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Contributors

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PUERPERAL CONVULSIONS,

BY

C. A. LINDSLEY, M. D.

READ BEFORE THE

New Haven County Medical Society,

APRIL, 1858.

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PUERPERAL CONVULSIONS.

*Dissertation read before the New Haven County Medical Society,
April 8th, 1858.*

BY C. A. LINDSLEY, M. D., OF NEW HAVEN.

MR. PRESIDENT AND GENTLEMEN:—Perhaps our profession are not called to contend with any other disease, so formidable in its character, respecting which the best authors agree so exactly in the treatment. With scarcely a dissenting voice the grand chief remedy is venesection,—copious depletion, almost without reservation.

Dr. F. Churchill says: "The first thing to be done is to take away blood from the arm or temporal artery *largely*; if the paroxysms continue, this may be repeated."

Dr. Copland, in his Dictionary of Medicine, in the article on Puerperal Convulsions, observes: "Depletion may be carried further in those states of the disease which assume the character of eclampsia, or which are attended by great fullness about the head, or stertorous breathing, than in almost any other malady."

Dr. Cazeaux remarks: "At the head of the list of curative means we must place sanguineous emissions, which have been resorted to under *every form*. To these, therefore, we must first have recourse."

In like manner, Dr. Rigby, Dr. Ramsbotham, Dr. Meigs,—in fact almost every authority,—recommend free depletion. The inference naturally drawn from this fact would be that the etiology and pathology must be as well understood, and the lesions of the disease as uniform, as the treatment recommended. An inference, however, that would be far, very far from the truth.

Indeed, the utmost confusion prevails among these same authors concerning everything else beside the treatment.

To illustrate, I give some quotations in reference to the causes, from several contemporary writers who will be recognized as authority.

Dr. F. H. Ramsbotham says: "The most usual proximate cause is probably pressure on the brain; this pressure being sometimes produced by the rupture of a bloodvessel, sometimes by serous exudation into the ventricles or between the membranes; sometimes, and by far the most frequently, by simple congestion of the cerebral vessels themselves: as to the remote causes the subject is at best but unsatisfactory and little understood."

Dr. Rigby remarks that: "The exciting cause of eclampsia parturientium is the irritation arising from the presence of the child in the uterus or passages, or from a state of irritation thus produced continuing to exist after labor. The predisposing causes are general plethora; the pressure of the gravid uterus upon the abdominal aorta; the contractions of that organ during labor; constipation; deranged bowels; retention of urine; previous injuries of the head, or cerebral disease; and much mental excitement."

Dr. F. Churchill declares: "It is exceedingly difficult to state anything very definite as to the cause of puerperal convulsions."

Dr. Locock asserts that: "The immediate causes of puerperal convulsions are often very obscure. They appear sometimes to depend on a loaded state of the vessels of the brain; at other times the brain appears to be influenced by distant irritation, either in the uterus, or in the digestive organs; and again, in some cases puerperal convulsions are induced by a peculiar irritability of the nervous system."

Dr. Collins says: "I conceive we are quite ignorant as yet of what the cause may be, nor could I ever find on dissection any appearance to enable me to even hazard an opinion on the subject."

I might exhaust your patience, gentlemen, with quotations from the most eminent obstetric writers, exhibiting the discrepancy of opinion and doubt that exists concerning the causes of this dreadful malady.

Any treatment founded upon no better basis than the guessings and surmises in the above quotations must be almost or altogether empirical.

The therapeutics of any disease is philosophic and scientific just in proportion as it is the result of well understood pathology and etiology.

In regard to puerperal convulsions, it remained for the masterly mind of Marshall Hall, the discoverer of the functions of the spinal marrow, to give the key to the solution of this obscure problem. He has demonstrated by repeated vivisections, which other observers have confirmed by the severest tests, that lesions of the encephalon induce paralysis *only*: whilst lesions of the medulla oblongata or spinalis

induce convulsion or paralysis according to their severity. Hence it follows that the seat of convulsion of every form must be in the spinal column; which opinion is supported by the experiments of Magendie, Schoeps, Flourens, Hertwig, and others.

