PUERPERAL INSANITY.

By Robert Jones, M.D.Lond.
(Introduced by W. S. A. Griffith, M.D.)

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(*Abstract.*)

The paper is based upon a personal experience of 259 cases of puerperal insanity, divided into—120 cases during the actual puerperal period, 83 during lactation, and 56 during pregnancy.

Insanity is stated to occur once in every 700 confinements.

Insanity is stated to be of a characteristic form after confinement, amounting to an almost nosological entity; but this is not the case during pregnancy nor during lactation, there being no definite type of insanity occurring in connection with these two stages. The divisions are, however, more convenient than typical.

The following propositions are advanced by the author:

1. The insanity of pregnancy is more common in first confinements among single women, the disappointment, shame, and disgrace of illegitimacy being an important factor in the mental break-down.

2. During pregnancy the mental condition is more often acute melancholia than acute mania, and suicidal symptoms, which occurred in 41 per cent., have to be carefully guarded against.

3. The insanity of pregnancy is divided into that occurring during the early months and that occurring during the later months, and in these the nearer the insanity in point of time to the confinement, the more acute are the mental symptoms. Insanity is not more frequent when the sex of the child is male.

4. The insanity of the puerperium comes on after the first

confinement in 33 per cent. of the cases, and supervenes suddenly rather than gradually.

5. The cases which occur during lactation present characters of marked general physical exhaustion, and mentally are more often of the depressed than of the maniacal form. Lactation insanity becomes chronic oftener than the insanity of the other periods. There is a tendency to low forms of inflammation, thrombosis, gangrene, and phthisis during the insanity of lactation. Both suicidal and infanticidal promptings are more common in lactational than puerperal cases,—that is, in cases where insanity commenced more than six weeks after confinement.

6. The early symptoms of threatening insanity are loss of sleep and headache, and these should be a forewarning of mental break-down. The busy delirium of hallucinatory character, ending in acute restless, purposeless mania with religious and erotic delusions, is characteristic of this variety. The writer suggests a close analogy between the emotions of love and religion, and agrees with Simpson that the organ diseased gives a type to the insanity, and that in women suffering from affections of the generative organs the delusions are more likely to be connected with sexual matters.

7. *Ætiology.*—Heredity is more marked and in the direct maternal line in puerperal and lactational insanity, and is equally paternal and maternal in the insanity of pregnancy. A previous record of hysteria is frequent in puerperal insanity. The question of marriage of hysterical persons is considered.

8. The *pathology* is that of heredity and stress. Is the stress due to a toxin?

9. As regards *prognosis*, cases of insanity during early pregnancy improve towards the end of pregnancy, whereas those of late pregnancy become worse at the puerperium. Puerperal insanity is markedly recoverable. Improvement is rapid, being often complete in three months, but generally takes four to five months.

10. *Treatment.*—All cases presenting headache and sleeplessness must have absolute quiet and rest, and sleep must be procured. Home treatment in all cases if possible. Guard against unusual and sudden impulses of suicide and infanticide. The presence of the husband aggravates the symptoms. There is much necessity for a liberal and stimulating dietary. Change is necessary in puerperal insanity when cases tend to become

stuporose. Menstruation is a sign of mental improvement. Purgatives and iron are well borne.

Criticism.

The following special questions are put forward by way of criticism:

1. Is there such a disease as puerperal insanity—a mental alienation which is either caused by the puerperium or an accompaniment of this physiological crisis?

2. If there is, is the mental condition due to toxæmia, or septicæmia, or both? Or is the delirious mania which occurs in connection with this period due to extraordinarily emotional disturbances? How far does the moral factor enter into the ætiology, and how far does pregnancy in the unmarried state influence the causation of insanity?

3. What is the relation between mania and melancholia?—for instance, is there any relation between the mania of the puerperal period and the melancholia of lactation? If the former is escaped from, may the disease culminate in the latter? Are there two forms of cell reduction, and, again, are they toxic or septicæmic? What is the age of greatest incidence, and in what proportion do cases of insanity occur during gestation, the puerperal period, and lactation in the poor and well-to-do? What is the influence of heredity?

4. What is the essential pathology of this disease?

5. What is the relation between albuminuria and pregnancy? also between albuminuria and the puerperal state?

6. In my cases, so far as the history could be obtained from the relatives or those present, no prodromata of insanity beyond sleeplessness and headache were as a rule noticed, and the onset of insanity was sudden: what is the nature of the onset in the practice of obstetric physicians?

7. As to prevention and treatment, does hysteria in youth manifest itself by insanity in later life at the puerperal or other physiological crisis, and should marriage be discountenanced in these? What views should be generally held as to the marriage of neurotic persons? What are the views as to home and asylum treatment, as to local and general treatment, and (more important and especially) as to the induction of premature labour?

Introduction.

The reproductive process is one of the most fundamental and imperative activities that operate in nature. It includes most of the elementary excitations of which man is capable—the pleasure of possession, admiration, self-esteem, reverence, certain sympathies and wants, and it involves also some of the most powerful as well as the most compound of the feelings and emotions. The reproductive process around which the whole scheme of existence hangs, and upon which it depends, is in certain constitutions—depending upon temperament and heredity—apt to be disturbed; and when disturbance does take place, either during fulfilment or after its immediate completion, it converts the most joyous time of life into one of fearful anxiety, and short of death itself no event is so great a shock to all concerned as is this disturbance; for the parental instinct may be destroyed by disease, and the strongest affection may turn to hatred and become a danger.

Those who have studied the reproductive life of woman admit that gestation is attended with great nervous disturbance in many, and some in all. In normal persons the sympathetic connection between the gravid uterus, the mammæ, and other structures is so disturbed that various forms of neuralgia, severe headaches, dizziness, and insomnia occur; whereas in highly susceptible persons changes of disposition and character become so marked that this irritability, fractiousness, and despondency may amount to actual insanity; and although the reproductive life is less liable to insanity than any other, the dynamical changes in the nervous currents are so great that insanity actually does occur about once in every 700 confinements.

