedatives and stimulating diet. But she gradually became worse and one or two convulsions came, accompanied by headache, vertigo, and faintness. Vomiting then set in, which nothing seemed to relieve in the least, breathlessness also supervened, and thus she continued gradually sinking till her death on May 6th, 2 months and four days after confinement. Death seemed to take place not from the eclampsia which was evident from the preceding day, but from the haemorrhage the result of the disease of the kidneys with the great drain of albumen. Post mortem examination

thus in these four cases, long occurred before labour, continued for three days after it, and recovered, the other three occurred one after another and all of them died. This is at variance with the generally received opinion for it is generally stated that eclampsia most frequently develops itself during the course of labour. *Bueau gives 54 per cent of his cases as occurring during labour 24 per cent after it. Of course
* Leibman's Medicine p. 747
** Jneke's Medicine " 490

* Ramelbottas "Deutliche Medizin & Surgery," foot note p. 64.
14 Cases, 10 occurred during labour & after delivery. *Bickman agrees with the authors of this article in the "Novum Lexicon Steiernae de Morbis et Medicina Maternae" that the relative frequency is — Pregnancy, labour, after delivery. Generally two Postpartum Convulsions are not considered dangerous, although theoretically they would appear so, if it be true as Churchill says that there can be little question in attributing convulsions after delivery to some injury received by brain or nervous system after during labour.

Churchill considers convulsions that occur during labour and continue after delivery, the least dangerous, then those that occur during labour only, then those after delivery. The most favourable those which occur during gestation. Ramelthom's opinion is expressed in the following words: "From what I have seen of this disease I should say, the convulsions coming on after delivery, if the patient has not suffered any attacks before, are not so dangerous as those which arise during pregnancy and labour."

Taking all varieties the mortality appears to be much lower than formerly for while we have read stating that in historical times any sum of 4 in 100 die, hence that the greater proportion were lost, on the other hand we have Brown estimating the mortality at 90 per cent, Churchill at 22.5 per cent, Liver at 24.6 per cent of his collective cases.
per cent of his own cases, and Dickman at 30 per cent.

Most authors agree in attributing the diminished mortality to the better treatment adopted nowadays. The treatment however will depend unsuspiciously treat empirically, upon the views we entertain about the cause of the disease. Hence a knowledge of its etiology becomes essential to the adoption of proper therapeutic measures.

Etiology. Hepparates in his aphorisms (sec. 11, 30) states, that convulsions arise either from reflection or evacuation, to which Galen added a 3rd name, irritation occasioned by a marked humor. This may be looked upon as a forshadowing of the more modern theories which attribute convulsions to hypoxemia, or anemia of the brain and spinal cord. Galen's mobius humor, being represented by the locaemia connected with the appearance of allusions in the urine. While many of the older authors agree with Dr. Fleetwood Churcheil that it was exceedingly difficult to state any thing very definite as to the cause of perpetual convulsions, and wrote D'Colles who says, 'I conceive we are quite ignorant as yet of what the cause may be, nor could I ever find or discover any appearance to enable me ever to hazard an opinion on the subject.' Yet the majority of the older authors seem to consider direct or
secondary congestion of the brain, as the grand cause of convulsions in the preferred state, this being connected in some way connected with some injured state of the uterus, and consisting of irritations propagated from the uterus to the brain. In this opinion Rambotham, Pierre, Lee, Soock, and Churchill concurred. Experimental physiology however shows that mechanical irritations of the cerebrum and cerebellum will not produce convulsions, and that even when these are removed convulsions can be immediately produced by irritation of the cranial end of the spinal cord, and that irritation of the medulla oblongata and cauda equina, as well as of the cord will induce them. Again, if cerebral congestion were the proximate cause of eclampsia this disease ought to occur far more frequently during the 2nd stage of labour than at any other term; when the straining during the bearing down pains, and the partial or entire closure of the foramen impede the return of venous blood and thus add to the cerebral congestion. But this is evidently not the case as the eclampsia may occur before labour has commenced at all as in Case 2, or not till after delivery as in Cases 1, 3, 4. Congestion of the brain, therefore, or serous or sanguineous effusion exerting pressure upon it will not account for it in all or even most of the cases, and
* Zdeněk Šmelík, "Parturientia Obstetricis" page 284

** This page 304.
undoubtedly is as often the consequence as the cause of the disease.

The great discovery of the reflex functions of the spinal cord by Dr. Marshall Hall threw much light on this subject. He at first regarded eclampsia as one of the diseases of this part of the nervous system in which he was followed by Dr. Little, who thoroughly worked out the subject in his book on 'Parturition and Obstetrics.' Dividing the nervous system into the cerebrospinal system consisting of the cerebrum, cerebellum, in common with that part of the spinal cord which conveys sensations and voluntary motor power to and from the brain, and spinal system, consisting of the spinal marrow (exclusive of the part of it devoted to the functions of volition and sensation) together with the medulla oblongata and corpora quadrigemina, he shows that we cannot have connexions without the pre-existence of some irritation of the spinal system, and that when congestion or effusion does cause eclampsia it is not the cerebral, but the spinal system especially the medulla oblongata that is affected by counter pressure. Connexions can only occur he says 'when the central organ of this system, the spinal marrow has been acted upon by an excited condition of an important class of its incident nerves—named, those passing from the uterus, owing to the general uterine, such excitement depending on pregnancy, labour, or...
the puerperal state. Convulsions may there arise from two
different causes: 1st. Circulation, acting on the central organ
as pressure on the diaphragm, congestion, compression, loss of
blood, or the elements in blood; the influence of emotion
and anxiety. 