An interesting experiment performed upon a dog by Dr. Marshall Hall, proved that irritation of the brain produced no effect, while pinching the dura mater lining the cranium, to which are distributed branches of the fifth, excited convulsions; so that the brain is actually inexcitor of spinal action, while the meninges are strongly excitor. The brain, therefore, has neither nerves of common sensation nor of excito-motion, although it is the sensorium commune. Pathology too gives support to the same idea, for we know that a tumor may exist in the brain without causing any cerebral or spinal symptoms, while a spicula of bone on the interior of the skull may occasion epilepsy. If the tumor does cause convulsion, it is by extension of irritation to the membranes, or by pressure on the medulla oblongata.

From such facts as these, and many others, the inference is conclusive that the nervous system is to be considered both physiologically and pathologically as two essentially distinct and separate organs, named by Dr. Marshall Hall the cerebral system and the excito-motor system. The last, with which we have more particularly to do, comprises the medulla spinalis and oblongata, with the corpora quadrigemina, forming together one distinct organ. Of this, Dr. M. Hall makes the following very comprehensive remark: "I believe that the whole order of spasmodic and convulsive diseases belongs to this, the excito-motory division of the nervous system, and that they can not be understood without a previous accurate knowledge of this system."

But the authors above quoted agree, so far as they agree at all, in locating the disease in just the other division, the cerebral system, the brain. Forasmuch, however, as neither physiology nor accurate observation in pathology will sustain their theory, we must abandon it, or rather discover, if possible, the true relation of the cerebral symptoms to the disease.

If it is the fact, as authors assert, that cerebral congestion is the cause of the attack, at what period of the labor ought we most confidently to expect the seizure? Most assuredly, and for every reason, when the congestion is the greatest,—that is, in the second stage of labor, when the violent contraction of the uterus expels the blood from its parietes into the rest of the system; when the powerful exertion of the voluntary muscles pours out a still larger quantity of blood into

the arteries and veins; when the head of the fœtus in the vagina has excited the reflex action of the expiratory muscles, causing with every pain, partial or entire closure of the glottis, interfering with the proper oxygenation of the blood in the lungs, obstructing its return from the head, and often distending the veins of the head and neck until partial asphyxia occurs. Surely, if simple congestion can produce convulsion, it is at such a time we should expect it. But such is not always the fact. The patient is often seized even before labor has commenced, or in the first stage when the circulation is undisturbed, and there is as yet no excessive cerebral vascularity; and again, she may pass through the ordeal of the second stage unharmed, and be seized with the fits after the labor is concluded.

Does not this fact alone sufficiently refute the generally received opinion that congestion of the brain is the chief cause?

If congestion of the brain is the principal agent in the production of eclampsia, how can we explain this undisputed fact, that eclampsia occurs both before and after the most enormous congestion of that organ as frequently as during such congestion? Because engorgement of the vessels of the head is a constant symptom of the fit, it is not proof that it is the cause of the fit. Because after death from convulsion, sanguineous and serous effusion into the ventricles and between the membranes is found, it is not proof that such effusion was the cause of the convulsion. It is much more probable that both the engorgement and the effusion are in most cases results,—consequences of the disease,—and not the cause. Looking from another point of view, congestion of the brain is precisely what might be anticipated as an effect of the fit. During the attack almost every condition exists that would of the most inevitable necessity produce distension of the cerebral vessels and effusion. The fact is, gentlemen, observers have been looking through the wrong end of the glass; they have seen every object distinctly, but they have misinterpreted them.

In stating the case thus strongly, however, I do not wish to be understood as saying that congestion and effusion are never the cause of convulsion; on the contrary, I believe that sometimes they are the cause. Now to illustrate exactly my idea I will suppose two instances. If during the fierce exertions of the propulsive stage of labor, rupture of a blood-vessel occurs, producing by the effusion counter-pressure upon the medulla oblongata, and as a consequence convulsions, the cause must undoubtedly be ascribed to the effusion. But if the patient is thrown into convulsion by irritation of the os uteri, and during the fit, rupture of a blood-vessel occurs with effusion into the



brain, although after death precisely the same amount of coagula is found, and even in the same locality, the diagnosis of the two cases is vastly different. In the first case the coagula must be considered the cause, in the second only the effect, of the disease. I find a case in my note-book interesting in this connection, as illustrating some of the above remarks. It is as follows :