General Statistics.

As to actual insanity during the reproductive life and connected with it, the report of the Lunacy Commissioners

(1902) shows that, of all occurring insanity among women of all ages, the yearly average number of admissions into asylums for the five years 1896—1900 inclusive due to pregnancy, parturition, the puerperal state, and lactation bears the percentage of 6·4 in the private class and 8·1 in the poorer classes to the total yearly average of admissions from all causes. The proportion is somewhat higher among the poor during the period of lactation, as might be expected; but that due to pregnancy and the puerperal period is higher among the well-to-do. At Claybury the statistics correspond very closely with those of the Lunacy Commissioners' report, the number due to the causes under consideration being about 7 per cent. of all occurring insanity, and 10 per cent. of insanity occurring in those admitted during the child-bearing period, calculated between the ages of fifteen and forty-five years.

The cases out of which my numbers are taken represent about 3500 female patients who were received into the Claybury Asylum during eight years after its opening. They exclude all those transferred from other asylums, although in many instances the insanity was due to puerperal states, but I had no direct record of them. Out of the 3500 admissions 259 cases were received suffering from insanity, for which pregnancy, parturition, the puerperal state, or lactation was assigned as a cause—a proportion of 7·4 per cent.; and these are composed as follows:—56 were from pregnancy (49 being delivered in Claybury)—a proportion of 21·62 per cent.; 120 occurred during the puerperal period—a proportion of 46·33 per cent.; and 83 were associated with lactation—a proportion of 32·43 per cent.; yielding a ratio among these cases of four puerperal, three of lactation, and two of pregnancy. During the year 1900 the births of London were given as 132,652, which yields an approximate ratio of one case of puerperal insanity admitted into an asylum for every 1100 births. Other authorities, speaking generally, state that the ratio may vary from 1 in 400 to 1 in 700 births.

Division of Disease.

As to the division of insanity for these periods, the classification which is customary is (1) that which occurs during pregnancy; (2) that from the date of parturition to six weeks after confinement, which in this paper we shall refer to technically as "puerperal" insanity; and (3) insanity occurring during lactation, and dating from six weeks after confinement. This classification must not be taken as suggesting a type of insanity, and it is more convenient than accurate.

The insanity of lactation is calculated to date six weeks after confinement, under the impression that involution of the uterus is then complete, although authorities differ upon this point, for some consider involution at this date to be only half complete, and not accomplished under three months. Moreover the secretion of milk commences within the first few days of confinement in the majority of women, and is not infrequently accompanied with marked constitutional disturbance; but the exhaustion and drain due to nursing is probably not evidenced until the process has gone on for some time, and six weeks is generally agreed upon as the commencement of this period.

As to the types of insanity corresponding to these periods, my experience leads me to conclude that there is no type associated either with pregnancy or lactation; but with parturition and the period immediately succeeding it the insanity presents such a marked delirium, with wildness and delusions of an hallucinatory character, in which religious and erotic features become so prominent, that I recognise for this stage an almost distinct nosological entity—a view, I am bound to confess, which is not supported by some high authorities.

It would appear that in some cases marked mental disturbance takes place during the period of gestation, not amounting to actual insanity, but culminating in acute mania during the later puerperal period; also that

some mental alienation during the puerperal period, not amounting to insanity, may culminate in actual insanity during lactation.

In regard to these I would desire to learn the experience of obstetric physicians.

Civil State; Illegitimacy; Primiparæ.

As to the civil state, only 12 per cent. of the total 259 cases were single. The proportion is much higher, however, when these cases are divided into the different periods already named. In the insanity of pregnancy no less than 25 per cent. were single women, whereas only 8 per cent. of the puerperal cases were single, and only 3 per cent. of the lactation cases, the latter probably owing to the fact that few single women are allowed to nurse their illegitimate offspring.

In Scotland no less than 25 per cent. of all puerperal insanity is stated to occur among single women, but the incidence of illegitimacy varies greatly in different districts. In Middlesex and Essex, which are the lowest (as compared with Cumberland, 70 per 1000 births; and Scotland, which is probably higher still), it is 29 illegitimate births per 1000, a proportion of one illegitimate to 34 legitimate, or about 3 per cent.; and as the ratio in my cases is 12 per cent., this argues a considerably increased liability to insanity among single puerperal women.

As to primiparæ, only among single women does insanity appear to occur with marked disproportion in first pregnancies; 25 per cent. of the cases of insanity of pregnancy occurred during the first pregnancy, and of these 78 per cent. occurred in single women. In puerperal cases the mental break-down followed a first confinement in 33 per cent. of cases. One of my patients had suffered from an attack of insanity with each of her twelve children, and another with each of nine, both becoming chronic and incurably insane at the climacteric.

In lactation cases the insanity did not most commonly follow a first confinement, but appeared to be due to the strain of frequent pregnancies and the exhaustion of long-continued suckling, in some cases prolonged to two years. It followed a third and later confinement rather than a first.

Form of Insanity and Onset.

As to the insanity of pregnancy, the form of mental disorder was mostly of the depressed type, and the acute form of melancholia was more common than the acute form of mania. Some of the single women were weak-minded with weakened emotional inhibition, unable therefore to restrain their passions, and thus were more readily tempted, and they were of the type which is less likely to be helped, and more liable to neglect, disappointment, and shame. Four were epileptics, two general paralytics, and two were congenital imbeciles. In the fifty-six cases, forty-nine of whom were delivered in Claybury Asylum, the onset occurred before the third month in 25 per cent., after the fifth month in 48 per cent., and after the sixth month in 34 per cent. In my experience the insanity of pregnancy occurs mainly towards the end of gestation. I have never heard of a case of insanity about the period of conception, but women have often referred to the mental changes which inform them that conception has taken place. I have not met with a case of temporary insanity during parturition, but the practice of obstetric physicians may supply my inexperience. If this condition occurs it may explain and mitigate tragedies which are occasionally reported. The onset was more often gradual than sudden in pregnancy cases. It has been stated that the insanity of pregnancy was more common when the sex of the child was male, but in forty-four of my cases the sex of the child was ascertained, and the sexes were equally divided.

