on the same plan as in Wakefield ; but in the summer the tower-fires are not kept going as in Wakefield. The difference of the air in the two buildings was to me very perceptible, and proved that the system is efficient, but must not be intermitted.

Insanity occurs in this prison annually to the extent of about 20 cases. Dr. Archer appears, from his reports, to regard the malady as frequently arising from solitary confinement. In such cases association has been found a successful remedy.

OBSERVATIONS UPON PUERPERAL INSANITY. BY RICHARD GUNDRY, M. D., ASSISTANT PHYSICIAN TO THE SOUTHERN OHIO LUNATIC ASYLUM.

I PROPOSE, in the following pages, to notice some of the characteristic features of puerperal insanity, or that mental unsoundness which attacks women during the continuance of those physical changes induced by the occurrence of gestation, and extending over a long space of time, from conception to a few weeks after the close of lactation. This period embraces three very distinct epochs, in which the disease may commence, and which, also, to some extent modify the forms assumed by the mental disorder :—

1. The period of gestation ; including both conception and delivery.
2. The period extending about two months from delivery, during which the involution of the uterus is completed, and the function of lactation is thoroughly established.
3. The period of lactation, including weaning and the changes induced by the decline and cessation of the lacteal secretion.

Surely no affliction appeals more strongly to our sympathies than this fearful disease, which, when a household rejoices at the happy issue of its matron from the "hour of Nature's need," turns its joy into mourning by the approach of a far greater evil than that just vanished—where the fulfillment of the maternal function, woman's

crowning joy and glory, forms the alembic in which is distilled her most bitter cup of sorrow. Surely, then, such a disease deserves our close and diligent observation of everything which denotes its approach, or marks its progress. Nor is the extent of the calamity so slight as to avoid attention. In an analysis of the causes of insanity in 11,762 insane women, reported from fourteen hospitals for the insane in the United States, 1050 are noted as occurring during the puerperal period; or nearly 1 in 11 insane females. The reports of foreign hospitals for the insane would doubtless tell the same story. During five years one-eighth of the females admitted into Bethlem (London,) were subjects of puerperal insanity. At Salpêtrière a twelfth, and during some years a tenth were of the same nature. The experience of these two metropolitan hospitals is thought by Dr. Tuke to be above other institutions. He estimates that in most English asylums one-fourteenth to one-twentieth of the females admitted is the proper proportion. The results of a careful examination of the cases given above do not enable me to concur with this opinion, but exactly agree with the deductions from the experience of Bethlem and Salpêtrière, and it may be questioned whether they represent fully the proportion chargeable to this cause. Esquirol met in private practice with a still greater relative number of cases, and this has been the experience of several eminent practitioners who have had abundant opportunities for observation. From various sources we derive the following statistics on this subject.

	Number of In- sane Females.	Puerperal Cases.
14 American Asylums,.....	11762	1050
Reported by Dr. McDonald,.....	691	49
“ “ M. Parchappe,.....	596	33
“ “ M. Saller,.....	97	11
“ “ Hanwell Asylum,.....	703	79
“ “ M. Mittivic,.....	242	9
“ “ M. Esquirol,.....	1119	92
“ “ Bethlem Hospital,.....	899	111
Totals,.....	16109	1434

According to which table, of every 100 insane women, nearly 9

became so in consequence of the puerperal condition in some of its stages. On the other hand, the records of lying-in hospitals show that a very small proportion of the whole number of women *confined* become insane. In the Westminster Lying-in Hospital, according to Dr. Reed, only 9 out of 3500 delivered there were attacked. In Queen Charlotte's Lying-in Hospital, in 2000 cases there were eleven who became insane. Other institutions of a similar nature furnish like results. It must be recollected, however, that the time spent in a lying-in hospital after delivery is usually very short, and does not include the period of lactation most productive of mental disease.

I shall endeavor to trace the principal points in the history of *fifty-six cases*, and compare the results thus arrived at, with the opinions and experience of other observers.

The age at which insanity first appeared in these cases, was as follows:—

	Cases.	Ratio.
Under 20 years of age,.....	3	5.36
" 25 " " "	18	32.14
" 30 " " "	11	19.64
" 35 " " "	13	23.21
" 40 " " "	8	14.29
" 45 " " "	3	5.36
Totals,.....	56	100.—

It will be seen that from 20 to 25, and from 30 to 35, the proportion is much larger than at any other period; but this might have been expected, so far as the first period is concerned; for the proportion of females living at that age in the United States greatly exceeds that of any other period, excepting less than 20 years of age. So far as any conclusion can be drawn from such limited data, it points to the period of life between 30 and 35, as the time most prolific of puerperal insanity. Many of the cases in our survey did not come under observation during the first attack. We must therefore inquire the age at which the attack (herein alluded to) was developed:—

Between 20 and 25 in 9 cases.	Between 40 and 45 in 3 cases.
" 25 " 30 " 15 "	" 45 " 50 " 2 "
" 30 " 35 " 16 "	
" 35 " 40 " 11 "	Total. 56

And in this connection we must also take into account the number of attacks suffered. Thus, it was—

The 1st attack in 37 cases.				The 4th attack in 4 cases.			
"	2nd	"	10	"	No. unknown,	"	1
"	3rd	"	4	"			
				Total,.....56			

We shall more fully understand the influence of age by ascertaining the periods at which each of these attacks occurred :—

PERIODS.	Cases of one Attack.	Of two attacks.		Of three attacks.			Of four attacks.				Total No. Attacks.
		1st	2nd	1st	2nd	3rd	1st	2nd	3rd	4th	
Less than 20 years,	0	2		1							3
" " 25 "	6	6	2	2	2	1	3	3			25
" " 30 "	9		2	1	1	1	1		3	3	21
" " 35 "	11	2	2		1	1		1	1	1	20
" " 40 "	8		3								11
" " 45 "	3										3
" " 50 "			1			1					2
Totals,.....	37	10	10	4	4	4	4	4	4	4	85

The history of the 55 persons, therefore, embraces 85 different attacks of insanity, of which more than one-half occurred between 25 and 30 years of age; while taking those only who had one attack, the period from 30 to 40 furnishes more than one-half. Whether the inference to be drawn from this, that those attacked more early are more liable to a recurrence of the disease, is warranted by the other circumstances of the cases, will afterwards be adverted to. One case of the 56 not included in the above analysis had suffered from several attacks, (the exact number not being known to me,) of which the first took place before 25 years, and the last at 32 years of age; from all of which she perfectly recovered.

