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Puerperal Convulsions

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PUERPERAL

CONVULSIONS.

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Of this most formidable disease Cazeaux says: "Among the various convulsive diseases that may appear during pregnancy, parturition, or lying in, there is one which has such well marked characteristics, and whose physiognomy is so peculiar, that I can scarcely comprehend the want of accuracy that still exists in most classic works on the subject." Meigs says: "It is of a nature so dreadful that we might reasonably suppose it to have been the object of much attention and of most careful study, for it ought to awaken in the mind everywhere, a strong desire to know and fully understand its principles and cure; nevertheless the thousands of examples of the disorder that have been observed and studied, have left us even in this enlightened age, with great differences of opinion concerning its nature, causes
and treatment.” With such declarations, by men of acknowledged eminence in the profession, before us, we proceed to the study and exposition of Puerperal convulsions with no little hesitation and misgiving. Offering this as our apology, “In a multitude of counsel there is safety.”

To a brief analysis of views propounded by prominent writers on this subject, first of causation and pathology, and last of treatment, we will append our small note of individual observation, thought and experience, with the hope of inviting a more critical and personal investigation and observation, and such expression of results as shall conduce to mutual professional progress.

Of course, Barnes in his Lumlian Lectures states the following propositions:

1st. Pregnancy and labor require for their due fulfilment an extraordinary supply of nerve force.

2d. This extraordinary supply of nerve force implies a corresponding organic development of the spinal cord.

3d. The provision of an extraordinary supply of nerve force implies a greatly augmented irritability of the nervous centres, rendering them more susceptible to emotional and peripheral impressions.

4th. The disturbance in nutrition occasioned by pregnancy, almost always entails some alteration of the blood, which increases the irritability of the nervous centres and favors the evacuation of any latent convulsive or other nervous diathesis as chorea, epilepsy, or vomiting.

5th. Where the blood change wrought by pregnancy is marked by albuminuria a poisonous action of peculiar intensity is exerted upon the nervous centres tending to produce eclampsia.

6th. Obstinate vomiting in pregnancy probably sometimes proves fatal, by the development of an organic or systemic morbid process.

7th. Menstruation resembles pregnancy in giving rise to an exalted nervous erethism; and ovulation is a primary exciting cause of epileptic, vomitive and hysterical convulsions.
8th. At the climacteric age again there is a renewed susceptibility to convulsive diseases.

9th. Pregnancy by evoking or producing convulsive diseases, under certain known and passing conditions puts to the test the various theories of the pathogeny of these diseases.

10th. The rational treatment of these diseases in women must take into account the two great factors in the production of these diseases, viz: an exalted nervous irritability under the stimulus of the reproductive functions and a lowered or empoisoned condition of the blood.

Physiological dissections and vivisections made by Schoff, Flourens, Hartwig, and Marshall Hall have fully established the fact that when the lobes of the cerebrum and cerebellum are both removed, convulsions may be occasioned to any extent by irritation of the cranial terminations of the spinal marrow. Marshall Hall found that while irritation of the brain proper of a dog produced no convulsive action, pinching the dura mater lining the cranium, to which branches of the 5th pair are distributed, did excite convulsion. (Tyler Smith Braithwaite’s Retrospect, Part II., p. 223). A fact thus established by such authority, we naturally look to spinal irritation (not to the irritation of brain substance except in small degree to a portion of its membrane) either direct or reflex as the true source whence convulsions arise. In support of, and in confirmatory evidence of the propositions quoted and the conclusions arrived at, by the experiment alluded to, and as well of exalted nervous irritability, we further quote from foot notes in Ramsbotham's Obstetrics, p. 27, in which that author expresses his belief that this affection, eclampsia, originates most frequently in some deranged state of the uterus itself, probably in its nervous system and consists in some irritation propagated from that organ to the brain. He says that he has met with some cases that strongly impressed him with the idea just expressed, the most striking of which are the following: He was called by one of the midwives of the Royal Maternity Charity, to the assistance of a
woman under puerperal convulsions toward the close of pregnancy. She had been bled largely by a medical friend before his arrival; the bleeding had relieved her partially, but it was thought right to repeat it. A third quantity of blood was taken sometime after with such beneficial effect that the convulsions entirely ceased, and in a few hours consciousness had gradually returned.