Of the specially puerperal cases—and it is in this

period that I recognise a special form of insanity—more suffered from mania than melancholia, and from the acute form of mania than that of melancholia. Out of the 120 cases only one was epileptic. The onset was sudden more often than gradual, and the gradual onset characterised the advent of melancholia twice as often as mania. It has been stated that the nearer the insanity is to the confinement in point of time the more acute the symptoms, and this accords with my experience.

Of the lactation cases a greater proportion suffered from the depressed than the exalted form of insanity. In these cases the onset was equally frequent between the second and third months of lactation and the first and second years, but as nursing after the first year is so exceedingly uncommon it must thus be highly prejudicial to the mental and bodily health of the mother, and what affects unfavourably the health of the mother cannot but be injurious to the offspring.

General Symptoms and Ætiology.

The symptoms of puerperal insanity in 40 per cent. of cases occurred within the first two weeks, and of these more than a third occurred during the first week. In some of these cases symptoms of unrest appeared on the second day, and one of my patients was brought under treatment on this day suffering from the most violent delirium, with sensori-motor disturbances. The almost universal early symptom of insanity in puerperal cases is loss of sleep. The progress of a case is described by those who have the care of the patient as at first sleeplessness, then a feverish and anxious restlessness, a busy concern about trivial details, a distrust and suspiciousness, and a readiness to take offence when none was meant, an exacting irritability and a ready reaction to outward stimulus, culminating in wild and delirious excitement and mania. When sleeplessness and headache, followed by

an indefinable feeling of apprehensiveness, occurs in puerperal women with an hereditary nervous instability, any sudden unaccustomed stimulus, of however slight a nature, tends to and may presage a mental break-down. It is for this reason that early attention should be given to sleeplessness and headache.

In puerperal cases the anxious expectancy of the latter months of pregnancy, followed by the subsequent exhaustion of parturition, causes the period immediately after delivery to be one of unusual anxiety even for normal cases. It is a period pre-eminently impressionable to all the systems—the nervous, circulatory, secretory, and excretory,—and it is one in which disordered conduct appears to result, and to be of an intensity out of all proportion to the apparent stimulus.

As to hallucinations of the senses, in those under my care those of hearing were six times as common as any other; but few had hallucinations of smell, touch, or taste. I have noticed in several instances, when hallucinations of smell occur, that delusions with suspicions of poisoning are apt to follow. Delusions as to place and surroundings are not uncommon, as are also those relating to personal identity, the patient mistaking those about her (and whom she may have never seen before) for relations or friends; she also fails to recognise her own identity or that of her infant. This condition has been described as acute hallucinatory insanity, and it resembles that after certain toxins. This confusional state passes into an absolutely uncontrollable and restless violence, accompanied with profound physical exhaustion, in which the patient presents a peculiar glaring, wild look, with a markedly anæmic and generally sallow hue. In those greatly exhausted an overpowering and persistent tendency to yawn has been noticed. The patient not infrequently develops marked antagonism to her husband, erotic delusions appear, with immodest behaviour and improper language, generally with rapid and inconsequent chatter and indecent suggestions. Marked sexual excitement,

with faulty habits, together with religious exaltation, are more often met with in this form of insanity than any other. They appear in a person previously of pure and unblemished character, and this condition shocks and alarms everybody about her. As to the association of prurient language with sexual disturbances and religious exaltation, it must be remembered that love and religion are the two most volcanic emotions to which the human organism is liable, and when the one is disturbed the vibrations naturally and readily extend to the other.

The gibberish nonsense, erotic, immodest conduct, and bad language, the evolutions of shameless indecency, accompanied with noisy delirium and marked religious exaltation, with purposeless restlessness, together with profound bodily exhaustion, characterise and sum up, if I may say so, the insanity of the puerperal period, and in this I am disposed to recognise a distinct type of insanity.

In the insanity of pregnancy and lactation my experience leads me to conclude that there are no general symptoms characteristic of these stages.

Suicidal attempts.—Suicidal promptings were most common in the lactation cases, and occurred in nearly half the number. In the insanity of pregnancy suicidal intent was noted in 41 per cent. of cases. In the post-puerperal cases it was only marked in 21 per cent.

Infanticide.—The tendency to injure the child was relatively more common in the lactation than in the puerperal cases, but several patients were described as careless and neglectful, and as having lost the natural affection for their offspring.

Hysteria.—It is interesting to note in many cases the previous record of hysteria, although the percentage of these is not high. The question may be asked whether hysteria in early life increases the possibility of a mental break-down in the puerperium; for if so, the marriage of hysterical persons should be discouraged. It must be remembered, however, that to many girls marriage fulfils a natural expectation, and may lessen the possi-

bility of a mental break-down at the climacteric. To condemn these women, therefore, to a single life may be unnecessarily harsh, and fail in its purpose should they act upon the advice proffered to them in this direction, which is more than doubtful.

Temperament.—Most of the puerperal cases were described as cheerful, fewer among the lactation cases, and least among the pregnancy cases; among the last were most of those described as reserved.

Introspection and brooding are not indications of a well-balanced mind. That mind is healthiest which receives a constant stream of ingoing sensorial impressions, a deprivation of which means decay and disease.

Hair, eyes, and pupils.—Brown hair and grey eyes mostly predominated, but these are the most common colouring among women in the United Kingdom. The pupils answered to the Argyll-Robertson reaction in the five cases of general paralysis. In only 7 per cent. were the pupils noted to be markedly dilated, and equally in cases of mania and melancholia. It is stated to be a symptom of marked exhaustion, but it is by no means a constant one.