The influence of occupation receives but feeble illustration from this series of cases. All classes seem equally liable. Neither riches, with the luxury that attends, nor poverty, with its supposed exemption from enervation, can claim any exemption.

As to their civil condition very little can be said. 54 patients
VOL. XVI. No. 3. G

were married, and 2 single women. Esquirol remarked that the number of single persons becoming mothers, who are afflicted with puerperal insanity, bears a large proportion to the married. Of 92 cases reported by him, 63 were married and 29 single. We might expect, *a priori*, that if moral causes exerted so preponderating an influence in the production of insanity as many writers assert, a larger number of those unfortunate women who have borne illegitimate offspring would be found subjects of this disease, than the statistics of insanity in any country exhibit.

From the indirect agencies in the etiology of puerperal insanity, we naturally pass to the consideration of a more direct and causative influence. How far does hereditary tendency display itself in cases of this description? This is a difficult question to answer correctly, for no point is more assiduously concealed by the friends of parties than the existence of any hereditary taint. Where collateral relatives have been insane, I have included them in my estimate, as leading to the surmise of a taint in the common ancestry, in the absence of precise information; though such evidence is by no means conclusive:—

Father had been insane	in 3 cases.
Mother " " "	" 6 "
Father, brother, and 6 sisters	" 1 "
Mother, and mother's sister	" 1 "
Great-grandfather, (Father's,) and sister	" 2 "
Brothers or sisters	" 4 "
Father's brother	" 1 "
Uncle, and aunt	" 1 "
Hereditary (relationship not specified)	" 3 "
Not ascertained	" 34 "
Total	56

Twenty-two out of fifty-six, or two in every five, are suspected or known to have been predisposed to mental disorders by the existence of hereditary taint. This corresponds with the proportion observed by Esquirol, while Dr. Burrows found, in 80 women who became insane after delivery, more than half hereditarily predisposed. Dr. Gooch remarks: "A very large proportion occurred in patients in whose families disordered minds had already appeared;" and in 217

cases collected by Helfft, Weill, and Marcè, 89, or 41 per cent., belonged to this class.

Any unusual circumstances affecting the patient about the time of the attack must be taken into consideration, as exercising more or less influence in its causation. Of such several have been ascertained in this series of cases. These can be arranged as follows :—

Lost a child prior to last delivery,	3	Chorea,	1
Miserably situated at confinement,	2	Abscess of breasts,	1
Drunken or worthless husband,	5	Illegitimacy of child,	3
Inflammation of uterus,	3	Repelled papular eruption,	1
Leucorrhœa,	1	" ulcer,	1
Still-born child,	1	Mental emotion,	1
Family difficulties,	2	No unusual circumstances,	26
Child ruptured, (grief),	1	Not ascertained,	4
Total,			56

Of those marked as having no unusual circumstances, it is simply intended to show that the circumstances surrounding them at confinement in nowise differed from what they were daily accustomed to; that their comfort was provided for, and that no trouble, no sad affliction had previously depressed their feelings, or occurred at the time to exercise an injurious influence upon their prospects. The exact value to be attached to any of these agents in the etiology of puerperal insanity is not easily estimated. They rather concur with the existing puerperal condition in precipitating an attack than in originating it. At any rate, they materially increase the difficulties to be surmounted before health is attained, by those with proclivities to mental disturbance. Where a combination of circumstances exists in a given case, it is no easy problem to determine what exerts the chief influence, and it is by no means clear to my mind whether these circumstances should be regarded as predisposing or as exciting causes.

Here it will be proper to notice the influence exerted by the previous labor, when several important questions arise. Are primiparæ more liable to become affected than multiparæ? and the circumstances of the labor, its dangers and complications, what do they perform in this work? Among 53 persons, (3 being unknown,) it was observed there were attacked in connection with the—

1st labor,.....	10	3rd and 4th labors,.....	1
1st, 2nd, and 3rd labors,.....	3	4th ".....	6
1st and 3rd ".....	1	5th ".....	3
1st, 2nd, 3rd and 4th ".....	3	5th, 6th, 7th, and 8th labors,.....	1
2nd ".....	8	7th ".....	2
2nd and 3rd ".....	1	After every labor, (No. unknown,). 1	1
3rd ".....	9	After having borne several children, 4	4

Only 18, or 1 in 2.94 of the number were primiparæ; while of these 7 had a repetition of the attack in connection with every child born to them. When insanity has once established itself as one of the incidents of the puerperal condition, it seems to have a great tendency to appear at every successive period of that kind. This periodicity was noticed in 10 women, and was established in the 1st, the 2nd, the 3rd, and even the 5th puerperal state. In only one case did it skip over one child after it had once appeared, and then re-appeared with the next. M. Marcè found in 57 patients only 14 primiparæ; and amongst the 43 remaining cases, 13 had been confined 5, 6, and even 9 times.