About fifty hours after this attack active labor came on; and in less than five hours the child was born—dead. The placenta did not descend and two hours subsequent to the expulsion of the child he was again summoned. He found the patient perfectly sensible, in good spirits and making no complaint. There had been no hemorrhage, the uterus was not strongly contracted, and the placenta was still retained entirely within it. Under no greater anxiety, he says, than he usually feels when the placenta is retained, he proceeded in the ordinary way to remove it. The moment he had passed his hand completely into the uterine cavity the patient turned upon her abdomen and without uttering any expression of pain went into a convulsion, though not of a severe kind; intense coma supervened which yielded to no treatment that he could devise and terminated fatally in about two hours from the removal of the placenta. Forty-eight hours after death he reports having made an accurate inspection of the body. The dura mater, though adhering a trifle more firmly than usual to the inner surface of the cranium, was healthy in appearance; the vessels of the brain contained less blood than ordinary; the plexus choroides was quite blanched; there was no fluid in the lateral ventricles; none between the membranes at the upper part of the skull, but about two drachms at the base of the brain; no extravasation of blood existed in any part of the cerebral mass. The viscera were all healthy; the uterus was well contracted, nor did it present any uncommon appearance. This, he goes on to state, was as clear a case as can possibly be made out, of irritation propagated immediately from the uterus to the brain, and he had no doubt that if the
placenta had not unfortunately been adherent, but thrown off naturally, the woman would have recovered perfectly. Two other similar cases, not quite so strong he says, subsequently came under his observation. He then relates a case from Ingleby of a patient who had had no convulsion before delivery. He says, "an esteemed friend once found it necessary to pass his hand into the uterus for the purpose of removing an adherent placenta, the ergot of rye having been previously administered. The introduction was very carefully performed. The straining and opposition to his efforts on the part of the woman were exceedingly great; and at the moment when the operator's hand had reached the organ, Ingleby's hand making counter pressure on the abdomen, the patient became violently convulsed, and died in less than a minute."

Here were patients suffering from no appreciable lesion, (unless the two drachms of fluid found at the base of the brain be deemed such) convulsed fatally from by no means an uncommon or unwarranted irritation of the uterus.

The reflex action had induced entire suspension of the functions of nerves of organic life.

Dr. Tyler Smith (Braithwaite, part XI., p. 224), says: "Labor is a function of the excito-motor system, and 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 the incident nerves, namely, those passing from the uterine organs to the spinal marrow, such excitement depending on pregnancy, labor, 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—of those acting primarily on the spinal marrow, or centric causes, and secondly those affecting the extremities of its incitant nerves—causes of eccentric or peripheral origin."

This proposition is advanced in opposition to the admitted general opinion, that they are the result of cerebral congestion, as advanced by Gouch, Churchill, Powell and many others, and
accepted by a considerable portion of the profession of to-day as I think will be evident to any one taking pains to obtain individual opinions of theory and treatment.

Dr. Cormack, of Westminster, England, holds that a very close connection exists between renal congestion and puerperal convulsions, that—though not always, yet generally—they (puerperal convulsions) are the toxicological results of non-elimination of the excretion of the blood, depending in many—far the greater number of cases—upon renal congestion, caused by the pressure of the gravid uterus on the renal veins, while the medical profession of to-day largely claim this toxæmic poison to be albumen. He also attributes it to excrementitious matter from the foetus and from the elements of milk. Bedford, in his work on "Diseases of Women and Children," p. 473, queries if this toxæmic poison may not be kiestein, uneliminated. This not only, in his view, produces convulsions, but also various other distressing symptoms manifested during pregnancy, as excessive vomiting, a salivation that sometimes occurs, and the various neuralgic pains often so intractable. The suppression of the lochia often, in his view, develops convulsions, and these occurring post partum he thinks indicates either such suppression or structural renal disease. Tyler Smith sustains this view and states that "it is difficult to estimate too highly the influence of impurity of the blood as a direct irritant of the nervous centres in pregnancy." He then enumerates "pressure of gravid uterus on the intestinal canal causing constipation, pressure upon emulgent veins causing albuminuria and retention of urea in the blood, pressure upon hepatic vessels often producing pink deposits in urine, and lastly, pressure upon the thoracic viscera, causing deficient oxygenation of the blood as sources of such impurity." But, he adds, "While all these toxæmic causes exist, certain vicarious or complimentary secretions are set up which tend to preserve the blood in a healthy state—sickness and vomiting, the salivation that sometimes occurs, increased action of the glands of the axilla and skin generally, and the
secretion of milk in the mammae during the latter months, often occurs, especially in cases of albuminuria, are all in a measure, as doubtless intended to be, largely compensatory in their action. The foetus also, he recognizes as an excretion, as that which would otherwise be effete, goes to form liquor amnii, membranes, bones, etc. However, in his view, only intense toxæmia—as in poisoning by carbonic acid—produces convulsions depending solely upon the state of the blood (Braithwaite, pp. 20, 197).