Ages.—The age of the greatest incidence to insanity was between 25 and 29 years inclusive, both for the insanity of pregnancy and that of the puerperal period; whereas the age of greatest incidence in lactation cases was between 30 and 34 years—a fact which supports the view that this latter form is closely related to exhaustion, and occurs most commonly immediately after the best period of life, namely, that under 30 years. Although some cases were under 20 years of age, a certain number of patients suffering from insanity after the puerperium and during lactation occurred between the ages of 35 and 45 years—a fact which agrees with general experience and expectation, that when pregnancy and parturition occur beyond the age at which restoration and recuperation naturally and readily occur, the great outlay and exhaustion consequent thereon are more likely to yield to

the breaking strain; but it is difficult to state upon which age-extreme of the reproductive life this is greater, and it is open to further inquiry.

Heredity.—Of the 259 cases nearly 50 per cent. had some hereditary predisposition, either physical or mental, and this includes both direct and collateral insanity, epilepsy, suicide, intemperance, phthisis, etc.—a higher proportion than is generally ascertained. In the puerperal cases heredity was more often direct-maternal than paternal; in the lactation cases it was direct-maternal twice as often as paternal. In the pregnancy cases there was no difference.

Heredity was most marked among the pregnancy and puerperal cases; *i. e.* where stress is most felt, there the mental break-down from a weakened inheritance is most likely to occur. It is upon the baneful influence of an evil heredity that attention should be concentrated, for it is impossible to qualify that great biological law according to which all beings endowed with life tend to repeat the elements and functions of their inherited organism in their descendants—a law which governs the subordinate no less than the dominant characteristics, and which involves internal and external structures with their physiological and psychological consequences.

Prognosis and Recovery.

This form of insanity is considered by all authorities to be the most prone to recovery.

As to the infants, many of them failed to survive their births for long, and I consider that insanity is very unfavourable to the life of the offspring.

As to prognosis in the different types, insanity occurring in early pregnancy is favourable; that in later gestation is apt to continue in an exaggerated degree until after confinement and during the puerperal period, and may afterwards become chronic. Three of my 56 cases were discharged recovered before confinement,

although it is stated that the insanity of pregnancy rarely passes off before delivery. I am inclined to think that the strain during the last months of pregnancy and immediately before parturition is more likely to unbalance a mentally unstable woman than that attending the early stages of pregnancy.

Most of the puerperal cases get rapidly well, but I have known several cases of acute mania on admission passing on to permanent dementia. When the onset is gradual, and the form of insanity is melancholia, the termination is often dementia and chronic. Although contrary to the teaching of both Savage and Clouston, my experience of this form of insanity can recall numerous and frequent relapses, which I think more common than is generally believed. Insanity during lactation has the tendency (as in the puerperal form) to get rapidly well, but warning must be sounded against the risk of low forms of inflammatory diseases, indicating a general want of recuperative power and a low state of nutritive tone, which not infrequently make themselves manifest by a tendency to gangrene or phthisis, and indicating also the necessity for a stimulating and vigorous form of treatment. Of the 259 cases 102 had a sudden onset, and of these 68 recovered—a proportion of 66 per cent.; whereas in 155 cases with a gradual onset, 81 recovered—a proportion of 52 per cent. Of those who are chronic or who have died, the majority had a gradual onset. The psychopathic taint is the chief element in the pathology and prognosis of insanity, and the whole question is the inherited durability of the neuron. Albuminuria in puerperal insanity is not common; when it occurs the prognosis is grave. In one of my cases the convulsions only ceased after the administration of chloroform. A return of menstruation is a satisfactory symptom.

Savage states that from 75 to 80 per cent. of puerperal and 80 per cent. of lactational cases recover, adding that those suffering from puerperal insanity hardly ever recover completely under five months. Bevan Lewis quotes

the recovery rate at 80 per cent. My own statistics bear a like interpretation, as in the 120 puerperal cases 88 recovered, a proportion of 73 per cent., and 13 died, 10 per cent. Of the 83 lactation cases 49 recovered, a proportion of 60 per cent., and 14 died, a proportion of 16 per cent.; whilst of the pregnancy cases, 56 in number, 27 recovered, a proportion of 48 per cent., and a death-rate of 21 per cent., yielding a grand recovery rate of 63 per cent., and a death proportion of over 15 per cent. in the 259 total cases. Of the recoveries, 43 per cent. occurred among the puerperal cases before the expiration of four months, and 31 per cent. before the expiration of three months.

The death-rate is highest among the insanities of pregnancy, and lowest among the puerperal cases. Most of the deaths among the lactation cases occurred after over two years' residence. The majority of deaths among the pregnancy cases occurred also in those with over two years' residence, and they had become chronic. The majority (70 per cent.) of deaths among the puerperal cases occurred when these had been less than six months under treatment.

Pathology.

It is desirable, if possible, to distinguish the form of brain affection which is due to pregnancy and the puerperal period, including lactation, from that which occurs independently of the bodily condition under consideration.

The parturient state implies marked psychic and bodily transformations, and these are caused by the new uterine eccentric reflex and the active state of the reproductive organs. These changes during a first pregnancy—involving the arousal of maternal instincts for the first time—cause an anatomical and physiological strain upon the organism which opens up channels in the nervous system hitherto undeveloped, and these channels are brought into fresh activity with each repeated gestation. A reflex