How far the nature and history of the labor influenced the production of insanity which may have ensued, is open to much discussion. Difficult and tedious labors seem as innoxious as regular and easy labors. Nor are those who have flooded profusely more certainly liable to an attack than any others. Drs. Merriman, Gooch, Esquirol, Frias, Selade, Billod, and Reid, mention one instance each of insanity in connection with labor, complicated with puerperal convulsions, and apparently dependent on that cause. Yet the proportion of patients with eclampsia becoming deranged is exceedingly small; too trifling to furnish evidence of any relation existing between them, as cause and effect. Dr. Webster has charged upon the use of chloroform in labor some few cases of puerperal insanity, and Dr. Skae, of the Edinburgh Asylum, reports one case attributed to this, the only one out of 44 cases of puerperal insanity admitted into that institution since the discovery of chloroform. On the other hand, Dr. Simpson relates two cases where the use of chloroform in labor prevented the expected usual attack of mania after it.

The history of the invasion of the disease is less perfect than I could desire. Except in a few cases it has not been my fortune to

observe the actual inception of the disease. The facts relative to the first symptoms are gained from the certificates of the examining (not always the attending) physician in the case, or from the relation of friends where opportunities occurred. The utmost care in sifting out the various details may not have prevented many errors from creeping in. At what period is insanity most likely to attack the puerperal woman ?

PERIOD OF ATTACK.	1st Epoch.		
	1st Epoch.	2nd Epoch.	3rd Epoch.
During pregnancy,.....	7		
Less than 15 days after delivery,.....	20		
“ “ 1 month “ “	5		
“ “ 2 months “ “	4		
“ “ 3 “ “ “ “			2
“ “ 4 “ “ “ “			6
“ “ 6 “ “ “ “			4
“ “ 12 “ “ “ “			2
Immediately after weaning, (about 12 months after delivery,).....			2
Unknown, but during lactation,.....			4
Totals,.....	7	29	20

To complete the history of this stage of the disease, it may be necessary to ascertain at what period the previous attacks already alluded to occurred. Four attacks were non-puerperal ; four attacks were during pregnancy ; fourteen attacks were during the second epoch ; two attacks were during lactation ; and the circumstances of *six** attacks are unknown. So that of 76 known puerperal attacks, 11 began during pregnancy ; 43 during the two months following delivery ; 22 during lactation, or immediately after weaning.

Compare with these the results of others. Esquirol thus classifies 92 cases :—

From first to fourth day after delivery,.....	in 16 cases.
“ fifth “ fifteenth “ “	“ 21 “
“ sixteenth to sixtieth “ “	“ 17 “
“ sixtieth to twelfth month of suckling,.....	“ 19 “
After forced or voluntary weaning,.....	“ 19 “

*These *six* attacks, marked as unknown, occurred either during the second or third epoch, in which is unknown.

A summary of the cases reported by Dr. McDonald, Dr. Burrows, M. Marcè, and at Hanwell, in 1848, and those collected by M. Marcè, and by Dr. Wyman, of Boston, in Report of 1834, may also be useful for comparison :—

PERIOD OF ATTACK.	Dr. McD.	Dr. B.	M. M.	At H.	M. M.	Dr. W.	Total.
During Pregnancy,	4	18	4		27	5	58
After Delivery,	44	51	41	26	186	28	370
During Lactation,	18	6	20	13	103	47	207
Total,	66	57	79	43	310	80	635

The second is, therefore, the most important in the causation of disease. Some have regarded that as embracing only six weeks after delivery instead of two months, the limit I have adopted ; so that were the figures corrected to that period, the numbers of the second epoch would be still slightly increased.

The access of the disease was marked by symptoms in this series which were, in many instances, doubtless but imperfectly recorded. Often the alterations of manner, of feeling, the emotional and instinctive changes which ushered in the attack, were either unobserved, or their value unappreciated. Something startling, out of the usual routine of life, must occur to be remembered as the starting point in the history of mental disease in such cases. I have estimated the first symptoms as closely as possible, in the following table :—

NATURE OF THE FIRST SYMPTOMS.	No. Cases.	NATURE OF THE FIRST SYMPTOMS.	No. Cases.
Unfounded jealousy and suspicion,	4	Quarrelsome propensity,	1
Fear of injury from persons,	3	Attempt to kill child,	3
Attempts to wander away,	5	Suicidal attempt,	4
Indifference to child,	3	Suicidal and homicidal attempt on children,	1
Excited talk,	9	First symptoms not ascertained, ...	8
Delusions,	7		
Hallucinations,	4		
Fear of impending evil,	3	Total,	56
Ecstatic feeling,	1		

The period of incubation in puerperal insanity varies. It is in a majority of cases gradual and progressive. It may be sudden and decisive. In the second epoch the latter is more frequently the case than at either of the other periods; yet it can not be said to characterize a large proportion of those cases. Often it happens that, long before any attack is apprehended, the patient is exceedingly influenced by overwrought emotions. Easily moved by trivial circumstances, she weeps or laughs immoderately compared with the cause. Usually there is sadness, a tendency to look at the dark side of every thing, to fear evil in the future, and not unfrequently a presentiment more or less transient that her mind will give way. All these phenomena are only recalled to memory long after the disease has unequivocally appeared, and seldom warn the friends of its approach. The first symptom is often seen in the peculiar appearance of the eye; easily recognized when once it has been seen, but exceedingly difficult to be learned from description. Restlessness, a wish to be moving from place to place, indifference or dislike to those around her, increasing loss of sleep, a quick but very compressible pulse, a creamy-coated tongue, actions and expressions perhaps not remarkable in themselves, but strangely out of unison with the character or circumstances of the individual, appear in many instances in the early stage of the disease. To these frequently succeed slight febrile excitement, irritability of temper acquiring fresh strength at every display, suspicion of motives, and a capriciousness of inclination, or temper or desire. Little by little, almost imperceptibly these may increase, until their combined and accumulated force precipitates an explosion, which leaves no room for doubt as to her condition in the minds of her friends. Now appear strange and wondrous delusions; and expressions so vulgar and obscene mingle in the conversation of delicate and refined women, that Pope's sarcastic line seems reasonable enough. It may be doubted whether certain actions noticed as the first symptoms of this series of cases were really such, yet they indicate tolerably well the nature of the disturbance (of the emotions or the instincts generally) which ushers in an attack. In eleven cases the natural affection for those who in health