After stating that this "disease is unlike apoplexy, because in common apoplexy we seldom have the convulsive fits," especially oft repeated, with intervals of perfect quiet and consciousness, and seldom or never is paralysis produced as a consequence of puerperal convulsions, Ramsbotham goes on to state (p. 425) that the most usual proximate cause is probably pressure on the brain; this pressure being sometimes produced by the rupture of a vessel causing a sudden effusion of blood, sometimes by serous exudation into the ventricles or between the membranes. Sometimes (p. 427)—and for the most frequently—by simple congestion of the cerebral vessels themselves." Yet he says the disease has often proved fatal, without any organic lesion being evident on dissection, and without even the vessels being observed to be preternaturally full. He then asserts that in this respect, also, there is a strong analogy between apoplexy and puerperal convulsions, quoting Bruscie, Korheim and Abernethy as having recognized a species of apoplexy to which they applied the name nervous, because no distinct lesion was discoverable. Churchill also recognizes this fact, (Dis. of Fem., p. 458) for in speaking of the pathology of this disease he says, "In a majority of cases a post mortem examination affords but little information. In many instances there is no alteration whatever from the healthy state of the brain. He then cites Bouteilloux, La Chapelle, Cruvehié, Boudelocque, Cinselli, Callens, etc., as having proved the fact; moreover, he states that sometimes the vessels of the brain are turgid with blood, and in other cases there is a quantity of serum effused on the surface and base of
the brain, or into the ventricles; occasionally, also, fluid is found in the pleura and pericardium to which latter with equal force the convulsions might be referred.

An obstetrician of Swaffham, England, Dr. Rose, gives a lucid (?) statement of the cause: according to his belief "a peculiar state of the nervous system." Few doubt the fact, while none recognize in that the intelligent observation that commands a more extended investigation of his observation either of cause or treatment.

Another writer states that true puerperal convulsions partake both of the nature of epilepsy and apoplexy, and may be considered as apoplexy with violent spasmodic paroxysms super added, the latter being occasioned by the great degree of nervous excitability to which all pregnant and parturient females are liable. He then enumerates as causes, plethora, compression of aorta, long continued mental excitement, and highly electrical condition of atmosphere and persistent damp foggy weather.

Meigs in this relation says, "all women are more or less influenced in sickness and health by the nature and forces of their generative sphere—an influence best expressed by the word hysteria. Pregnant women are far more under this influence than others as it is greatly developed by the processes of gestation and parturition." This sur-nervous excitement he claims to be independent of any change of the blood or nutrition of the brain or nervous system; he regards it is an organismal influence, pure and simple, and that it has no other name than hysteria, that hysteria is the fundamental principle of this disorder, and that to it we ought to attribute every sort of childbed convulsions. Coupled with this he admits its mechanical changes due to altered position of the varied abdominal viscera from increased size and increased demands of the gravid uterus. Sometimes these mechanical changes induce altered secretion in organs wrought upon by them; thus we may have albumenuria from undue disturbance of hepatic and renal functions, that the moment the mechanical pressure is relieved is readily corrected by the simple unaided forces of nature.
It is a noticeable fact that a very large percentage of puerperal convulsions occur in primipara, and a majority of these are of firm flesh, that is the muscular structures are in good tone and in active condition. The soft flabby women are rarely subjects of convulsive seizures; hence eminent authority (Meigs) puts this condition of abdominal muscles, holding firmly the enlarged and enlarging uterus against the abdominal viscera; in time by such pressure interfering with normal intestinal action, inducing thereby large fecal accumulations in the colon, that again in turn exerts a serious pressure upon mesenteric, renal and crural veins interfering with free return of blood through them, and inducing consequent congestion or engorgement of the corticular portion of the kidney (the first stage of the so-called Brights disease), and elimination by that organ of albumen as the primary cause of puerperal convulsions. By a large class of writers, prominent among whom is Levis as quoted by Churchill, this agent—albumen—is earnestly charged with their causation, but another class nearly as large assert the contrary.