process goes on which, although not directly dependent upon the higher nervous system, nevertheless profoundly reacts upon it; many phases of mental condition are experienced, and any unfavourable nervous accompaniment or development tends to be repeated at each successive similar crisis. It is known that when a gravid uterus is cut off from the cerebral centres by a complete accidental section of the cord, natural labour pains come on at full term if the pregnancy proceeds (Routh), also the mammary glands enlarge and proceed to secretion, even when all the nerves entering the mamma have been divided. Absorption through the placental circulation (and probably also from the liquor amnii) of material necessary for the building up of embryonic and fœtal structures and the discharge of waste products from the fœtus suggest considerable alterations in the mother's blood. Whether this means a change in the phosphorus-containing elements of the blood is uncertain (we know that the most vital and most highly vitalising cells and tissues of the body contain this element in some proportion), but certain blood changes that occur during pregnancy possibly involve a slightly toxæmic condition of the maternal blood which lasts for a considerable period. Some have compared this to a form of anæmia, there being a material diminution both in the number of the red blood-corpuscles and also in some forms of albumen, whereas an increase is said to take place in fibrin and extractives—conditions which appear to favour the frequency of thrombotic affections. Some chemists have described a condition of peptonuria in association with pregnancy. From the sallowness, the deposit of pigment, and, as some chemists have stated, an increase in the co-efficiency of urotoxicity, it is possible that profound changes do occur in the maternal blood during gestation, which may in part, at any rate, account for the mental transformation incident to pregnancy. During the period of full development of the reproductive process—a period which involves more or less retirement—many states of mental action and

reaction occur. The vague fears and dread, on the one hand, and the eager expectations and exalted feelings on the other, may in the psychopath amount to actual insanity ; and, as Sir James Simpson stated, "the organ diseased gives a type to the insanity, so that with women suffering from affections of the generative organs delusions would be more likely to be connected with sexual matters," as already referred to.

The form of insanity which characterised the fifty-six cases referred to in my statistics was, in the main, acute depression or melancholia, which was more marked than its antithesis, the acuteness of mania, possibly owing to the impending fear of danger and the apprehensions which a first pregnancy excited, and, as might be expected, this was especially the case in the first pregnancies of single women.

Bevan Lewis states that, fundamentally distinct as the two mental states of melancholia and mania would appear to be, the process of reduction is the same in both. What the nature of the process (which causes so great a transformation in the mind of the parturient woman) may be is not definitely ascertained, and, from the twelve deaths which took place in those suffering from the insanity of pregnancy, there was, apart from general paralysis in one case, nothing pointing to any definite cause of mental disorder peculiar to this period. There is in all cases of insanity a breaking strain at which the crisis occurs, and, such is the tendency with some authorities to look upon mental disease as essentially bodily, that a mere reference to mental strain may here not be out of place. We know that in ordinary life the perusal of a letter or the sudden communication of bad news may strike the stoutest to the ground; indeed, the physical accompaniments of fear are too well known to require detailing. Fear may paralyse, and hope can instantaneously give soundness and vigour to the frame, as much as despair can effect the reverse. The shame and worry of an illegitimate pregnancy must exercise a con-

siderable influence as a moral factor in the production of insanity, and my statistics support this view.

The relation of general paralysis to puerperal insanity I consider to be accidental, for the disease had been in existence for a considerable time previous to pregnancy; in one case, which lasted five years, general paralysis was known to have lasted over two and a half years before admission. During pregnancy one such patient was liable to general or hemiplegic seizures and alternating periods of albuminuria, and consequent regression of mental and physical symptoms, yet no premature confinement took place in these cases of general paralysis. When parturition is over, and the acute additional stress following this stage has passed, the general paralysis appears to make a slower progress.

Immediately after confinement the morbid and effete material which is taken into the maternal circulation during early uterine involution must tend to produce in the predisposed a profound irritation of the nervous system, and especially so should secretion and excretion be modified by interference, chemical or bacterial, with the normal functions of the venous, lymphatic, and other excretory organs. It is in the early stage of the puerperal period in neurotic women with an inherited tendency that the most violent delirium occurs.

This period in the lying-in woman is, of all others, the stage of septic infection, when saprophytic bacilli gain entrance into the blood, and either themselves multiply in the blood, giving rise to a general septicæmia and pyæmia, or produce general toxæmia through the formation of poisonous chemical substances. Whether saprophytic bacilli have pathogenic potency possibly depends upon the vital resistance of the blood and tissues; there are cases in which the resistance is so slight, owing to an unstable nervous system, that toxic products, and these alone, may cause maniacal delirium, and the symptoms appear to favour this view. The delirium comes and goes. The stimulus of a voluntary effort or other

afferent stimulus is sufficient to regulate conduct for a short time, but the mental confusion and delirium reappear.

The foul, dry, and coated tongue, the sordes on lips and teeth, the loaded bowels, scanty concentrated urine, and the dry skin point to an accumulation of nitrogenous and other toxic products in the blood. The chemistry of vital activity is not at present, however, sufficiently complete to enable us to state with definite accuracy the form and nature of the various basic substances containing nitrogen, which in chemical constitution resemble the vegetable alkaloids, and which act as toxins.

The identification and isolation of some of these ptomaines from putrefying material and from the cultures of bacteria concerned in putrefaction have been accomplished by some chemists, and some of these are demonstrated to be toxic in very minute doses, but others are non-toxic.

Arnold investigated the bacteriological condition of the lochia in puerperal women by inserting a sterilised tube into the uterus, withdrawing some of the contents and making cultures, with the result that whilst in some streptococci, staphylococci, anaërobic bacteria, and various bacilli have been identified and pure cultures obtained, in others no bacteria were found. The indications from these researches would point to treatment by appropriate antitoxins. Dr. Mott has examined the blood of some cases of puerperal mania and made cultures, but with negative results as to micro-organisms. Other observers have found streptococci, staphylococci, and the *Bacillus coli communis*. It is uncertain and improbable that all forms of puerperal insanity are due to the presence of bacterial poison, although unquestionably some are of septic origin, the sudden and violent symptoms favouring the theory of septic absorption; but an elevation of temperature usually accompanies septic infection, and some of the cases, although received from the second day after confinement, had no fever, the temperature remaining

normal throughout an acute delirium lasting for several days. The temperature in most of the puerperal and lactation cases was taken on admission and often afterwards, and it was exceptional for it to be raised above one to three degrees beyond normal. If these cases are toxic, how is it that insanity occurs most often after the first confinement? There is no doubt, however, judging from the analogy of poisons and of alcohol, that some of these cases are toxic, and that morbid material—animal, vegetable, or mineral—circulating in the blood is able to cause disordered energy in the cerebral cortex, with consequent mental aberration. If the uterine surface be not at fault, other toxic influences are found in the uræmia or other hæmic states.