2nd. Dehydration, acting on extremities of acetabular
monary as irritants of recent symptoms of the uterus:

urine passages, of the abdomen, ovaries, bladder, etc.

This was a most important addition towards a scientific
knowledge of convulsions, and the truth of the theory of reflex
irritation in the production of convulsions has been amply
verified since its first enunciation, for though it does not
reach all cases of puerperal eclampsia, it does the majority of
those of simple eclampsia as of children, and a great many of
epilepsy, and practically is the most important factor in the
production of puerperal eclampsia, for it is found that in the
majority of cases the convulsions cease or are modified, and

the chances of life greatly increased, as soon as we can relieve
the puerperal irritation of the uterus by delivery.

The next great step towards a better understanding of this
disease, was the discovery of its co-existence with an
allochomenus condition of the uterus. Sir James Simpson
points out that about this beginning of the present century
Hamilton and Demanet stated the important fact.
That Purpureal Convulsion were liable to be preceded by symptoms of Anaemia in the pregnant mother. Mr. C. James had pursued to 1840, in more than one case, ascertained the oedema or anaemia seen in patients affected with Purpureal Convulsion to be one of the numerous and important forms of Arterial Disease, which Dr. Turner had shown to be connected with the existence of Albumen in the urine. Mr. S. W. J. Woodrow, in his monthly journal for 1843, was heard to say, that "patients attacked with Purpureal Convulsion had almost invariably Albumen in their urine, and some accompanying or rather preceding Arteral Complication, and hence probably granular renal disease."

The publication by Dr. Levers in "Grey's Hospital Reports" for 1843 of his 14 Cases of Purpureal Eclampsia, in which the urine was Albumenous, further drew the attention of the profession to the subject, and the further investigation of it by British and Continental Physicists have conclusively established the clearness of the Connection, notwithstanding that it was at first denied that there was any causal relation between the two, the Albumenuria being supposed by some to be the result and not the cause of the Convulsion, an opinion once deemed to be incorrect by the absence of Albumen in the urine of Eclampsia, even when the fits were as severe as were in three third of the Eclampsia of Children. While however obstetricians are at one as to the clearness of the relationship between Albumenuria and Purpureal Eclampsia.
there is considerable difference as to the cause of the albuminuria. Thus Sir John Rose Cermack believes it to be due to the mechanical pressure of the gravid uterus causing renal congestion. "Peculiar renal sclerosis" are generally the typical results of non-elimination of the excrement of the blood, and in a very large number of cases, this non-elimination depends on renal congestion caused by pressure of the gravid uterus. Dr. Ewer is of the same opinion that "the gravid uterus by its pressure prevents the return of blood through the Smellie veins, hence is the cause of renal congestion, and the consequent albuminuria and uric aciduria."

The sudden disappearance of the albuminuria after delivery often in a day or two leads to the idea of structural change in the kidneys. These occur much more frequently in primiparae in whom the abdominal walls are less yielding and the pressure of the uterus consequent perhaps, leads also support to this view.

Brown again by his definition of eclampsia "as an acute affection of the motor function of the nervous system characterized by sensibility, tone, and clonic spasms, occurring only as an accessory phenomenon of another disease generally of Bright's disease, in an acute form of eclampsia, he once indicates his belief that albuminuria is the result of inflammatory of the kidney. But against this is the opinion of Dr. James Simpson who, while admitting structural disease of the kidneys in some cases, names street granular degeneration, and giving an illustration case distinctly states that the albuminuria is a transitory morbid
Condition, and that the affection does not depend upon, nor result in any actual structural change in the kidney. This is in accordance with the general experience of observers, the inflammatory theory being contradicted by the sudden disappearance of albumen after delivery, by the absence of rigor and high temperature which usually accompany inflammation of an acute form, and by the results of post mortem examination in many cases. The inflammatory theory therefore only more than the mechanical will account for all the cases, though each will account for some.

In a very interesting case to be referred to hereafter Dr. Angus Macdonald found the renal changes to consist of a limited degeneration of epithelial cells of a colloidal nature, in certain nephritic tubules, with consequent mechanical closing up of the rest of the tubules, or consequent interference with the function of the kidney, this degenerative lesion of a non-inflammatory nature, and probably analogous to the degeneration of hepatic cells in acute yellowish jaundice of the liver. This appears to be in harmony with the theory of Pritieko who considers that attempts fibrosis are indications of albuminuric urine indicate undoubtedly the first stage of Bright’s disease, and in that case have an inflammatory origin, yet it is possible that the same symptoms may proceed from other than inflammatory causes.