were nearest and dearest to them, degenerated into indifference and suspicion, or became perverted to hatred and a desire to injure. Unfounded dislike to the nurse, or those in attendance upon the patient, was pointed out by Gooch as usually the first sign of derangement in women recently delivered. The delusions noticed in seven cases referred to various subjects, and were generally of a depressing character. In several of these the idea of being utterly lost, or having committed the unpardonable sin, was prominent. These were probably cherished long before they were avowed, and gradually acquired strength as they lingered in the mind.

The growth of the disease is not always thus gradual. The premonitory symptoms may have been absent, or have differed so little from the ordinary course of action as to have excited no attention. The explosion is the first intimation of danger at hand. An attempt at suicide or homicide may first alarm the friends. One patient, after three sleepless nights charged to some trivial cause and disregarded, showed the force of the disease by throwing her child down a vault. Another wanders from her childbed one evening, appears in her night-clothes at a religious meeting in the neighborhood, and smiling, asks, in a whining voice, "Are you all well?" yet none had previously suspected her to be insane. One, a few weeks after confinement, witnessed an altercation between her husband and another person regarding the loss of some money, fell fainting on the floor, and when restored to consciousness was found to be deranged, and would afterwards laugh and dance as merrily as a mountebank. The further progress of the cases may vary; those who evinced a suicidal tendency at first may become maniacal, or glide into gloomy melancholy. The latter is the more frequent course. The reverse is the usual history of those with homicidal propensities. Delusional symptoms are confined to no form, but may tincture them all in one way or another. To this point I shall advert hereafter.

I have already stated that the form of insanity assumed by the patient is to some extent influenced by the epoch in which the attack began. This may be seen, so far as the 56 cases are concerned, in the following table :—

FORM OF MENTAL DISEASE.	1st Epoch.			Totals.
	1st Epoch.	2nd Epoch.	3rd Epoch.	
Mania,	5	22	9	36
“ periodical,		1		1
Melancholia,	2	5	7	14
Dementia (primary),		1		1
Monomania of fear,			2	2
“ “ unseen agency,			1	1
“ “ suspicion,			1	1
Totals,	7	29	20	56

Mania is the most frequent form, and especially predominates in the cases occurring soon after delivery. In those during lactation melancholia, and those partial forms (more allied to melancholia than to mania) more nearly balance the number in which mania occurred. The experience of M. Marcè accords in assigning the highest number of cases to mania. All other authorities coincide. There is, however, a class of cases which rarely has any examples in any hospital for the insane, wherein mental disturbance (of the type of delirium rather than mania) supervenes a few days after delivery, and very rapidly terminates, either by recovery (as in the large majority) or in death. The proportion of such is difficult to be arrived at.

We have now arrived at the consideration of the symptoms which marked the progress of the cases, and as far as possible we shall classify them, both with regard to the form of the disease with which they were associated, and the period of its origin. They naturally arrange themselves into two classes; namely, mental or psychical, and physical. A very short examination of them in this order must suffice.

No man who passes into the company of insane women, unacquainted with their history, can pick out those laboring under puerperal insanity in any of its forms. This is particularly true where puerperal melancholia or monomania occurs. Of mania, a few symptoms deserve special notice. In some comparatively few cases of mania (more frequently during the second epoch, originating within ten days of delivery) the stage of excitement runs exceed-

ingly high. There may be very violent and irregular muscular exertion, great febrile excitement, intense heat of occiput and sinciput, with a very quick, sharp, but compressible pulse, running from 110 to 120. The heart's action is correspondingly tumultuous, but somewhat labored. The tongue at first is creamy, then, becoming more dry, is brownish, and finally with the teeth coated with dark sordes. Where improvement takes place, the tongue becomes red in the middle, sometimes dry, but gradually gets to be more moist and cleanly. The elevated papillæ are conspicuous for some time. As the disease advances, a peculiar and heavy sweat exudes from the whole surface of the body; the breath becomes very offensive, even fetid; involuntary discharges, both fecal and renal, ensue; vigilance is generally, but not always present. I have seen sleep (apparently good sleep) leave the patient not only unimproved, but apparently worse in every respect, and when this occurs the prognosis is very unfavorable. In these cases the mental characteristics consist of constant hallucinations or illusions, which keep her constantly exhausting herself by increasing talk and action. There is a constant attempt to tear off her clothes, and to be naked. Usually she refuses food, apparently loathes it, and while incessantly calling for water to drink, constantly spits it out as soon as it enters the mouth. An inveterate propensity to spit is usually a well-marked symptom of this form of disease. This series of symptoms is exceedingly rapid in progress; a few days decide the issue, when death closes the scene, or the patient passes into the more usual path of mania, and ultimately recovers. Of four such cases embraced in the series under consideration, three commenced on the fourth and ninth days respectively, during the continuance of the lochia, which flowed abundantly. Of these one died; the other two subsided into the usual form of mania, and recovered. The other case occurred in a feeble, anemic woman, who had just weaned her child, twelve or thirteen months old. She gradually became calmer, her illusions still continuing, and ultimately recovered after two months illness. The symptoms bear a striking resemblance to the "irritative fever" which accompanies large suppurating sur-

faces, or from poisoned wounds. With an apparent increase of vital action, the real cachectic nature of the disease is but slightly masked. Yet slight as this mask actually is, it often deceives the practitioner, on his first acquaintance with the disease, into a belief of its sthenic and hyperæmic origin; than which nothing can be more erroneous pathologically, or more calculated to lead to a wrong and even dangerous course of treatment. A very brief sketch of such a case is subjoined, as an example.