With regard to lactation insanity, the great drain upon the mother, who, from inability to act otherwise in the lower classes, is often obliged to nurse her young for long periods, and who also, from the fear of another pregnancy, continues this for many months beyond what is necessary (in some of my cases even for two years), entails acute bodily exhaustion, and to this loss of albumen her mental break-down must in great part be attributed. Statistics of insanity in the rich and poor during this period support this view, as also does the prevalence of pneumonia with gangrene of the lungs and phthisis, the latter causing about 24 per cent. of deaths in this class. Impoverished blood-supply, uterine subinvolution, and a general cachectic condition accompanied this form of insanity in many of my cases. As to the association of this class with general paralysis, only one case occurred among eighty-three cases. This patient had seizures five months after confinement, and she was, in addition, the mother of five children. It is not improbable that the exhaustion of lactation may have precipitated what might otherwise have been further delayed.

Treatment.

No greater truism has been uttered than when Gooch stated that no medicinal agents can relieve a disordered mind except indirectly through the disorder of the body with which it is connected, and this disorder of the body must therefore be ascertained and discriminated.

The treatment of disorders during this physiological period must depend upon whether the stage be that (1) of pregnancy, or (2) of childbirth, or (3) after confinement. And first as to pregnancy. Out of 56 cases, whose insanity occurred during pregnancy, 49 were delivered in the asylum, 47 at full term. It has been recommended by some authorities that if the onset of insanity be early in pregnancy, abortion should be procured. Unless this treatment be adopted for convulsions or uncontrollable vomiting I fear that it has but little to recommend it. The symptoms in many suffering from this form of insanity pass off either towards the end of pregnancy or soon after confinement, whereas the chances are remote of operating successfully upon a patient who is not quite capable of assisting her own aseptic treatment, but who, on the contrary, may add further risks to it owing to her own mental condition. These disabilities appear to me to be strong contra-indications to premature delivery as an attempt to cure the insanity. In fact, when labour took place the patients were often described as stubborn and resistive, and not at all inclined to assist themselves. On the other hand there is an end to anxiety as to the future of the child if it survived, but this does not concern us. The great outbursts of excitement which are not infrequent symptoms of this variety, the marked fits of depression and fear culminating in suicidal attempts, require the most constant vigilance on the part of those around her, and, in private practice, the great question of home or special hospital treatment becomes of paramount important. The dislike and mistrust shown by the wife towards her husband, coupled with the general tolerance of trifling

mental deviations and discontent at these times, and the feeling of repugnance against putting pregnant women away make it difficult if not impossible for the husband to do so, and she is, in consequence, generally nursed by her friends. On the other hand, the indifference to her children and their possible danger at her hands, and the heedless regard of the home ties, may make it necessary to remove her to the asylum. The impulses to suicide and homicide are not infrequently aggravated by the presence of friends, whereas the regular routine of asylum life favours regular processes of thought and reflective action which are the first indications of recovery. Asylum treatment also often renders unnecessary the excessive and damaging use of narcotics, calmatives, and restraints which must be used to prevent the noise and destructiveness of patients in their own homes, and it rids the patient for a time of the family relations, who almost invariably have a prejudicial effect upon her. The question of treatment most often resolves itself into one of means. Personally I would hesitate to send the well-to-do pregnant woman from a home where she can obtain all the advantages of asylum care, which is impossible for the poor. The general treatment is that of the parturient female—a light dietary, general exercise, bright surroundings, attention to the bowels by saline aperients, and sleep by mild hypnotics, the best of which are chloral and bromide in combination. Complications which may arise, such as eclampsia, placenta prævia, etc., must be dealt with after the methods and upon the principles of obstetric practice.

Insanity occurring after the puerperium needs more special treatment both general and local. This is the form most prone to recovery, and well-to-do women, if suffering from the first attack, should not be sent away from home within the first six weeks of the onset of symptoms. At the same time this is one of the most difficult forms to deal with. It involves great expense, and owing to the emotional disturbance and the tendency to infanti-

cide and suicide is a very serious responsibility. As in the insanity of pregnancy, the presence of the husband is not only very undesirable, but is often the exciting cause of erotic delusions and impulses. It will be an intense relief to the family to avoid the stigma of an asylum when this is possible, and the gratitude of patients upon recovery from this form of insanity for everything that has been done for them—and they require vigorous treatment—is in marked contrast to the recovery from any other form. Moreover to the mother herself it will be an equally intense relief, as Savage states, to think she has only been suffering from "fever," and not brain disease, and it will help her to go through subsequent confinements without a mental break-down if she can be treated at home and not in an asylum. For the mania of this disease the "wet pack" has been used successfully, and is recommended by several authorities, but I have had no experience of its use. I have used continuous immersions with water at 100°, but had to give it up owing to the struggling. I have had satisfactory experience of the electric bath treatment when cases have appeared to become chronic and stuporose, or indifferent to their surroundings. Although the insanity of childbirth is impulsive, wild, violent, and noisy, it is a busy delirium not of a sthenic character, and treatment of too antiphlogistic a kind is undesirable. Most of my patients had undergone the most severe bodily strain, for, in addition to the puerperium, they also had the care, responsibility, and management of a home under peculiar difficulties. I know of no form of insanity which so well repays generous treatment, and the free administration of liquid, easily assimilable nourishment is a necessity. Indeed, the essence of treatment may be summed up in "compulsory super-alimentation." The great danger in these cases is starvation, and the crux of treatment is decisive feeding. Refusal of food is the most serious symptom in all cases of puerperal insanity, and must be combated at all cost, as when bodily improvement occurs in puerperal insanity it is very frequently the