Churchill quotes, Levis of London, as saying that "having carefully examined the urine of every woman attacked by convulsions for a long period of time, that had come under his notice both in the Lying-in Charity of Guy's Hospital, and his private practice, he has detected albumen in every case but one at the time of the convulsions, and moreover that he had examined the urine of upwards of 50 women, and the result has been that in no cases had he detected albumen except in those in which there had been convulsions, or in which symptoms have presented which are readily recognized as precursors of puerperal fits (Churchill Mid. pg, 451). Cazeaux, after having encountered a large number of cases that exhibited the presence of albumen in the urine, at once concluded that he had discovered "that which had escaped the notice of older observers, and hence believed it to be the dominant fact in the etiology of puerperal convulsions." We more fully quote Cazeaux, page 716, "since albuminuria is present in the immense majority of
eclamptic women, it, or rather the disease of which it is a symptom, may be rightfully regarded as the predisposing cause of eclamptic convulsions."

While this is the avowed experience of the writer quoted, many other equally reliable observers, have in large numbers of convulsed women sought vainly for this agent. Meigs (Woman and Her Diseases pp. 666), says: "you will find from Bright in 83 cases of Bright's Disease there were only five cases of convulsions, and that Dr. Imbert Goubeyer found from different authority that in 164 observations of albuminuria in pregnancy, 94 of them had convulsions; that 65 pregnant women with albuminuria had no eclampsia, and that five women had eclampsia, although they had no albumen whatever. Personal observation of twenty cases during a practice of twenty-five years in which tests were made of one-half the cases, gave albumen in only two; of those one was anaemic and oedematous, and was recognized as a probable case of Bright's Disease before the test was made. It, as expected, proved fatal. In this case the kidney disease was not dependent upon the pregnancy.

If albuminuria be the true cause of these convulsions, why do so large a percent of cases in which this substance is found escape convulsions? Is it not proof that a cause more deeply hidden than this discovered principle is the true one? Just here we would invite attention to the fact that while many refer to uræmic poisoning as the true cause, there seems much disagreement as to what constitutes uræmic poisoning. Albuminuria co-existing with well marked cases of uræmic poisoning, and accompanying convulsions, and being an element easily revealed by the simplest chemical analysis, has been charged with being the real poisonous element expressed as uræmia. Later investigators, among whom are Frerics, Brown-Sequard, Becquerel, Claude Bernard, Lyman, Carpenter, Beyer, Gebourt and Brown, claim that this poison is carbonate of ammonia circulating in the blood; that has there been developed through decomposition of condensed urea by the presence of a ferment as yet unknown,
and they report experiments made by injecting this agent—carbonate of ammonia—into the veins of dogs, convulsions universally being produced. In support of this proposition, several of these physiologists have shown with Bright and Goubeyer that albumen exists in abundance in a large number of puerperal as in other cases without the development of even a tendency to convulsions.

Blot reports, as noticed in "The Maternity of Paris," 41 cases of albuminuria only seven of whom were at any period convulsed; others make the ratio of convulsions occurring in cases exhibiting albuminous urine, as one to ten. (See Robert's Urinary and Renal Diseases, page 290).