M. M., born in Germany, aged 25, married; of tall and spare form, black hair, gray eyes; was for first time delivered, after a difficult and tedious labor, of a still-born child. She constantly reflected on the loss of her child, and charged it upon the accoucheurs. Was very hysterical, alternately excited and depressed, until fourth day after labor, when became uncontrollably maniacal, and continued so without intermission until seen by the reporter, on the fifth day of the attack. The subsequent symptoms may be concisely stated as follows: General febrile condition; head intensely hot; eyes often staring wildly, with contracted pupils; cheeks having usually a hectic flush; tongue heavily-coated with dark brown substance, becoming towards the last dry, but generally very clammy, and re-appearing rapidly after removal;—the same also on the lips; pulse ranging from 115 to 130, generally 120 and upwards, small and compressible. At first rejected food, but after much urging began to eat, and then appetite was craving; drank often, but spat out almost as much as she took; breathing hurried, and somewhat labored; bowels regular, not disturbed in their functions; skin hot, sometimes with a clammy moisture; jactitation incessant, throws off the bed-clothes as if they annoyed her; lochia profuse and offensive; during her illness, lasting ten days, she slept several hours at night, (excepting two nights,) but invariably woke up more noisy and disturbed, and as if frightened; urine moderate in quantity,—phosphates abundant; urea and creatinine abundant; urates very scanty.

On the tenth morning of her attack she was somewhat better than usual, comprehended her situation partially, and expressed her wishes correctly for an hour or so. With this exception there was

little or no remission of the mental symptoms which were those of fear and terror. She saw her former medical attendant looking at her ; she heard him threaten her ; she saw her husband looking at her through the window. Her child was tormented by them both, and she screamed from the pain they caused herself. She tried to keep them off from her, and begged piteously that they would spare her child. She talked incessantly about her baby ; she shouted often ; she spat at persons who approached her, as if in spite at them. Without any amendment, she continued to exhaust herself by her maniacal exertions until her death, on the evening of the tenth day.

In a majority of cases, mania from puerperal influences does not essentially differ from non-puerperal mania. One feature of ordinary insanity is often greatly exaggerated in puerperal mania. The propensity to use obscene language and figures ; to mingle them in otherwise correct conversation ; to obtrude them at every opportunity, which may be to some extent seen in other forms of insanity, is strikingly and disgustingly manifested by this class of patients. One observer (Dr. Campbell) remarks that the patient, " though remarkably devout when sane, now launches out into such a torrent of obscene language that one would be astonished that respectable females could have become familiar with such expressions." Although this is remarkably characteristic of those who become maniacal soon after delivery, yet it is tolerably frequent in mania of the other epochs, and even in some cases of melancholia. In neither of the cases of monomania was it observed, though one of them complained that blasphemous and obscene thoughts were constantly obtruding themselves on her mind, and that she had great trouble in keeping herself from giving expression to them. Another distressing symptom, frequently met with in all forms of puerperal insanity of every epoch, is the perversion of the instinct of self-preservation. Attempts at suicide are often very suddenly put into force, and persevered in. It may be the first symptom of mental derangement that arouses the alarm of friends, as in the five cases already noted, or it may be developed at any time during the course of the attack. A lady during lactation, not previously deranged, was discovered by her hus-

band hanging in the room at night ; so quiet had been her movements, that he had not been awakened. She was resuscitated, and passed into deep melancholia, from which she gradually recovered, to all appearances, so that the vigilant oversight hitherto maintained, was relaxed. No sooner did this take place than again she hanged herself. Resuscitation, followed by a similar state of melancholia, was again succeeded by apparent restoration of cheerfulness and reason, when the suicidal impulse again suddenly re-appeared. The case is not embraced in this series, and the final result I am not acquainted with. In the 56 cases twelve attempted suicide, and three threatened or contemplated such a course. The manner of attempts may be noted :—

MANNER OF SUICIDAL ATTEMPT.	Mania.			Melancholia.			Monomania.			Total No. Cases.
	1st Epoch.	2nd Epoch.	3rd Epoch.	1st Epoch.	2nd Epoch.	3rd Epoch.	1st Epoch.	2nd Epoch.	3rd Epoch.	
By cutting throat,.....	1			1						2
" drowning,.....	1	1								2
" hanging,.....						1				1
" several modes,.....	1	1		1	2					5
Total,.....	3	2		2	3					12

In Bethlem Hospital, out of 111 cases of puerperal insanity 32 were affected by the suicidal impulse.

Allied with this perverted instinct, and appearing sometimes in the same individuals, is the propensity or impulse to kill. The victims selected are usually those naturally claiming the love and sympathy of the patient.

One patient tried to kill by scalding various persons ; three patients tried to kill husbands ; four patients tried to kill their infants ; one tried to kill children and husband ; so that nine, or one in six, developed homicidal propensities. Of these three were combined with the suicidal impulse.

The emotions are usually in a state of tension, (if such a term be admissible,) so that the slightest cause induces a marked response

from them. It is difficult to set the data to prove this statement in a clear array, and I therefore content myself with a simple assertion of the fact. Grief and anger, &c., appear very readily from the slightest cause.