Another theory of the production of albuminuria is that it follows according to him during pregnancy the blood contains an excess
* Vol. I page 300

* Farys Capital reports for 1843 page 372
of effects which give rise to high arterial tension, with consequent transudation of albumen. The renal disease being thus due to the altered quality and tension of the blood. Or again, in the language of Sir James Simpson, "It may be that the puerperal oedema and headache are and the actual convulsions do not stand in the relation of effect to albuminuria, or renal disease as a cause, but that are these circumstances, the acute convulsions, albuminuria, are symptoms, or sequelae, effects of some one common central cause, namely, a pathological state of the blood, of the occurrence of which pregnancy in some way peculiarly predisposed, acted from various acts of secretion, nutrition, and perspiration, being vast likeness altered by the conditions of later gestation."

While all practitioners recognize and act upon the close relations between albuminuria and eclampsia, few will be able to endorse the statement of Dr. Ream, "In no case have I observed albuminuria except in those in which there have been convulsions, or trivial symptoms have presented themselves, which are readily recognized as precursors of convulsions." Most medical men will have looked with anxiety to the confinement of patients, in whom the existence of oedema of the eyes and hands, along with albuminuria, caused them to dread puerperal eclampsia, and yet in whom delivery took place without a haemoptysis, and recovery was rapid and complete. I examined carefully the urine of 20 pregnant women from the 7th to the 9th months, and found
Churchill's Medicing Page 480

it albumen was subject to headache, in 1 to a considerable degree, and accompanied by oedema of the face and hands. All of these patients had natural labours, and made good recoveries. In the other case, which was the patient whose history is given as Case 11, the blood albumen was about 3/4, and in this case too was there albuminuria. In another patient confided on 6 weeks ago, she was on being called to her friends by her swollen appearance. Yet she passed through labour naturally, and on examining her urine after delivery (after 8 hours) it contained a specific deposit of albumen. The albumenuria continued and albuminuria continued gradually disappearing till ten days after delivery. *Churlelhill states that Dr. B. had found albumen in the urine of 47 out of 200 pregnant women, and Dr. Ledinmauer in 37 out of 132. *Droussen while acknowledging the frequent occurrence of Conunseconis with albuminuria, and mentioning that Mr. Lambert - Goree very met with it 94 times out of 139, adds, ‘it must not be forgotten that in a great many cases, Conunseconis never occurs, although the urine has a long time been albumenous.’ So also Sir James Simpson, Sir John Crambell, Dr. Barnes, Dr. George Johnson, and others might be quoted in the same connexion. And these authorities might be quoted in proof of the converse proposition names that Puerperal albumen may occur and run a fatal course without the most careful examination of the urine exhibiting the slightest trace of albumen. E.g. Case II. *Droussen records a fatal case without albuminuria *
in 16 Cases of Convulsions occurring during Dr. Hald sickness management of Dublin lying in hospital, in all of which the urine was examined, albumen was found in 91 Cases, there absent in 15.

Thus then however constant may be the relation between albumenuria and physical debility, the fact that the one may occur without the other, and are rare, clear proofs, that albumenuria, or rather the leporex of the blood connected with albumenuria, whether it be from urea, or as Thiers and others from Carbonate of Ammonia due to the incorrect function of the liver, or as Hufnagel found excess of infrastructure matter, or from Krakü, is not the only cause of the disease. Nor should we expect in this any more than in other diseases, that one cause alone should always act in producing it, but rather the several maling conditions act together to bring about the result. What then are these other maling conditions? Most obstetricians are agreed, and Dr. Barnes has especially pointed it out, that during pregnancy the whole nervus system of the female is in a state of great irritability, due as Barnes thinks to a physiological hypertrophy of a part of the spinal cord, so as to suffer the extra amount of this nervous necessary to carry out the impending process of parturition, just as the fetus during its sexual period is so irritable, that the slightest irritation of the skin, which at another time would have no effect, will now throw it into the most violent tetanic spasm, that this increased irritability of the nervous system occurs to its greatest extent during pregnancy is certain, for causes such as the sexual act, which
unlike cause of abnormal symptoms generally, may induce convulsions or vomiting, if induced during the later month of pregnancy, and latent diseases such as chorea or epilepsy, which have disappeared in childhood or puberty, will reappear during pregnancy, the pregnancy thus acting as a test experiment of the health of the female. But not only is the irritability of the nervous system greatly increased by pregnancy, the vascular system also participates in the changes undergone by the system. The blood is altered in quality, being more watery and fibrinous, the red corpuscles being increased and the white ones diminished, while the heart is hypertrophied, and the vascular tension increases. These are natural healthy changes, due to the physiological processes induced by pregnancy, but they are physiological processes, and great tendency to become pathological.