August 12th, 1855, I was called early in the morning to see Mrs. S., forty years of age, about to be confined with her tenth child. Her travail was tedious during the day, but in the evening the pains became more energetic, and about nine o'clock P. M. she was delivered of a healthy child, attended with considerable though not excessive hemorrhage. Nothing unusual occurred for more than a week, excepting a headache, which she said she had suffered during the last twelve months. As she said that her former attendants had told her it was neuralgic, and as it was not unusually severe, I did not investigate it nor prescribe especially for it. Her lochia continued about ten days in normal quantity and color. Her milk began to be secreted on the third day, but not so abundant as usual, and gradually diminished. On the 22d, ten days after confinement, her family congratulated themselves on her improvement because she slept quietly and did not complain of headache; but in the evening they became alarmed, because they discovered she could talk only with difficulty, and that her right arm was partially paralyzed. I was immediately called, and found her with almost complete facial palsy upon the right side, and scarcely able to raise the right hand to her face; her leg was not as yet affected. Her speech was imperfect, but her mind was clear. These symptoms increased, attended with slight convulsive action gradually growing more violent, until the next day between eleven and twelve o'clock, when she died.

Post Mort., twenty-four hours after death, thorax and abdomen entirely normal. Calvarium was very thick; on removing it found considerable serum; blood-vessels all filled with blood. Upon laying open the cerebrum upon the left side, found a coagulum of blood near the centre as large as a goose egg. The structure of the brain was softened all about it for more than half an inch. There was evidence that the coagulum had existed a considerable length of time; in all probability had been there prior to her confinement. It is rare indeed that we meet with an instance in which a protracted and tedious labor is combined with such extensive lesion of the brain,—neither condition appearing to have any relation to the other. It is very instructive, too, illustrating fully the fact that so long as the disease is confined to the brain, convulsion can not be a consequence, even though attended

by the exciting cause of severe labor. It is of interest, too, in regard to the teachings of the old authors. According to them, here was every condition fulfilled requisite for the development of puerperal convulsions. But instead, she suffered a severe and protracted labor without any symptoms of them. On the contrary, the first indication of disease of the nervous system was paralysis, the legitimate effect of disease of the brain. And not until the increase of the cranial contents produced counter pressure upon the upper portion of the intervertebral system did convulsions occur.

Seeing, then, the error of locating the disease in the brain, and adopting the theory of Marshall Hall that the excito-motory division of the nervous system is the true and only centre of convulsive action, it follows that the causes must be such as act immediately upon that central organ, or such as are transmitted to it from the extremities of the excito-motor nerves. The first class he denominates the centric causes, the other the eccentric.

Among the centric causes, or those which act directly upon the spinal marrow, may be mentioned, alteration in the *quantity*, or in the *quality* of the blood. And there is also good reason for supposing that *sudden emotion* is direct in its influence upon the spinal centre, although the anatomical mechanism of its operation is as yet wholly inexplicable.

That an excessive quantity of blood in the vessels of the spinal column is a powerful excitant of that organ, scarcely admits of doubt. The pathological effect of active congestion is almost always stimulant, and the full distension of the vessels, whether producing rupture or not, would create pressure, which incontestible experiment has proved to be an infallible excitant of spinal action. In like manner, congestion or extravasation within the cranium, by filling a portion of the space within this unyielding bony cavity, creates a counter pressure upon the medulla oblongata and the superior extremity of the intervertebral column, and again we have convulsion, the active symptom of spinal irritation. So, too, the growth of a tumor, or any disease capable of producing internal pressure within the brain, would cause the same result. If, then, plethora is a spinal irritant, on the other hand, the opposite condition, spinal anæmia, is an equally powerful irritant. We see constant illustrations of this in deaths from hemorrhage, which are generally attended by convulsions; and animals bled to death either in experiments or at the shambles always have convulsions. It appears, then, that any great alteration in the *quantity* of the blood, whether it be an excess or deficiency, is a cause of

convulsion. This is a significant fact in reference to treatment. Recent and more accurate observation goes to show that a change in the *quality* of the blood is an important element in the etiology of this disease.