From the emotions, whose morbid development underlies so much of insane phenomena, to the senses and intellectual faculties is a natural transition. How far they are involved may be measured to some extent by the hallucinations, illusions and delusions that severally affect them. Classifying them according to the form of the disease, and the period of its occurrence, the results are not without interest in some respects.

NATURE OF SYMPTOMS.	Mania.			Melancholia.			Monomania.			Total No. Cases.
	1st Epoch.	2nd Epoch.	3rd Epoch.	1st Epoch.	2nd Epoch.	3rd Epoch.	1st Epoch.	2nd Epoch.	3rd Epoch.	
Hallucinations of hearing,	2	2				1				5
" " sight,	2					1			1	4
Illusions of hearing,		1								1
" " sight,	1									1
Hallucinations of sight and hearing, ...		1								1
" " hearing & smell,									1	1
" " hearing, and illusions of sight,	2	2								2
Delusions,	2	4	4		2	2			1	15
Totals,	2	11	8		2	4			3	30

More than one-half, therefore, of the 56 cases were more or less under the control of some form of illusion. They heard voices directing them to do this, or to refrain from that. They saw robbers, or deceased relatives, or acquaintances, or faces constantly peering at them from the ceiling or the window. Several entertained that most harassing delusion that they were eternally lost, having committed the unpardonable sin; one that her husband had bewitched her, and another that she could cure all the sick by laying her hands upon them. In one case, ecstasy "rapt her soul in Elysium," but soon the scene changed to the blackness of despair, and a fear of demons who were tormenting her took possession of her.

The physical symptoms of puerperal insanity do not differ essentially from those common to non-puerperal insanity. The early symptoms of the acute stage of puerperal mania, in its most aggravated form, have been described. A less degree, but a similar kind of morbid phenomena characterizes the early stages of that form of disease in general. The head is usually hot, sometimes intensely so over the sagittal suture; the cheek may be flushed, but this is by no means constant. In a majority, perhaps, the face bears a blanched and haggard aspect, and there is a peculiar physiognomy which is not so apt to strike the observer while it is present, as to be recalled to memory when it has given place to an improved appearance. There is a want of harmony in the features—some of them seem to express one emotion, while the rest wear a different, perhaps opposite cast. With all this there is usually blended a care-worn look of anxiety somewhat piteous. The face is thus rendered rather repulsive than otherwise, but when the patient improves this look disappears, and the features settle down to a calmer and more harmonious expression, and we wonder why it was we formerly thought the face anything but attractive. Thus it is a common indication of improvement when a patient begins to look more handsome. Sometimes this attracts the attention of her attendant, who observes something of this sort: "How pretty Mrs. A. looks to-day! I really never thought she was so good looking!" And such remarks will generally be found to coincide with the date of amendment.

The pulse in the early stage ranges from 100 to 110, even as high as 120, but this gradually comes down to an average not exceeding 105, and lower as improvement takes place, or as the more chronic form becomes impressed upon the disease. The pulse is usually very compressible, and, however violent the symptoms may be, it is not more influenced in its force and speed by these circumstances than it would be by the same muscular exercise under ordinary circumstances, and perhaps not so much. One point is to be noted. The variation of the pulse when sitting or standing, is much greater than in other diseases under the same apparent excitement. This is also the case in melancholia and monomania, although in these the ratio of the pulse is less, and the volume smaller.

The tongue is coated at first with a thick, creamy substance, composed in part of thrown-off epithelial scales, intermingled with an abundant algous growth. This gradually gives way to a thin, whitish coating, which is usually to be found in the ordinary course of the disease. The salivary secretion in all forms is exceedingly active. Spitting is almost universal among such patients.

The bowels are often troublesome in the early days of mania, from a distressing diarrhœa ; more often constipation of a very persistent nature is present. This is especially the state of affairs in melancholia, where costiveness is either constant, or less frequently alternates with sudden and distressing diarrhœa. The renal secretion in the varieties of puerperal insanity is worthy of a more extended investigation than it has received from any observer. I have not been able to make a quantitative analysis of the urine in any case. A few observations, on certain leading constituents only, have engaged my attention. First among these is the relation of the phosphates in the urine, in this disease. They seem to be greatly increased during the stage of excitement, and may perhaps serve as a gauge of the consumption of nerve-force. In one case, which I carefully examined, an abundant crop of oxalates with an increased quantity of urea, as shown by the facility with which the crystals were spontaneously deposited in the slide, was easily demonstrated. In most cases I apprehend that the urine is slightly alkaline or neutral soon after discharge, but soon becomes acid, and is so generally when examined. The growth of *penicillum glaucum* is rapid and abundant in every specimen I have met with. As the patient improves the urates appear more abundantly than before, with a proportionate decrease of the phosphates. In some specimens the triple phosphates, in differently-sized prisms, are abundant, and in many cases might undoubtedly lead astray, for they often arise from the presence and decomposition of foreign substances in the urine, (as leucorrhœal or lochial discharges,) and the consequent ammoniacal evolution that ensues.

The influence of puerperal insanity upon the two secretions, (if one of them can be so termed,) the milk and the lochia, remains to be

noticed. The general belief has obtained that these were stopped, or at least superceded by the occurrence of insanity. In many cases the lochia remained during the attack as in ordinary circumstances, and apparently ran its course without any reference to the disease whatever. So with the milk, those who were nursing continued to secrete it as freely as before, or if the quantity were diminished a sufficient explanation was at hand, from the special circumstances of the case, to account for that decrease without invoking the aid of the disease itself. Indeed, it often happened that special means had to be resorted to in order to prevent the secretion of milk, no longer required in the absence of the child; the neglect of which had sometimes caused induration of the breasts, and its attendant suffering. I may here mention, to save a recurrence to this topic, that I have found the application of belladonna to the breasts of great service in these cases, to arrest the secretion of milk.