forerunner of mental recovery. Food should be given during every quiet interval and at each opportunity, as the exhaustion from this form of acute delirious mania is intense. It is for these cases that alcoholic stimulants appear to me to be absolutely necessary, although I have seen cases of lactation insanity actually occur through their misuse. Cases are reported in which, within a week or so of admission into the asylum, puerperal women have developed gangrene of the extremities necessitating amputation; and although it is open to critical suggestion that this is a proof of septic or bactericidal orgin, I have not met with this gangrene of the limbs in any of the 259 cases under review, although I have met with cases in which, when pneumonia has occurred, the hepatised lung has failed to undergo resolution, and rapid phthisis has resulted. I often (probably in more than 25 per cent.) use the nasal feeding-tube for puerperal and lactation cases; eggs, beef-tea, milk, and malt liquor, malt extract, and cod-liver oil, are pressed upon the patient, who during puerperal mania can bear free doses of calomel, podophyllin, jalap, or croton oil, not only once but frequently repeated. Sleep must be obtained, and for this opium and morphine are both unsuitable: the former is contra-indicated owing to its effect upon the secretions, and also owing to its stimulating effect on the nervous and circulatory organs; the latter is uncertain, and when sleep is obtained by its use it is apt to proceed too far. Sulphonal is useful when there is much motor excitement. Paraldehyde is satisfactory, but more so are chloral and bromide in combination. It is important to relieve headaches which often accompany sleeplessness, and for this I have successfully used antipyrin and potassium bromide. It is especially during the early puerperal period that care should be rigidly exercised to avoid sudden excitement, to procure sleep, and to sustain the organism in a healthy nutritive state during the period of restoration. Iron, strychnine, and digitalis I have used during the later stages of involution, and the

great change from a cachectic waxy pallor to natural colour is rapidly apparent when iron is tolerated. A return of the menses may be looked upon as a forerunner of permanent mental improvement, and means to encourage this should not be omitted.

Before recovery is complete I have, as already stated, frequently noticed relapses and a return of mental confusion after apparent convalescence. This pathological periodicity appears to be the equivalent of the physiological periodicity occurring in normal sexual and reproductive life.

At times, after prolonged mania, a dull listless condition of semi-stupor is developed which requires a special effort to overcome. I believe it is at this stage that a change from the asylum to home surroundings may prove beneficial; or, if the patient is treated at home, a change from home is attended with marked improvement. If this be neglected an incurable dementia may set in and become fixed. One cannot insist too strongly upon a return to home life in these asylum or hospital cases. As to local treatment, vaginal douches of boracic lotion, Condy's fluid solution, and carbolic acid have been used in many of my cases, and the last appears to soothe also, as some patients have asked to continue the carbolic douches.

In cases where an offensive discharge occurs, and the temperature points to the retention of membrane or clot, it is necessary to dilate the cervix under an anæsthetic, and "curette" the endometrium. In one case this was successfully done. In another, confined before admission, sudden hæmorrhage occurred about the seventh week after childbirth, and recurred twice. The vagina was packed with ice, and normal saline solution injected into the rectum.

In two cases I have used the antistreptococcus serum, but beyond the slight reaction evidenced by elevation of temperature, which may have been due to the fear on her part that some harm was being done to her, no good resulted. Thyroid extract has been tried in several cases.

Marked physical reaction resulted, but no mental benefit accrued, and the cases became chronic.

The breasts need special attention. Glycerine extract of belladonna has been used, as also strapping, and in some cases abscesses formed, which had to be dealt with.

I have already referred to the prevention of this form of insanity by discountenancing the marriage of hysterical and neurotic persons, and upon this I should like further information from the practice and experience of others.

I conclude by expressing my firm belief that insanity is, and ever will be, the product of two factors—stress and heredity.

We are living in an age in which the requirements of modern life involve an increasingly heavy and severe strain. The greater the inherited vital resistance the greater will be the strain required to overcome it. Our duty is to raise this resistance by promoting the development of a healthier and more vigorous race, and thus render growth more perfect and death more remote.

Sir JOHN WILLIAMS dwelt upon the peculiar condition of the nervous system in pregnancy, parturition, and the puerperal state, and reviewed briefly the pathology of puerperal insanity. He strongly deprecated any curetting of the uterus shortly after labour or abortion, considering it a very dangerous practice.

Dr. BLANDFORD said that the statistics of recoveries given by some physicians were even more favourable than those of Dr. Jones. Dr. Clouston tells us that 87·5 per cent. of his cases had recovered by the ninth month. Mr. Bevan Lewis gives a recovery rate of 80 per cent. The mortality in the cases of each was about the same, 8·4 per cent. These were all cases sufficiently severe to be sent to an asylum. Many slighter cases not sent away would swell the recoveries, though it is to be feared that the mortality rate would also be increased by the deaths of patients who ought to have been sent to an asylum, but were not because of the prejudice of friends. Beyond question the earliest symptom of approaching mental trouble is loss of sleep, and this should be most closely watched, and every precaution taken that the patient shall not be disturbed by noises or talking in the room, by the child being brought to be nursed, or by the visits of friends. With regard to Dr. Jones's question, is the mental disturbance due to toxæmia or septicæmia, or both?—it must be remembered that toxæmia and septicæmia are different things.

Septicæmia, unfortunately, we know a good deal about, and the result is puerperal fever, not puerperal insanity. About toxæmia we have heard a good deal, and some have gone so far as to say that all insanity is toxic, and depends upon toxins. We have a great deal more to learn about toxins, which are now much in fashion. Why do certain people generate toxins while others do not? Thousands and thousands of women bear children and never become insane. Among native races child-bearing is hardly looked upon as an ailment. Why do certain women generate the peculiar toxin which causes insanity? Toxins do not explain the pathology of insanity. They do not agree with the on-coming, the symptoms, or the passing away of the disease.

Dr. HERMAN thought the paper and the discussion upon it would do great good if it impressed upon the profession that the main duty of the general practitioner and the obstetric physician in regard to puerperal insanity was to prevent it. Treatment was mainly in the hands of the alienist. To prevent puerperal insanity, the great things were to see that the patient got food and sleep. If sleep was absent, he thought that the best hypnotic was alcohol. There were objections to alcohol, of which in the present day no one was in danger of losing sight. Every hypnotic, if taken too much, did harm; but the harm done by alcohol if taken too freely was far less and far slower in coming than that done by chloral, bromide, morphia, sulphonal, or any other hypnotic if taken habitually for long periods.