Then again, from the presence of a growing factor, the efforts products are increased, and consequently there is a greater necessity for their separation from the blood, and hence if the excretory organs are not generally healthy, the blood gradually becomes more impure. The nervous system imperfect nourished, its irritability greatly increased, and its ability to constrict is much greater. And especially are the kidneys liable to have their functions impaired, especially in primiparous, where the abdominal walls are comparatively tense, do not resist enough, and the expanding uterus, which then exercises more backward pressure, leading to venous congestion of the kidneys with its attendant albuminuria, of a more temporary
nature, arising rise to granular or other degenerations of the kidneys, with its consequences of increased vascular tension, increased pressure, hypertrophy, or stenosis of the minute cerebral arteries, either from the vessels allowing the urine refusing to allow the urine 32mm to pass, or the latter acting upon the vasomotor center in the medulla oblongata, irritating it, and leading to anoxemia of the cerebrum, cerebellum, spinal nerves, &c. The last, with its consequent attacks of eclampsia. Thus then we have a true anoxemia, consisting in the presence in the blood of these waste products which ought to have been excreted by the kidneys, and the patient is now under her irritable nervous system, and anoxemia of the blood, in the condition of a person poisoned by St. Cunie, in which the slightest irritation of the peripheral nerves, of the uterus as by pressure of the foetal head, of the placenta as by the accumulation of foetuses, of the bladder as by distension of urine, of the stomach, then the may suffer so long as on an attack of eclampsia, or a central cause may have the same effect as mental emotion as in Case I, and in Smith's case 366 in which one of the assistants imprudently telling the patient that the child was dead, she was immediately thrown into convulsions.

But although the kidneys are generally the exciting organs at fault, this anoxemia need not necessarily be urinemic, but may be due to the non-elimination of effete matter by the liver, as in acute yellow atrophy, which convulsions frequently occur, or by...
the lungs, the skin, the vessels. In the same way the
lucæma may be due to the typhus, enteric, varicella, or
pertussis, all of which as is well known are apt to be attended
when occurring in pregnancy by albuminuria, as albuminuria also is
on the lucæma of an may be due to absorbing of debris matter
from the cheeks, the object of which according to Cornack is the
prevention of lucæma.

Thus their predetermining a special irritability of the nervous system
in connexion with pregnancy, we combine the lucæma theory
of Trumpp, Eyer, Cornack, Brainse, with the reflex theory of
Marshall Hall, Murphy, Tyler Smith to form a complete hypothesis
of all cases. But these do not all require to be present in all cases
to produce the disease, for we may readily enough conceive the
nervous irritability to exist to such a degree, as to be sufficient
to excite a person with a strong nervous constitution, along with
slight peripheral irritation or central irritation to give rise to
lucæma as in Case I. The liability to such troubles however be
greatly increased by the occurrence of lucæma; while in a person
of dull phlegmatic temperament, the nervous irritability might
never be great, and under even with considerable albuminuria,
and along with peripheral irritation might not exist to the extent
necessary to set up clampsis. In the majority of cases however
all the three factors are present.

While however most recent authors have in explanation of lucæma

*page 267, "Heart disease during pregnancy\*.\*\*
Eclampsia found it necessary to precede a special condition of the nervous system in pregnancy, as a predisposing cause, or starting point for this locomotive theory, more and attempts to connect it with an exact anatomic position in the nervous system. In the latest important contributions to this subject, an article published in his book "Heart Disease during Pregnancy" by Dr. Angus Macdonald taken this important step. In this paper, Dr. Macdonald by a process of reasoning upon a typical case of Periperal Eclampsia supported by 22 cases less typical, in which he found on just medieval examination evidence anatomic of the brain's effect on the collective motor centers including the cells named the medulla, corona, thalamus, caudate, cerebelli, and in which the notion of the medulla oblongata corresponding to the center of the Vaso motor system (as Omjannikow's observations prove). There were changes of a gelatinous nature, arrived at the conclusion that the Eclampsia was the result of the inference concerning the brain and motor centers induced by irritation of the center of the Vaso motor system in the medulla, and that again caused by the coronary blood acting as a local stimulant to this center itself, or as a reflex stimulant to the different nerves leading to the center from the various regions of the body, or in both of these ways. His conclusions therefore "merely tend to localize an effect that was previously assumed to act somewhere without any attempt being made to determine very particular its exact mode of action." This idea Dr. Macdonald
Hessmane and Zemmen on the nature and objects of the phenomenon
conscius arising from bleeding, Edinburgh Society 1859

* This page 28?
brings forward as being of necessity tentative, and further observation are necessary before it can be accepted as proved, but it seems to be the most widely embracing theory yet brought forwards.

* It is now very generally admitted, and the experiments of Kussmaul and Jenner have rendered it certain, that Anaemia of the brain and motor centres will cause convulsions if rapidly brought about.

Thus in numerous cases of animals killed by death, convulsions without a single exception occurred, and the same convulsions of an epileptic nature followed apoplexy or compression of the arteries of the neck in experimenting on men. The same authors found compression of the carotid's, palla of the face, contraction, and sensation of the face, slow deep breathing, irregular and unconsiousness, (and) in two or whom the compression was still kept up notwithstanding these symptoms, a choking sensation attended by vomiting and convulsions came on. Thus Anaemia of the brain motor centres will cause convulsions, and the Anaemia may be brought about by large haemorrhages, as in cases of Post Partum haemorrhage in which convulsions generally occur; or by wasting disease causing general Anaemia as appears to have been the cause of the convulsions in Case IV, or the Anaemia may be due as Kussmaul and Jenner showed to be probable, to contraction of the blood vessels induced by the Vaso motor nerves, or to spasm of the cerebral arteries according to Huph Wizard Jackson or to the Spgrp Coley or the Mesula Arteries according to Johnston.
* Obstetric Medicine Surgery for Obstetric Page 409