Pregnancy, in its progress bringing into action new functions, and affecting temporarily the whole economy of the system, creates in general a tendency to an altered condition of the vital fluid in the relative proportion of its elements. This alteration consists essentially in a diminution of the solid constituents. Sometimes the corpuscles are diminished, producing chlorosis and its attendant train; sometimes the albumen is eliminated: indeed, this latter change is so constantly true of the pregnant woman that it may almost be considered the physiological condition. Now if to this tendency are added the prostrating influences of deficient nutrition, destitution, cold and dampness, combined with the depressing passions, this seemingly physiological state passes readily and gradually into the pathological, and there is established the incipient stage of that disease which in its full development is granular nephritis, or Bright's disease. The vigilance of modern researches has detected what escaped the notice of the older pathologists, that in almost every case of true eclampsia, the blood is found deficient in albumen, while the urine is highly charged with it.

"The presence of albumen in the urine of eclamptic women," says Cazeaux, "is a very remarkable coincidence, which is at present well determined by the observations of many physicians; and it evidently seems to be the dominant fact in the etiology of puerperal convulsions." Albuminurea being so constant in cases of eclampsia, the inference is irresistible that there is a relation more or less intimate of cause and effect between the two facts. For since attention has been fixed upon this point, convulsions have occurred in those only who have been affected with albuminurea. The exceptional cases are rare, if any.

It is an old remark that œdema of the face and neck is a frequent premonitory sign of the attack; and it is now a well established fact that this general œdema of the upper extremities is almost always connected with an alteration of the urinary secretion, and is one of the most constant symptoms of albuminurea.

Nor is the hypothesis, that the diminution of albumen in the blood and albuminurea are necessary conditions of eclampsia, at all inconsistent with the fact that seven-eighths of the cases of eclampsia have occurred in primiparous women. Because, in first pregnancies, the

greater resistance of the abdominal parietes causes the uterus to be more strongly applied to the posterior walls of the abdomen, compressing the venal vein, causing congestion of the kidneys, obstructing the venous circulation and forming a mechanical obstacle to the regular fulfillment of the functions of the neighboring organs, and thus bringing about the very organic conditions most favorable to the production of albuminurea. So, also, women affected with rachitis are more liable to convulsions, because of their deformity and the limited space within the pelvis. The necessary compression that attends the development of the uterus disposes to the same result. Hence it would appear from constant concurrence of albuminurea and eclampsia, that the altered state of the blood (which is a necessary consequence of long continued albuminurea) is a direct irritant of the spinal axis, or, if not the sole excitant of the spasm, renders that organ more susceptible to the influences which reach it from other sources.

It is not the design of this paper to enter into all the minor causes which act directly upon the central organ, and we will pass at once to the consideration of the more important remedies indicated in the removal of the causes mentioned.

First on the list, after the example of all writers, I will speak of blood-letting. Blood-letting is in the great majority of cases most urgently indicated, not only to relieve the blood-vessels of the brain, which would seem to be the chief reason urged by authors above quoted, but also and especially because of its sedative action on the spinal system, which is the true seat of puerperal convulsion. I say the majority of cases, because there is almost always great vascular fullness, a plethoric condition of the system, and it is in this condition that blood-letting is the most positive and decided sedative of spinal action that we possess. And this is a point which should be most distinctly understood, that blood-letting acts in two ways, one curative in its effects on the spinal column, the other preservative in relation to the brain.

In fullness of the vascular system, then, blood-letting beside diminishing the impressibility of the *central* organ by rendering it less susceptible to incident irritation, relieves also the surcharged condition of the cerebral vessels, obviates partially the immense pressure to which those vessels are subjected during the fits, diminishes the danger of rupture and effusion, and removes the counter pressure upon the medulla oblongata. It is because of these prompt and marked effects that the remedy has been so uniformly recommended and

practiced in all cases. But while it is often a sufficient remedy for simple convulsions, depending on a turgid state of the circulation, great discrimination and careful judgment are requisite, not only in limiting it within safe bounds, and in detecting indications for other treatment, but also for determining whether in some cases it will not be injurious instead of curative. If blood-letting is indicated for the reasons which have been mentioned, it is perfectly evident that it is contra-indicated, and would prove extremely dangerous, in cases where those reasons do not exist; that is, in delicate anæmic women, copious depletion would be an additional cause of convulsion, because, as has been shown, deficiency of blood is an irritant of spinal action. It is, however, too much the fact that the constant teaching of the books, combined with the absence of positive knowledge of the true seat and etiology of the disease, has led to the blind and indiscriminate routine of bleeding every poor patient perchance to,—I had almost said to death,—or perchance to life, as chance alone decides, the chief guide of practice being the continuation or cessation of the fits.