The already extended length of these remarks induces me to hasten over the detailed symptoms of improvement, and approaching convalescence. In the main they consist in a gradual subsidence of the more violent symptoms in mania, or in melancholia and its allied forms, and a gradual loosening from that abstracted condition which hitherto held the mind in thralldom. The sleep is more regular, and produces better results. The patient awakes more refreshed, and is better after sleep than before, which is not the case in those who do not improve. The features, as I have before remarked, lose their "unsettled look," and compose themselves into "greater unity of expression." The re-appearance of the catamenia at the proper periods, and of normal character, without change in the mental condition, will assist in forming a favorable prognosis. Sometimes there are critical terminations. A febrile attack may ensue in this as in other forms of insanity, and with its favorable termination the mental disorder also disappears. But a more common crisis is the appearance of a crop of boils, which, though troublesome enough to the sufferer, may be heartily welcomed as the precursor of returning health. As convalescence approaches the patient becomes fleshy, sometimes more so than in health, but this usually subsides to

the usual condition in robust health. On the other hand, the becoming fat without any corresponding improvement in other symptoms, is a very serious element in an unfavorable prognosis.

The prognosis of puerperal insanity is stated by writers in exceedingly favorable terms. The proportion of recoveries is quite large, according to the following authorities :—

Dr. McDonald records that 80 per cent. of his cases recovered.

Dr. Webster thinks that “three in every five cases of puerperal insanity may be confidently expected to recover within the year.”

Dr. Haslam cured 50 out of 85 cases at Bethlem.

Dr. Burrows records 57 cases, of whom 35 recovered.

Drs. Gooch and Prichard have considered these results as indicating a less favorable prognosis than the circumstances would justify, inasmuch as the cases are taken from hospital practice, and usually do not come under care in the most recent, and consequently curable stage of the disease. Dr. Gooch observes : “Of the patients about whom I have been consulted, I know only two who are now, after many years, disordered in mind, and of them one had already been so before her marriage.”

So far as regards the present analysis, the following results obtained :—

Recovered.....	31	persons or 55.35 per cent.
Improved	4	“ “ 7.14 “ “
Died.....	6	“ “ 10.71 “ “
Were not improved.....	15	“ “ 26.78 “ “
<hr/>		
Total.....	56	

Pursuing the plan hitherto carried out, I have given, in the accompanying table, these results, arranged with reference to the epoch in which the attack originated, the form the disease assumed, and the duration of the attacks :—

PERIOD OF ORIGIN.	FORM OF MENTAL DISORDER.	RESULTS.	DURATION OF ATTACK.														
			Within two months.	Three months.	Four months.	Six months.	Eight months.	Ten months.	One year.	Eighteen months.	Two years.	Three years.	Four years.	Five years.	Ten years.	Twenty years.	Totals.
1. Occurring during pregnancy,.....	Mania,.....	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1. do. do.	Mania,.....	Improved, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1. do. do.	Melancholia,	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. Occurring within two months after labor,	Melancholia,	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mania,	Improved, ..	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Mania,	Died,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. do. do. do.	Mania,	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. do. do. do.	Melancholia,	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. do. do. do.	Melancholia,	Improved, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2. do. do. do.	Dementia,....	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Occurring during or immediately after lactation,	Dementia,....	Not improved,	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Mania,.....	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Mania,.....	Died,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Mania,.....	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Melancholia,	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Melancholia,	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Monomania,	Recovered, ..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Monomania,	Died,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. do. do. do.	Monomania,	Not improved,	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals,.....			3	4	2	5	7	4	4	5	6	3	5	4	3	1	56

It will be observed, that of the 37 persons laboring under mania, 19 recovered, 3 improved, and 4 died, 11, after periods varying from eight months to ten years, remaining unimproved.

Of the melancholic, and other depressed forms of mental disease, including nineteen persons, twelve recovered, one improved, two died, and four had received no benefit, in periods of from four to ten years.

Of seven cases occurring during pregnancy, three recovered, one improved, and three were not improved.

Of 29 occurring within two months after parturition, fifteen recovered, three improved, three died, and eight received no benefit from treatment.

Of 20 cases occurring during lactation, thirteen recovered, three died, and four were not improved.

We have already seen that these 56 persons had previously suffered, in some instances, from one or more attacks of puerperal insanity. Taking the number of these attacks as the basis of our calculations, we have the following interesting results :—

PERIOD OF ATTACK.	Recovered.	Improved.	Died.	Not Improved.	Totals.
Occurring during 1st epoch,	7	1	—	3	11
“ “ 2nd “	29	3	3	8	43
“ “ 3rd “	15	—	3	4	22
“ in 2nd or 3rd, (which unknown,)	6	—	—	—	6
Totals,	57	4	6	15	82

This would give a ratio of 69.51 per cent. of recoveries from attacks.

An interesting inquiry may arise, whether the chances of recovery are lessened by the previous occurrence of attacks in the individual? Some light will be gained by investigating the results of the attacks, embraced in the present analysis :—

NUMBER OF ATTACKS.		Recovered.	Improved.	Died.	Not Improved.	Totals.
First attack,		38	4	5	8	55
Second "		14			4	18
Third "		6			2	8
Fourth "		2		1	1	4
Totals,.....		60	4	6	15	85

This is exclusive of one patient who had several attacks, (the number not ascertained). We may safely assume two attacks, though three or four would probably be more correct. But *four* of the first attacks were non-*puerperal* in their character; deducting these, and adding the two as above, we shall have the following proportion of recoveries in 83 known *puerperal* attacks :—

Recovered from 1st attack.....	35 out of 52; or 67.3 per cent.
" " other than 1st attack,.....	23 " " 31; " 74.2 " "
Total,.....	58 out of 83; or 69.8 per cent.