* Heart Disease during Pregnancy or Page 262
Trunke also supports the Anaemic theory, but supposes it to be
produced mechanically in the following way. The imperfect state
of the blood and the concomitant occurrence of Carotid hyperfie
lead to the exudation of water through the coats of the cranial
vessels, the Capillaries and venules are pressed upon by this effusion
and their compressive juices rise to Anaemia of the brain.
This theory however will not include all the cases, for as in D.
Macdonald's first case, in the case quoted from Bartels by him,
there was not the slightest appearance of Cerebral oedema, and in
a case given by Ramsbotham* the vessels of Asteriacee contained
less blood than usual. The cerebral pleurae were quite
blanched, there was no fluid in the Lateral Ventriles, nor between
the membranes at the upper part of the skull, but about two drachms
at the base of the brain, 'This small quantity could not cause the
Anaemic Anemia. This mechanical theory will not include
cose the cases. The theory of Vaso-Motor theory Irregularity however
does include those cases named, and explains equally well and
more scientifically the cases coming under Jackson's and Johnson's
theories. It is further supported as Dr. MacDonald points out, by
four cases of acute Epilepsy, in which at the same situation in
the Medula Oblongata, there was found a condition of irritation
of Carotidanas character, and further as we shall immediately
see by the results of treatment. Whether however the Cause of
the Vaso Motor irritation i.e. Locaemic blood be invasional, the
case, seems more open to doubt, at least of a connection with albuminuria, for some have endeavoured to show there are cases of 
premature eclampsia where there is no albuminuria, and in epilepsy 
where the same condition of the Vaso motor centre has been found,
albuminuria is the exception rather than the rule. It seems probable therefore that while in the majority of cases the Vaso motor 
irritation is occasioned by toxæmic blood, it may in some cases as the result 
of a pure reflex nervous influence, such, for example as may be excited 
by emotion as anger or terror, or by irritation or indigestive irritations.
It seems also probable that in some cases the irritation might be 
light as not to lead to any organic change in the circle, but the 
merely temporary, and that unproportioned to the severity of the case 
the corroborative changes would be more pronounced.

Of the theory of D’Malheureux that eclampsia is due to minute 
affections in capillary haemorrhages into the brain as supposed by 
Cases in which such Correlation was revealed by Post mortem examination.
it is only necessary to say, that it seems to be impossible to account 
for Correlations either by the loss of such a small quantity of blood, or by 
the pressure upon the brain of such minute haemorrhages, especially 
when albuminuria may exist. Considerable numbers without 
manifesting themselves by a single abnormal D認ston-Gunn’s life, 
and that they are more readily understood as being consequences 
rather than causes of the fits.
Treatment. Receiving as we do, that for the occurrence of Periperal Eclampsia, we have 1st A special predisposing Condition of the Nervous System, consisting probably of Excessive irritability of the Vaso-Motor Centre, 2nd A toxemia of the Blood generally depending on Albuminuria & Method Changes in the Kidneys, 3rd Endemic Or Periperal irritation acting in a reflex manner generally as the immediate or exciting Cause, we are naturally led to the indications for treatment which are to remove relieve or modify these Conditions. This may be done in such a manner as to prevent the occurrence of the Consequences, by Prophylactic treatment. Although as we have endeavored to prove, albuminuria is not absolutely necessary for the production of Eclampsia, yet it is such a general accompaniment of the disease that its existence in any considerable quantity, must always, look forward to the labour with some anxiety. In such a case we should endeavor to remove or allay all offensive irritation, watching the bowels to see that there is no food accumulating that they are acting regularly, the bladder to see that there is no desinence, the skin that it is thoroughly clean and able to discharge its secretions, and so regulating the diet that there shall be no gastric irritation produced. In this way we may not only remove the sources of irritation of these organs but help to relieve the toxemia by calling upon these depurative organs to aid the reticulum to carry off
the excretory products of the blood. We may then endeavor to act upon the kidney. So long as there is a pretty free flow of urine even though it be albuminous, diuretics are unnecessary, but as there is a tendency to blocking up by expectoration into the magpie's capsule, 
Delaire, Pellini, and Ferroni, the cephalic use of diuretics is advisable to wash away the cylindrical elevations of the interior of the urine be diminished as it usually is, then diuretics are necessary, of which Dieterferri Percheron, with its acids, is perhaps the best, as the liver has a tendency to diminish the amount of albumen, to improve the quality of the blood besides acting as a diuretic. Then having by these means as well as by good nourishing non-stimulating diet, hygiene measures undertaken to improve the condition of the patient, we are prepared to act upon the other indications, namely, to relieve the irritability of the central nervous system, as soon as symptoms of labour show themselves. This can best be done by the administration of Chloroform, which, should never I think, be omitted where there is the slightest suspicion of eclampsia. The beneficial effects of Chloroform in labour, first announced by Sir James Simpson, have been corroborated by nearly all observers, as well as the dangers to be one, there is no reason why it should not be administered in any case, while it is absolutely necessary. In any case that it should be in suspected eclampsia. Hydrate of Chloral, Thermoidea of Potasa (methods of preparation) are too slow in action. Have no advantage over Chloroform in eclampsia.
By these means, I feel certain we may in many cases prevent eclampsia, and in the case of a young married lady attended by me last summer, of a highly nervous temperament, with oedema of the face, hands, and ankles. She was incontinent of urine, with headach, restlessness, and tenderness to pressure, with occasional vertigo. She was in her labour, and the local measures just indicated, and the administration of chloroform from the commencement of labour, Eclampsia was averted. The labour, a case of tetanic and purging, was delivered by forceps, terminated safely, and followed by a good recovery.