Says Dr. Meigs: "If I were treating a woman in labor seized with the true puerperal convulsion I should *certainly* bleed her, provided the convulsion did not cease before I could effect my purpose, and should I in such case open the vein, I should surely allow the stream to flow as long as any convulsive innervations were left unquelled. Provided they should return again, I should bleed her a second time, and allow the blood to flow until the spasmodic and convulsive phenomena should have again disappeared."

Even so judicious a practitioner as Dr. Robert Gooch declares that "bleeding is our sheet-anchor in *whatever class* of patients the disease may occur; and that he never had a patient die of the disease where bleeding had been boldly employed."

Bleed is the rule, absolute and imperative,—bleed,—bleed,—no matter what the condition of the patient. No effort is directed to discover any cause of spinal irritation, which should be removed; the patient has fits; therefore bleed her. No matter if the stomach is loaded with indigestible food, or the bowels with hardened fæces. No matter if the bladder is distended to bursting. No matter what the state of the uterus, or what the condition of the vascular system, the rule is still arbitrary,—bleed boldly and fearlessly. Now this is rank and rash empiricism, and in the present state of physiological knowledge, inexcusable. And yet there can be no doubt that many practitioners, influenced by the teachings of the books, have carried depletion to a fatal excess, and even practiced it when it ought to have

been altogether avoided. It can not be questioned that if carried beyond proper limits, blood-letting is itself a cause of convulsions. Dr. Marshall Hall says, convulsion from loss of blood constitutes one species of puerperal convulsion, and should be accurately distinguished from other forms of this affection, arising from intestinal or uterine irritation, and an immediate disease of the head. (On Blood-letting, p. 17.)

It would appear, then, that after the circulation is reduced, either by proper depletion or from other causes, to somewhat below par, blood-letting acts no longer as a sedative, but becomes itself a most certain irritant of the spinal system. The *continuance* of convulsions, therefore, is not a reliable indication for further bleeding; but the state of the circulation in the interval of the fits, is the only proper criterion, regard being had to the different effects of an engorged and an empty state of the spinal vessels.

The dilatation of the glottis, by exciting an inspiration, although apparently trivial, is of no mean importance in its effect. Dr. M. Hall thinks that in all cases of true convulsion the glottis is wholly or partially closed, the effect of which is to increase both the cerebral and spinal congestion. There are several cases recorded where this simple expedient has prevented the convulsions. It is well known that the sudden shock of a dash of cold water in the face, by its reflex action upon the respiratory muscles will cause an involuntary inspiration, thus opening the glottis and relieving congestion. Denman gives the history of a lady, whose every pain was attended by a convulsion; but, by sprinkling the face with cold water at the beginning of each contraction, he prevented the convulsions during the rest of the labor. So simple a remedy can do no harm, and even if it does not prevent a convulsion it takes off a great amount of vascular pressure from the nervous centres, and lessens the amount of venous blood in the system every time it uncloses the glottis.

Among other remedies which are directly sedative to the nervous centres, an important one is the application of cold. When applied in a continued stream to the head, it lessens the distended state of the cerebral circulation, and relieves the counter pressure upon the inter-cranial portion of the spinal system. In the form of the douche it would tend to excite an inspiration and thus dilate the glottis. When applied along the spine it should be continuous, because the intermittent application excites instead of allays spinal action.

Of the narcotics, I shall only speak of opium. This drug has been more used than any other medicament, and yet authors exhibit the