Meigs (Woman and Her Diseases, pg. 661), speaking of albumen as the essential cause of convulsions, enters into a careful comparative computation of the amount of albumen discharged in an individual case of convulsions through the kidney in three days time and showed that the amount equalled that ordinarily contained in five eggs equal to 1 2/3 eggs per day. He then humorously proceeds to say that "a poor little chicken will often give an egg per diem for nine or ten months of the year and still keep fat and fit for the table with no exhibition of convulsibility. By successive haemorrhage also one may habitually lose an equal amount and still no convulsion supervene; hence to charge upon such trifling waste of albumen results so momentous and fearful unless such results are found universal or nearly so, to the cool careful observer would seem preposterous.

This author having thus disposed of albuminuria as a cause, attributes these convulsions to a "peculiar state of the system dependent upon the parturient state," which, following the views of Wiegand he terms convulsibility, and thus speaks of this condition in explanation of the term used, "whether we advert to the changed susceptibility of the pregnant woman which develops a state closely allied to the hysterical condition, or whether we consider the extreme violence with which the blood
of a woman in labor rushes along the arteries of the encephalon, we must admit that the brain cannot but be in an excited state and prompt to exert its powers in such a manner as to convulse the whole or part of the muscular system; the activity of the cerebro-spinal system is always proportioned to the quantity and impetus of the blood circulating in the vessels, and every woman in labor whose pulse becomes hard, frequent and violent, ought to be held liable to be convulsed by the neurosis extricated in consequence of such a circulation." While without much actual experience we could readily admit the condition Meig's terms "convulsibility," and reasoning to conclusions based upon the apparent condition of women in the throes of labor, expect a large proportion, if not all, cases of puerperal convulsions to arise in the second stage, our experience thus far proves the larger per cent., indeed we may say all cases, with one single exception, that were not suspiciously hysterical, originated either previous to apparent entrance even upon the first stage, during this stage or subsequent to the completion of labor. Post partum cases have varied in period of accession of convulsions from four to sixteen days after completion of labor.

With this great diversity of opinion concerning the etiology of this formidable malady, it especially behooves every practitioner to exercise the greatest care in the investigation of every case coming under his observation; that he analyze with great care and method, and that he never allow himself—as without doubt has too often been the case—to become so absorbed in the present condition as to forget that the condition may possibly be due to other than puerperal causes.

True, in our zeal to develop cause, we may not delay active efforts for relief as is related of a pupil of the celebrated Louis, who had so thoroughly been taught method by his instructor as to do nothing without first recording; when called to reduce a fractured leg, accordingly he took out his note book and recorded name, age, date and ancestral troubles of the sufferer, and in obedience to rule asked "were your parents, grand
parents, uncles or aunts subject to broken legs or arms?" Such precision may doubtless be a little too formal for such an occasion, and for good practical results; yet in all the history of the disease under consideration, it is painfully evident the error has been in an opposite direction, that opinions and conclusions have been formed much too hastily, and under circumscribed examination upon which have been based lines of treatment affording very unsatisfactory results. Immediate condition and prior history should be critically examined that approximate dependence may be determined, and that remedies may be directed to cause rather than effect.

After having examined in detail the various theories of pathology and cause of convulsions, occurring in the puerperal state, we find ourselves far from being qualified to speak with the confidence of Cazeaux, as having "discovered that which had escaped the notice of older observers," yet are compelled to assert the conviction that judgments have in the main been formed far too hastily, and without the careful analysis such maladies demand. Their onset is usually so fierce, so unexpected, and attended with such painful and horrifying developments that a cool and critical analysis on the occasion would seem almost heartless. Yet in other cases, nearly if not equally as trying, the medical man is expected to scan the different steps of disease with very great care and to form an opinion on not one or two, but a multitude of cases presenting analagous features. A convolution occurring in a non-puerperal individual would be closely investigated as to the real cause; if form and habit indicate an apoplectic condition, and especially if unconscious state be prolonged on the subsidence of the convulsions, the fit would be pronounced apoplectic, especially if the victim be florid and full blooded and if form and age present favoring condition. If history revealed the fact that convulsive seizures had previously been known, or that she had suffered from injury of spine or of skull likely to produce depression of inner table and irritation of that portion of the dura mater supplied by nerves of the fifth
pair, or if the seizure should be accompanied with frothing of the mouth, the peculiar whistling respiration and biting and chewing of the tongue, incident to an epileptic seizure then it would very properly be deemed epileptic. If of excitable temperament possessing little self-control, the fits succeeded or preceded by emotional outbursts, then, especially in the earlier months of pregnancy, or when suffering from the various new experiences of a first pregnancy, very properly it would be ranked as hysterical. But the emotions in our belief are far more potent in the production of this most formidable disease, than is generally credited, and should far more frequently be closely interrogated than seems to have been done by most investigators.