But unfortunately the medical attendant is not engaged elsewhere, especially amongst the lower classes, and often becomes nothing about the case till called to attend her when labour has commenced. The opinion is prevalent too, that headache, abdominal pain, dyspepsia, vomiting are necessary or at any rate very common accompaniments of pregnancy, for which nothing can be done, and hence all chance of hydrocele treatment is gone by the time the accoucheur sees his patient. He has to consider and immediate treatment of the disease. The most important indications are: To relieve or allay the central nervous irritation. 2. To cut off all central and peripheral irritation. The relief of the headache we generally have on hemi-dectomy.

The 1st indication may be carried out by the administration of chloroform, of chloral hydrol, bromide of potassium, tincture of amylic and quinine. Of these Chloroform is the most important, and relief occurring before labour has commenced.
*Porcine or Periperal Convulsion* - D'Arcy, page 55

*Stenpavi Vol. I footnote page 302

**Parturition obstetries** / page 316

* page 55
during the puerperium, or after delivery, the patient should be at once deeply narcotised. Brown is very strong in his recommendation of chloroform. He says, "we have observed results from chloroform which have surpassed all our expectations. The chloroform anaesthesia is to be induced when indications of an impending paroxysm show themselves to be kept if not until those premonitory indications disappear. It relieves the irritability of the Vaso Motor Centre, thus preventing or stopping the contraction of the muscular arteries. The consequent anæmia it diminishes central and peripheral reflex irritability, lessens the unrest, and ends off perception, and local irritation, the renal produces obvious changes in the blood. As Dr. B. Spry has shown, during the attacks there is hypogastric or contraction of the muscles of the neck to seek an escape to impede the return of venous blood from the head, paroxysms without which D. Marshall Bell say true convulsions with loss of consciousness cannot occur. Chloroform as Brown states "moderates the imminent danger of the cramps of the muscles of the neck, tetanus" and by relieving these spasms tends to prevent the severe and hemorrhagic effusion into the cranium which often are the result of the vascular engorgement of the head produced by the attacks. Further by diminishing the reflex irritability it allows whatever operative measures may be necessary for the safe delivery of the patient to be accomplished without risk. Indeed in a case where eclampsia has occurred chloroform anaesthesia might be induced before the operation even to accumulate.
* Braun Prep: Comulcior page 57

* Lowerman's Medicine page 459

* Raujerg's "Therapeutis" page 340

** Macdonald "Heart Disease" quoting Fisher, page 265
the patient, and especially before we venture to pass the catheter, rupture the membranes, use the enema, or resort to any general interference. Brown got a complete successful result in 16 cases occurring consecutively by treatment with Chloroform Anaesthetics, and Reeds, and Pleasman deduces from Charpentier that the mortality in cases treated by bleeding was 35 per cent, whereas when treated with anaesthetics it was only 11 per cent. Even in cases where it does not prevent the attacks, it modifies their severity.

Hydrate of Chloral is somewhat similar in action to Chloroform. Facts like it by lowering the Vaso-motor centre for all observers are agreed that large doses lessen the blood pressure, chiefly by acting on the heart, but partly by paralyzing the Vaso-motor nerves. Hence Chloral acts directly by preventing or relieving the Anæmia necessary for the production of the eclamptic attacks. But it is also when given in large doses a powerful anaesthetic for several purposes. May the genius following Lambert's method, in 15 gr. doses weekly prevent you from being the patient's fallacy. Hence like Chloroform it cuts off the emotional and peripheral irritability, and after a simultaneous use, it is the most valuable agent we possess in the treatment of this formidable disease.

On the sedative effects upon the nervous system of Acromide of Potassium, it is unnecessary to dilate, its efficacy in relieving the frequency of the attacks in epilepsy is now generally recognized, and various forms seem to be useful in Puerperal Eclampsia. The Cord
not depend upon it alone, but it may be greatly useful in helping the fit, at first combined with Chloral, so as to have a sedative effect upon the nervous system, and subsequently in 30, 60, or even 60 grain doses alone, to keep up the effect. In cases of acute administration of Chloral and Peromide was attended immediately beneficent results.