Thus it would appear that the first attack is more disastrous to life and reason than when several attacks have been safely borne. If we take those who did not recover, or those who died, and make the same comparison, we shall arrive at the same result.

The influence of time upon the prognosis is shown in the general table of results. We may notice more particularly a few of the more important points, in this connection :—

Within six months, 13 recovered, and 1 died; in one year, 10 recovered, 3 died, and 2 did not improve; in 18 months, 4 recovered, and 1 did not improve; in 2 years, 4 recovered, 1 died, and 1 did not improve; over 2 years, 4 improved, 1 died, and 11 did not improve.

Before we pass from this branch of our subject we must advert for a moment to yet another inquiry, which, if it could be fully answered, would give us a much better and more true appreciation of the results of the cases than we could otherwise attain. How many of those who recover remain able to discharge the usual

duties that devolve upon them, as they did before they were attacked ? And how many relapse when brought into contact with the cares and anxieties of every-day life ? I regret that I cannot give as full a solution of these important questions as I could wish. I may state, as an impression from general experience, rather than from any result of special investigation, that while a patient who recovers from an attack of puerperal insanity is rendered very liable to a recurrence from any subsequent delivery, the liability to insanity at other times, and from non-puerperal influences, does not seem to be increased in the same extent (at least,) as if the previous attack had been of an ordinary character. Of the 31 persons whose recovery has been noted, the subsequent history of *eleven* is unknown to me ; 6 remain well, at the end of two years ; 2 after eighteen months ; 4 after one year ; 3 after six months ; 2 after three months since their last attack. One case (less time having elapsed,) is omitted. Two cases relapsed ; the one after a period during which her health was complete, and the other after three months freedom from any mental disorder. In the first case, brutal treatment from her husband was the exciting cause of the relapse, as it had probably some share in the production of the first attack. In the second, nothing is positively known to have induced the recurrence of the disease, unless the cares of her family proved too harrassing for her previously enfeebled mind to resist.

The causes of death in six cases were noted as follows :—

Two died of apoplectic seizures. In both the attack was sudden, in the midst of the ordinary course of mania, and was not preceded by any premonitory symptom. One case, of monomania of fear, died of fatty degeneration of the kidneys. Several months before death, general anasarca was developed ; the urine was exceedingly albuminous, and abundant in renal casts gradually increasing in size, and in their clear, waxy appearance, as the disease progressed ; with these oil-globules were sometimes discovered. One case died of mania, as already described. One died apparently of no special disease, but gradually declined in strength, and flesh, and vital energy, and passed away after ten years of mental disquietude, and unceasing suspicion.

One patient died from pharyngeal abscess. Her insanity had been of fourteen months duration.

A few words on the treatment of these cases must bring this paper, already too long, to a close. No special means were resorted to. Such indications as from time to time appeared, were met with appropriate treatment. In a majority of the cases, anodynes, in some form or other, entered into the medicinal treatment. Morphine and camphorated tincture of opium, were perhaps the most frequently called into requisition. Both in mania and melancholia they seem to relieve the tired brain from the fatigue of its own teasing vagaries, and, besides the inducing of sleep at night, exert a beneficial effect. Tonics are also generally required, and none are better than the various ferruginous compounds. The citrate, the tartrate, the muriated tincture may be used, as the taste of the physician or the special case would suggest. The carbonate combined with conium, "Brigham's mixture of iron and conium," with the occasional addition of morphine, answers admirably as a general tonic.

In the sleepless ravings of some cases, chloroform may be cautiously applied. In a few cases it was useful for the immediate purpose of inducing sleep, but further than this I have not observed any marked effect on the course of the disease. A more reliable course for a more permanent benefit to this class of patients, is the free administration of diffusible stimulants. Where opiates fail to induce sleep, and chloroform can only induce temporary quiet, these often act like a charm, in soothing irritation and producing good, refreshing sleep. Wine, spirits, ammonia, sulphuric ether, according to the special exigencies of the case, are thus beneficial.

Cathartics have always played a very conspicuous part in the treatment of insanity, puerperal and otherwise, ever since "*Naviga ad auticram*" conveyed a reproach, as well as suggested the therapeutic means to put it away. But it may be doubted whether the practice has not often been carried too far. Their occasional use in this disease is undoubtedly proper, not because the patient is insane, but to procure relief when she is constipated. In the same way emetics may be occasionally useful. In both cases it is rather to remove causes of disturbance, than from any other reason.

In two or three cases I have seen great benefit from the continued use of quinine in moderate doses, with an occasional anodyne. They were of a low, nervous, melancholy character, with loss of appetite, inability to apply themselves to any object requiring attention, and a depressing, somewhat hysterical state of feelings.

In a word, the treatment of puerperal insanity is, to brace up the enfeebled body and shattered nerves, to procure as absolute quiet and repose for the organ of the mind, as we gain for a broken bone by the use of splints. To devise the special means by which this end may be attained, constitutes the difficulty of treatment in the one case as in the other. And there is, in both cases, a point in their history, when, passive treatment having done its work, it needs to be replaced by action of the limb, or of the brain, as the case may be. To recognize the exact time when this point is reached, and to make the change of means judiciously, should ever be objects of the greatest care. When mental exercise can be safely substituted for mental quiet, (now passing into lethargy,) excitement of the emotions replace indifference, then they are not only proper, but almost imperative. But, to be too hasty in this matter, is only to renew the former trouble. On the other hand, too long delay allows the patient to sink into partial fatuity.

Of the pathology of puerperal insanity I shall not now write, as a much greater space would be required, to consider that important subject at all satisfactorily, than the few lines which I could have the assurance to add to these remarks.