Every medical man has been made painfully conscious of the power that depressing emotions exercise in arresting the process of assimilation and digestion. Is it not possible in the excited condition of the nervous system, (erethism, you may term it), consequent upon her changed condition, that depressing emotion may be greatly exaggerated when the woman reaches that state, always approached with more or less fear and dread, her confinement, and finally prove the simple explosive, that needs only a touch, a shock it may be, such as the manipulation mentioned by Ramsbotham, that all unexpected shall develop a fatal convulsion, two or three cases have presented themselves that forcibly impress this fact upon the mind:

1st. The wife—as supposed of a tailor that had but a few months been a resident of our city, was found in labor and violently convulsed. A medical friend had been in attendance several hours; had bled her freely with no alleviation of convulsion or inducing any change unless that of making the coma more profound. The pulse was soft, no puffiness of extremities or of the face, other than we would expect as the result of the convulsion. The os was well dilated, and the pains of labor well marked, tests of urine gave no traces of albumen. The labor was encouraged with all practical speed; chloroform was admin-
istered, but with no relief of the convulsions. At length the labor was completed and the secundines expelled; uterine contractions were normal, yet with no returning consciousness, and in two hours after completion of labor, death came to her relief. The medical attendant resided just across the street from the patient and had remarked upon the unusually happy life, the pair had seemed to pass together until one or two days anterior to her illness. We subsequently learned that the man had another wife living of which until this time she had been in ignorance.

Another case of like character, indeed, almost the exact counterpart of this just given, only that convulsions did not set in until nearly a week subsequent to a very comfortable confinement; the date of their accession being immediately after receiving information that she had been deceived and that she was not the true wife. Another convulsion supervened upon subacute cellulitis and co-incident with development of pyæmia, two weeks and two days subsequent to confinement.

As may well be supposed, a disease whose pathology is so imperfectly understood, and whose cause has been referred to such varied conditions must be subject to great variety of treatment, for pathology and cause are true indices to appropriate remedial measures. Cerebral lesions or active congestion of any important organ being the supposed cause, abstraction of blood in greater or lesser quantities may be admissible. On this hypothesis depletion has been indiscriminately urged and evidently in a great majority of cases has been pressed to the greatest extremes with little or no idea of application of physiological principles. Often this course has accidentally resulted in manifest relief; but too often we are compelled to believe, has been productive of a fatal issue.

Thus, Denham relates that a patient was bled freely with no apparent relief; the convulsions continued, but during a subsequent fit, the bandage slipped from the arm and a great quantity of blood was lost and the convulsion ceased. Giving us no further light as to the character of the fit, upon this single case
he bases the conclusion that copious bleeding is the important and only reliable remedy and advises that fifty, sixty, or seventy ounces of blood be cautiously taken away. Methinks should one of us, instead of the renowned Denham, hazard a theory of treatment upon such trifling experience, we would justly receive very caustic criticism.

Hamilton advises the abstraction of forty ounces of blood, and if in two hours the patient is not relieved, the abstraction of forty ounces more. Gooch, with characteristic egotism, relates that a little woman aged 18, of spare habit, was seized with pain in the head and with trembling, when she fell down convulsed. This, he says, was the first case he had ever seen and though the patient was not plethoric; he bled her to the amount of twenty ounces; before the bleeding ceased she opened her eyes and the convulsions were suspended. This was followed with cold applications to the head, sulphate of magnesia and infusion of senna every three hours, until the bowels were well evacuated. Notwithstanding the favorable impression from the bleeding and after purgation, the convulsions shortly returned, when the bandage slipped from the arm and she lost eight ounces more. In haste the husband ran for him, and immediately he abstracted twenty ounces more, when the convulsions ceased but the patient remained insensible. He ordered a continuation of "Black Draught." At ten o'clock at night, after having lost in the twelve hours previous forty-eight ounces of blood, she still remained much the same. He now bled her thirty ounces; the convulsions ceased, and in the morning she was decidedly better. In the course of the day labor-pains supervened and she was delivered of a dead child, and gradually recovered. In neither of the cases just cited, is any intimation given as to the rationale of the heroic treatment adopted.