Intricacies of Amyl. I am not aware that this drug has been tried in cases of temporal clamping, but by its action of relaxing the whole vascular system, and greatly reducing arterial strain, presumably for depressing the action of the Basal Motor centre, it would seem to be of use in preventing a threatened attack of its use in preventing a threatened attack. Its use in epilepsy is frequently followed by the coming of the fit even after the appearance of the aura, as found by Dr. Eriske, to whom I am indebted

Bleeding. This was the remedy far excellence of the older practitioners, and was carried out to a great extent. Thus Ramsbottom says "Bleeding is our great reliance, the lanceet is our sheet anchor, and Blood may be taken in a very large extent; it may be necessary to draw 50, 60, or 60 ounces, may even more in the course of a few hours," and he speaks with approval the words of Dr. Price's "the lanceet, the lanceet, and nothing but the lanceet is with your confidence." It speaks as a matter of
of gratulation of the favourable results obtained in his day, to be
attributed to the extent to which bleeding and other creascent measures
were carried. All the old authors place bleeding as the most important of
all therapeutic means, and while for all other diseases the use of the
camect has been discontinued, in Periperal Eclampsia it has kept in favour,
and still has the support of the highest authorities, though it is yielding
to Anaesthetics. It must therefore be admitted that we have in bleeding
a powerful remedy in this disease. It was supposed to act by counteracting
the congestion of the brain, which was believed to be the immediate cause
of the eclampsia; thus furnishing a good example of the benefits of eminence,
but it will stand its ground when examined in the light of modern theory
and is a support to the theory of Vaso-Motor Irritation. The loss of blood
acting as Krause diminishes the irritability of the Medulla Oblongata,
and presumably therefore of that part of it forming the Vaso-Motor Centre.
"After bleeding," says O'Macdonald, speaking from Father Physiologist, "the
Vaso-Motor Centre is uncrushed or exhausted," and again "there is no denial
about the effect of bleeding even a moderate amount in diminishing
Vascular Tension 27 as I take it is depressing the action of the Vaso-Motor
Centre." We are thus enabled to understand its beneficial results, and
be appreciative value set upon by the old practitioners, for it once the
remembered that Chloroform, Chloral, Briomide of Phosphate, Amyl were
altogether unknown to them, and in truth, bleeding was the only
remedy they had to carry out their 1st indication, viz. to relieve the Central
Nervous Irritation. But valuable, as one occasionally to them, it is
not of the same importance to us, for in Chloroform Chloral and
have remedies that produce the same beneficial effects as bleeding, unattended by the dangers, for undoubtedly the larger amputations that were done were often productive of cure, tending to bring on that very Convalescence they were intended to arrest, by causing the Anaemia that produces them, and causing delay in Convalescence. Hence "to advocate Anaesthesia is practically to condemn amputation. If there is any necessary antagonism, let that... Ether is by far preferable to Amputation." Still bleeding has its place. To a slight extent it may be said to carry out the idea, as it may remove a small amount of the swelling element in the blood, and in young women, in whom the fits still return after the Anaesthesia of Chloroform or Ether, where there is marked engorgement of the vessels of the face, it may be carried out to a moderate extent, for if it does not arrest the fits, it is one of the most powerful means of ascertaining the lesion to the nervous centres and to be induced by the fits.

As to the value of Chloroform in the treatment of Occipital Epilepsy, there has been much diversity of opinion. Many of the earlier authors rank it highly and some of our own authorities speak of it with approval, but it has been to a great extent superseded by Chloral in this disease. In the absence of the latter however, it would be useful as being a powerful sedative to the nervous system, and hence the high value set upon it by writers to whom Chloroform or Chloral were unknown.

** "Postulatio Volantur" pages 304 - 306.

*** This page 301
2nd Indication. To cut off emotional or physical perineal irritation.

The former is generally done by the means taken to carry out the first indications, named Chloroform or Chloral. The latter names to remove or relieve the irritation of the perineal nerves of the Stomach, Rectum, Bladder, Throat, but especially the uterus itself, is a most important part of treatment.

We therefore take advantage of the anaesthesia of Chloroform which lessens the reflex irritability, to remove as far as possible the causes of irritation. Numerous cases are on record where the evacuation of the uterine amni

As in D. M. Beddocks case, the empliying of the overdistended bladder, as in two cases judged by Dr. Tyler Smith, the free evacuation of the uterus that had been blocked up by hard tunics; so in Bezo and Ripley's cases judged by Tyler Smith, gave instant relief to the patient. One therefore refrain from producing irritation by abstaining from the use of blisters, of dashing cold water upon the face, or administering rectal purgatives, or to endeavor to remove all sources of irritation as mentioned under Phyllaxis. The most important point under this head, the perineal irritation commences with the presence of the Clot and hence demands separate consideration, embracing as does the question of Induction of premature labour, and immediate delivery and other immediate delivery. This is a most important question, whether we do leave the case to nature, allowing the fits to go on until with the fits continuing, or to resort to operative measures, and empty the uterus as quickly as possible. The question resolves itself into whether care more permanent lying be done to the once centres by allowing the fits to diminish, only resuming to complete the cure free. (The latter has been strongly condemned.)
* Ramboldtian Chrestum Medicinæ Surgery for all page 458
* Ishii Editomue Vacation Page 79
by many authorities, yet under deep anæsthesia we may consider it with less anxiety than it could formerly be done. After patient being deeply anæsthesized, nothing relieved all other sources of irritation as also mentioned, the fits should continue, unabated in frequency and severity, and showed as is often the case accompany the pain, therefore are warranted I think, if the passages be in a fit state, to deliver as once, for the expelling of the uterus will usually put a stop to the fits, or at least mitigate them for a time if no permanent injury have been done to the brain. Delivery may therefore be effected by the forceps or by version, the former being always to be preferred when possible, being attended by less risk both to the mother and child. But when, the fits still going on with anæsthesia or increasing severity, we can deliver by turning at an earlier stage than by the forceps, we are bound to give the woman and child the increased chance of success. For although the introduction of the hand into the uterus for the removal of the placenta often in cases of Ramachèmes 1/1 of depth is referred to by him, been attended by an immediate fatal result, yet as we have already observed the danger is much less under anæsthesia, and out of 2 of Smeller's cases were successful after version, although in 1 the waters were all evacuated, and the operation necessary protruded, and then might have been successful had version or been too long delayed. Mr. Smith adds a case of his own to that of Smeller's where the patient being unconscious, this not anæsthetic and the waters discharged, delivery by person directing stop pier version, and the patient recovered. Mr. Smith in the case of Mr.made on June 3, 1815, was successful in 10 cases created mostly by Anaesthetize version without waiting for the labor to follow.
* Braun page 61