greatest discrepancy of opinion as to the effect of it. The point of most importance in this connection is, if it be an irritant or a sedative of the excito-motory division of the nervous system. The heroic doses that have been given time and again in tetanus and hydrophobia, the purest forms of morbid spinal action, without in the least degree allaying spasm, would seem to prove that it is not a sedative of that portion of the nervous system. And there is reason to believe that it is generally a direct irritant. In poisoning by opium, especially children, convulsions occur as one of its most common toxicological effects. In amphibious animals it is a powerful spinal stimulant. When they are narcotized the slightest irritation of the surface produces universal convulsions, showing that narcotism exalts the excito-motor system to the most intense degree. Although it is evident that these effects are not so marked in man. Dr. Tyler Smith has written so well and clearly on this point, that I shall be excused for using his words. He says: "Some striking distinctions must be made respecting the administration of opium under different circumstances, particularly in puerperal convulsions. If a dose of opium be given in this disease in a full state of the circulation, before bleeding, there is an aggravation of the disorder; while if it be in puerperal convulsions in an anæmic subject, or after excessive depletion, it is of great service. If in a case of convulsions, opium be given at the commencement, it is dangerous in its effects; but the same medicine is frequently valuable in the advanced stage of the same case when the vascular system has been powerfully depleted. Thus it would appear evident that in convulsions with a full state of the circulation, opium is a *stimulant* of the spinal marrow, while in convulsions with anæmia it is distinctly *sedative*. It is certainly an important point in practice that the effects of opium in puerperal convulsions depend on the state of the circulation; that in plethora or inflammatory conditions it is always dangerous, while in anæmia and debility it may always be used beneficially."

My paper has already reached such a length that I will pass over other remedial agents, acting upon the central organ, to remove centric causes, and briefly allude to the eccentric causes of the disease and the remedial indications connected with them. These causes are such as to take effect upon the peripheral extremities of the incident excitor nerves, and of course relate to organs at a distance from the nervous centres,—such as the stomach, the rectum, the bladder, the uterus and the vagina. The irritation in these cases being transmitted to the central organ, and causing convulsion by reflex action.

Numerous instances attest the fact that large accumulations in the stomach or intestines, whether of food, or feces, or worms, or foreign bodies, excite the disease in this way. The removal of these offending substances is obviously demanded where they are known to exist. But the manner in which it should be accomplished is important. There can be but little difference between irritant drugs and irritant feces, and yet the most drastic purgatives are unceremoniously exhibited, which too often is only to change one cause of irritation for another. The prolonged effect of powerful cathartics upon the surface of the intestines already irritated to the highest intensity, must be any thing but favorable. It is but fair to presume that copious injections of simple water, would be quite as effectual and vastly safer, inasmuch as they are more rapid in their effect and do not remain to fret the bowels after their mission is accomplished. Their action might be assisted if necessary by the addition of castor oil or turpentine. If indigestible food, or an overloaded stomach excite the fits, an emetic of the sulphate of zinc should be administered. If the subject however is plethoric, venesection should precede the emetic, on account of the increased distension of the cerebral vessels in the effort of vomiting.

Mr. Vines mentions a case of convulsions which after resisting for two days all the usual remedies, including delivery, ceased immediately upon withdrawing from the bladder five and a half pints of turbid and highly ammoniacal urine. This case shows the necessity of attention to that organ. But it is in the uterus and uterine passages that reflex irritation acts most energetically and with the greatest intensity. The discussion of this particular branch of the subject is sufficient of itself for a lengthy dissertation. The various questions of treatment which arise, in different conditions of that viscus and its contents, relating to delivery, and the preferable methods of it, are deeply interesting, but the limits of this paper will not permit me to enter upon them. I will content myself with giving a general principle, in regard to the propriety of assisting delivery, based upon the theory of reflex action. The rule is this: if the condition of the mother is perilous, and the continuance of the child in the uterus or passages is productive of more irritation than would be occasioned by manual or instrumental interference, then artificial delivery should be resorted to. I am aware that this rule is indefinite because the conditions upon which it rests are only approximations. The amount of irritation in either case not being constant quantities, an accurate comparison can not be made. Nor is it possible to lay down a definite rule applicable

to all cases, the peculiarities of each case being such that no one rule can cover them.