As an instance of a class of cases, emotional in character, that by one considered of sufficient professional standing to receive an appointment as physician to an important hospital in England, we will relate a case as reported by Dr. Woodhouse of
"The Royal Berkshire Hospital." This case occurred post partum, as the Doctor relates, in consequence of a trifling indiscretion in diet, and also some little disappointment in being unable to procure the nurse she had engaged, for one week later than the actual occurrence of the confinement. He admits that she was subject to hysterical paroxysms, and says that he found her convulsed, and the epigastrium enormously distended with gas. The convulsions were so fearfully severe that the friends and attendants believed her dying yet, he says he could find no other source whence these symptoms could arise than the irritation of the stomach from a cup of chocolate and a Bath bun. He concludes that copious emesis is demanded to remove the offending bun, so administered sulph. zinc, ipecac, calomel and salts, all in rapid succession, but without relief. This treatment occupied a period of nearly four hours. At length a "happy thought" suggested itself, and a mixture of castor oil and turpentine was prepared and administered in teaspoonful doses. The first teaspoonful, says this sage Doctor, had scarcely been swallowed, "when the machinery of relief was set in motion, the bowels were copiously relaxed, volumes of flatus were expelled; her face brightened up and consciousness so far returned as to offer resistance to the remainder of her potion. She had no more convulsions and finally recovered. Such is the history of a case published in Braithwaite's Retrospect, part XXXIV., p. 236. This was a hysterical case with a hysterical history, suffering from disappointment and therefore quite naturally should have been considered emotional; but instead, a little chocolate and a bun were charged with the mischief. Heroic remedies were administered, but the reason of including calomel among them is to our mind unappreciable. From the peroration indulged in after the administration of the teaspoonful of castor oil mixture, we are led to conclude that this writer attributes all the relief gained to this simple mixture. How is it possible that a man of intelligence can arrive at any other conclusion than that this was none other than a hysterical convulsion occurring in connection
with her puerperal condition, and which required little save judicious antispasmodics, possibly trifling stimulation and cold douche to head and face, with addition of mild laxative?

That cases of apoplectic tendencies may require the free use of the lancet; that a distended colon may urgently require removal of its contents, that retention of urine may induce convulsions that will be most effectually relieved by the use of the catheter is absolutely certain, but that every case must be bled, physicked, or catheterized is not established. Rather that in administration of remedies or the use of mechanical help, good common sense and ordinary judgment instead of routine is to guide and direct the medical practitioner.

An epileptic suffering from convulsions at the puerperal period must be treated as an epileptic, perhaps more rigorously and rapidly because the condition is more liable to an early fatal issue than if not thus complicated. Bromide of potassium and bromide of ammonium may be freely administered after being satisfied that the colon is not excessively distended with hardened faeces, or its evacuation secured. These failing in speedy control, the addition of gelseminum may still further allay the cerebro-spinal irritation. The paroxysms still continuing severe and of frequent recurrence the inhalation of a few drops of nitrite of amyl gives promise of temporary relief.

If convulsions result from emotional causes, other than hysterical, or from uterine or vesical irritation, reflex in character, the bromides and gelseminum may be used with advantage, which failing the use of chorals or anaesthetics promises favorable results.

Forcible dilatation of the uterus and delivery, though very largely advocated in this class of cases is of very doubtful utility as liable to aggravate the already irritable condition. If dilatation has been accomplished and pains are inefficient, the use of forceps as abbreviating the period of greatest irritation is eminently proper, but turning and craniotomy simply for the purpose of bringing the labor to a speedy termination is justly
reprehensible, notwithstanding their frequent advocacy and their having been favorably adopted. In cases exhibiting marked albuminous or other toxæmic poison Dr. Golding Bird advocates, and Meigs endorses, the administration of benzoic acid and Bicarbonate of potass, four grains of the former, fifteen grains of the latter, every third, sixth or eighth hour, according to the severity and frequency of the convulsions. In such cases anaesthetics may be used oftentimes with profit, but requires extreme caution in their administration.