* Braun page 62

* Barnes, Rent in Japan. Vol. 1873 Page 483
As regards to their method of delivery under these circumstances, as
Craniosomy and incision of the brow, we are not justified, in resorting to
them except under the most desperate circumstances. On account of its pain
alone, says Brown—without a substiute for inspiration, it is never justifiable
to proceed to the operation of Craniosomy. As a summary of treatment on
this point the following two aphorisms of Sir James Simpson are complete.

1. If the patient pass a week in a fit state, it is foresee, especially if there be
 reiterated pains, and
2 3. If the patient be calm, and the passages
 adequately relieved, rely on tone and relaxation. But if there be imminent danger
 deliver by long forceps, luminous, or incising the brow.

First stage. Labour has not commenced and fits have occurred, what is to
be done? If receduey chloroform or chloral they will occur with unabated
severity, and especially if the patient be asthmatic, we may puncture the
membranes. By thus relieving the uterine pressure we may effect much
good, as in Mr. McSkeen's case entire stop of the attacks. In the most
violent cases of eclampsia, says Brown, for results have been observed from
puncturing the membranes. Not only do we thusly diminishing the
volume of the uterus do good, but as Dr. Barnes points out the moment
labour is started, a case is made upon the nervous centres for nerve force to be
expended upon the uterus, hence its division to Brunnerini may thus be
operated. If this do not relieve, then we must rely on tone and relaxation,
anestheti or being freed by circumstances whether we
must wait patient, or proceed to accomplishment fast.

Induction of premature labour. This has been recommended when
inflammation has not appeared at all, but when the occurrence of
Albunminuria to any extent, along with oedema of face and body, and headache, will lead to the anticipation of an eclamptic attack. As we have already seen, however, Albunminuria need not be a considerable extent, especially if it be recognized, carefully watched, and proper prophylactic treatment employed. Eclampsia preceded by marked premonitory symptoms as headache, amnesia, vertigo, or if eclampsia has already occurred, then it is advisable to prevent risks to the mother by inducing labour; this is best done by puncturing the membranes or by the introduction of a Blaas Catheter. And we need have no fear of inducing labour, for where the symptoms are so marked, or the disease has actually occurred, nature comes to the rescue. Aboleni is the remedy. Thus in a case I saw lately, a woman 5 months pregnant, with marked Albunminuria, general oedema and intense headache, was suddenly seized with the most decided dyspnoea, causing her to draw forwards with the deepest inspiration, accompanied by quick irregular pulse 130, and unconsciousness of heart action. Inhalation of amyyl nitrite gave marked relief although the head not better, and regarding the case as renal Asthma arising from Bright's disease induced by pregnancy (she was perfectly healthy up to then) I was perplexed in my mind the question of whether I should induce labour, when nature came to my relief and next morning Aboleni took place and the foetus being expelled before my arrival. The patient made a good recovery, the albuminuria marked diminished in two days, and disappeared altogether in a week.
To relieve this toxæmia, this is rarely possible except
when we have an opportunity of nephlectic treatment; during the immediate
treatment of the disease we have not time to act upon it, and may as
raptly as possible act upon the bowels by enemata, upon the liver by
warm poulticing, and endeavour by dietetics to stimulate the kidney.
The small amount of this toxæmic element removed by bleeding to the
extent to which we would be warranted in doing it, would scarcely justify
our doing it for that purpose. At the same time, a small venesection re-
leaves the congestion of the kidney and might allow it to act more freely.
The same is assisted by dry or wet cupping over the liver, which can at
any rate do no harm. Young von Seeley (see S. von Seelery) in his
work on the formation of the leukæma, recommends the use
of bemere, citraneous acid, a common juice, in which he is followed by
kahl. As however the patient can generally not swallow, and the effect thereof is
doubtful, the administration of any substance to act on this indication
ought not to be continued, the exclusion of chloroformchloride. If we can
fulfill the first two indications we will control the disease, and close the
effect itself after delivery, and we will only do harm if by our endeavours to
counteract it we hinder interfering with the proper carrying out of the means
that fulfill the first two indications.