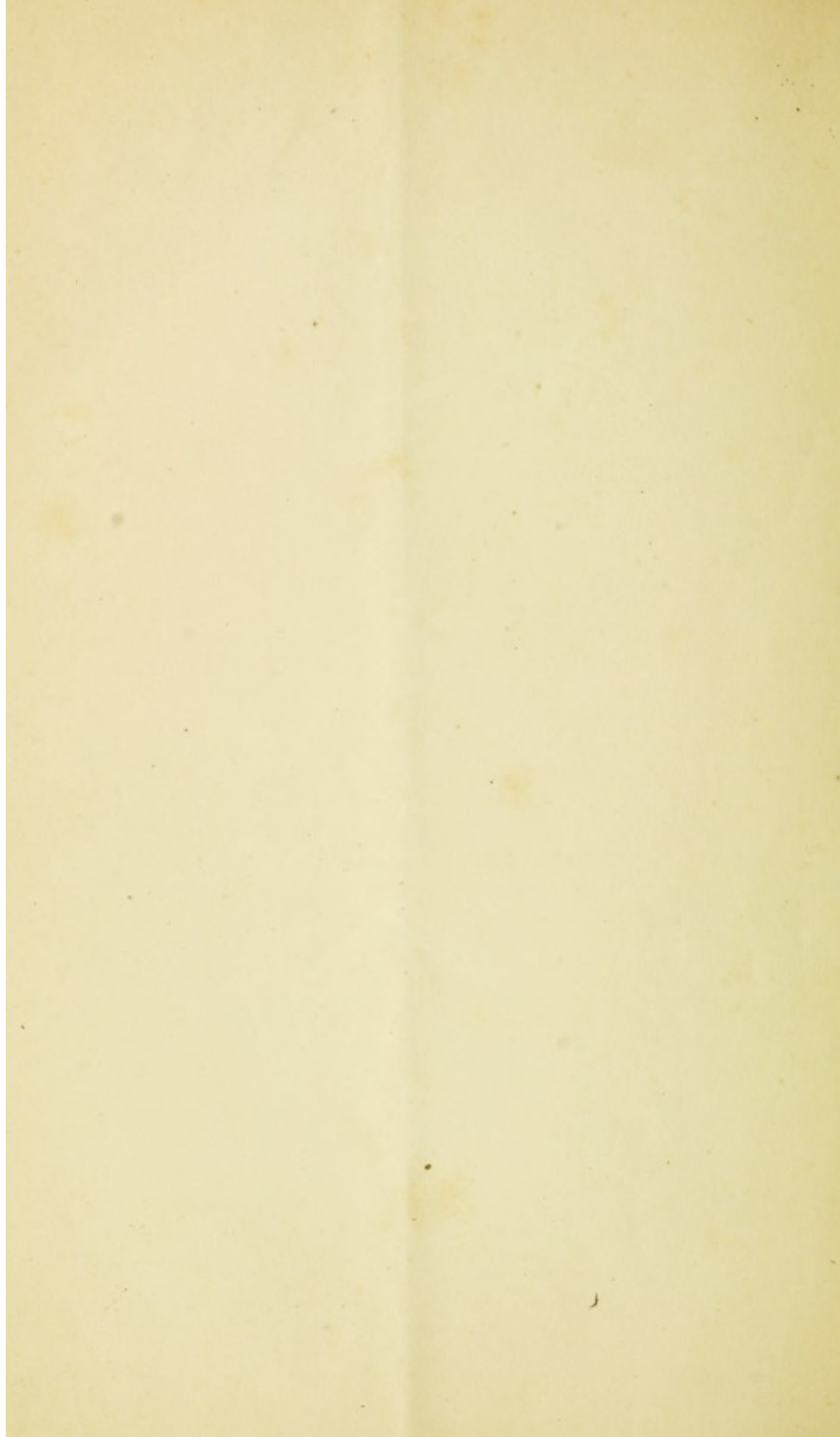
Of the prophylactic treatment of this disease, gentlemen, I have made no mention. It can scarcely be doubted that there is some alteration of the general economy, which predisposes the puerperal patient to eclampsia, and without which the various exciting causes which I have named would fail of that result. But the pathology of this stage of the disease is so barren of facts that little that is definite and positive can be said about it. If the constant investigations which are illuminating this department of the subject should confirm the theory respecting albuminurea, it may possibly lead to the discovery of some treatment which in that early stage may be more successful than it has proved in other conditions of albuminurea. It would be a boon indeed to obstetrical science, if a disease so terrible and disastrous could be detected in its approaches in time for prophylactic measures to be used with certainty.

If, gentlemen, in the cursory review of this subject, I have succeeded in arousing afresh your interest, and stimulated you to seek from better sources more light upon it, I have done all I aimed to do; and have thereby perhaps contributed my mite to the cause of humanity, by putting you in the way of better preparation to contend with this formidable enemy which commits its ravages only upon the fairest of creation.

C. A. LINDSLEY.

NEW HAVEN, May, 1858.





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Puerperal
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