Without classification, and empirically, tinct. verat viride has been recommended and administered in doses varying from three drops to a teaspoonful; one case came under notice in which the larger quantity was administered with no alleviation of the convulsions.

A friend, now deceased, of Oneida county, N. Y., was in the habit of administering ergot freely, in table spoonful doses of the etherial extract, with, as he claimed, happy results; this was done empirically. Dr. Hitchcock, of Kalamazoo, in an essay read before the Wayne County Medical Society and published in the October number of the Peninsular Journal of Medicine, 1874, advocated the free use of ergot and stated that since he and Dr. Mottram, also of Kalamazoo, had adopted the use of the ergot, neither had lost a case. The theory of its action as propounded by them is that the physiological action of ergot is upon the unstriped muscular fibre to produce tonicity and contraction therein, and that its therapeutic action is chiefly upon the unstriped muscular fibre as found in the coats of the blood vessels. Dr. H. claims that ergot has the power of lowering the pulse from ten to seventeen beats per minute as demonstrated by experiments of Porole, and Quinton Gibbon. He states also that upon this ground Dr. Brown Sequard has proposed the administration of this agent in spinal paralysis dependent on chronic myelitis. Convulsions arising from local congestions quite likely might be greatly modified by the action of this remedy. We have administered it in puerperal convulsions for the purpose of accomplishing a more speedy delivery, with no alleviation of the convulsion, but have had no opportunity of testing its action since attention has been directed to this supposed influence.

Results in a single case were deeply impressed upon the mind and led to the query, if powerful counter irritants remotely applied, might not in many cases with propriety take precedence of all other treatment. The case was a partially hemiplegic patient, found suffering from powerful puerperal convulsions. The hemiplegia had existed a number of years and had, as stated, supervened upon a severe attack of typhoid fever. An ex-
amination revealed labor just commencing, os beginning to dilate. The convulsion was co incident with a labor pain. The patient was very spare; no oedema, but the extremities were very cold. Coma was profound, at least no indications of consciousness could be obtained. For the want of anything better at hand a small Dover's powder was administered, more with the purpose of inducing relaxation than anything else, and the feet being cold a hot iron was ordered to them. The progress of labor was encouraged as rapidly as possible. Chloroform was sent for and being received just as the labor was about completed, but one inhalation was given and the labor was accomplished. The convulsions ceased, but the patient, still unconscious, seemed very nervous. An eighth of a grain of morphine was administered after the expulsion of the placenta. No more convulsions occurring the patient was left in quiet. Next day, consciousness had not returned, neither had she been convulsed since confinement. On the second day, consciousness returning, complaint was made of soreness of one leg. On examinations the whole impress of the sad iron was found burned into the calf of the leg. The revulsive effect must have been great, yet it had been utterly impossible to restrain her during the convulsions, the limbs being sometimes drawn close to the body and again extended, with great violence, to their utmost.

Having observed with some care, and investigated with some zeal, we are forced to the conclusion that the only sure road to success in the treatment of puerperal convulsions lies not in treatment of the paroxysm but on the prophylaxis.

Eight years or more have elapsed without a single case of puerperal convulsions having come under notice, although indications of such an issue have been frequent. Among these are frequent paroxysmal cephalalgia, tinnitus aurium, giddiness, excessive nervousness, constipation, abdominal soreness, etc.

Every engorgement is closely watched and inquired after, and any of these symptoms presenting are appropriately met and the convulsion averted. The headache is especially a symptom demanding attention. This may be relieved by enemata or mild laxatives combined with a nerve tonic as nux vomica and quinia or bark, together with bromides or iodides as seem with the individual case most appropriate. Of course the secretions of the kidney may be closely looked after and any uterine or vaginal irritation relieved by lotio nigra or other mild soothing lotion, or suppositories of iodoform.