With regard to the questions in paragraph 7, he would ask what was hysteria? The most common and most definite hysterical phenomenon was the well-known hysterical seizure; but the author surely would not propose that the marriage of every woman who had suffered from hysterical seizures should be discountenanced. With regard to the less definite and less common nervous symptoms commonly spoken of as hysterical, he thought the knowledge we had of these nervous states, and our power of accurately forecasting the future of such patients, the effect of marriage upon them, and the kind of offspring they were likely to have if fertile, were far too imperfect to justify medical men in taking upon themselves the responsibility of discountenancing a proposed marriage. To forbid marriage was often to spoil the happiness of a woman's life. The utmost that a medical man should do was to express to those concerned whatever fears he might have as to the result of marriage, explaining also how much these fears were merely conjecture.

Dr. CHARLES MERCIER, after touching upon several of the points suggested for criticism by Dr. Jones, took exception to the statement that headache was a common prodroma of puerperal insanity. The only reliable indications were, he thought, sleeplessness and loss of appetite. He did not think that single women who became mothers suffered much emotional stress as a

rule. Many of them were already half-witted, and the insanity of the puerperium was only an exaggeration of their usual state. The rest were, for the most part, upon a low moral plane. When these incurred the risk of maternity they counted the cost and were ready to face the music. He protested strongly against the suggestion that puerperal mania could be treated satisfactorily at home. Institution treatment was always best, for reasons which he enumerated. Menstruation was often a mark of recovery, it was true; and when the mental state cleared up on the appearance of the menses the combination was extremely favourable, but the establishment of menstruation without mental improvement indicated a very gloomy future.

Dr. CHAMPNEYS said that obstetricians had very limited opportunities of observing cases of insanity, even that connected with parturition, compared with alienists. In private an obstetric physician might or might not see his patient during her pregnancy; he saw her during her labour, and then, if all went well, for a month. In a lying-in hospital he did not see his patient during her pregnancy; he saw her during her labour, and, if all went well, for a fortnight only. On the other hand, the net of the alienist swept insane patients into it at all other times. He had not found the over-active nurse described by Dr. Blandford. Doubtless a nurse who got up six times in the night to poke the fire and wake the patient would be objectionable; but, in his experience, nurses were apt to get up rather too little than too much. He fully endorsed all that had been said about sleeplessness as the striking symptom of threatening insanity, about the necessity for procuring sleep, and about the pre-eminent value of alcohol as a sedative in such cases. He was surprised to hear Dr. Mercier bring all single parturient women into one category, and to say that they were all of low moral calibre, and did not much care about their illegitimate pregnancy and motherhood. He had not had a very wide experience of such cases in private, but he had had a certain experience, and his opinion was that such women differed widely. He had seen women, both married and unmarried, apparently without any moral sense, even among the so-called upper classes, and had been disgusted to find that their mental attitude had been one of a sort of inward chuckling over the escape of discovery. On the other hand, he had seen such women in the worst depths of mental distress, penitence, and remorse. He had always been greatly interested in the relation between single births and insanity, and it had always seemed to him that if mental distress were a factor in producing insanity, its frequency in such cases ought to vary directly as the moral standard. He would be glad to know if this had anywhere been worked out. It is a well-known fact that the moral standard with regard to such matters varies greatly in different countries. If the above conclusion were true, the proportion of cases of in-

sanity in single mothers ought to be lowest in immoral and highest in moral countries. As regards toxæmia and its relation to pregnancy, he did not think that the explanation given in the paper would altogether suffice. Effete products were doubtless prevalent after confinement. On the other hand, the sense of physical and mental comfort and relief ordinarily experienced after delivery was proverbial. He did not think that this would be the case if ordinary toxins were the usual cause of insanity after labour. He had been asked whether any one present had seen convulsions produced in a baby by mental shock to the mother. He had not; but he believed he had seen an unborn child killed in this way. The case was one of an advanced extra-uterine pregnancy many years ago, in which he had constantly watched the fœtal heart. The mother received a sudden shock from a shriek in the next ward, felt the child move violently, and from that time the fœtal heart ceased and the child had died. He believed still that there was a distinction between ordinary and septic cases of insanity, and he knew the terrible acute delirious insanity with albuminuria which killed the patient though beginning insidiously; but he would be glad to be able to distinguish ordinary from septic insanity.

Dr. Lloyd Andriezen stated that the division into insanity of pregnancy, of the puerperium, and of lactation was a conventional, not a nosological classification. He recognised in asylum patients a form of insanity peculiar to and common in the puerperal state. The insanity of the later months of pregnancy was often of a depressive form, and was fraught with danger of suicide; but other psychoses might also manifest themselves at this period. He concluded from a careful study of statistics that illegitimate pregnancy was twice as frequently followed by mental disorder as legitimate pregnancy. He regarded puerperal insanity as comprising three main types of mental disorder, viz., first, a collapse delirium following upon parturitions attended with marked exhaustion and hæmorrhage; secondly, an acute confusional insanity with hallucinatory delirium (frequently misnamed "mania"); and thirdly, mania or melancholia proper, or alternating manio-melancholic insanity. This third category of cerebral affections was rare in the puerperium, while the second variety was *per contra* frequent. The patients who developed the characteristic acute confusional insanity with hallucinatory delirium above noted were generally psychopathic subjects, whereas normal women going through the stresses of the puerperium suffered only a slight ephemeral cerebral disturbance. Fifty per cent. of cases of puerperal insanity in public asylums (whether primi- or multiparæ) gave histories and indications of a psychopathic heredity. He believed that septic infection from the bruised and wounded tissues of the parturient canal played an important *rôle* in the causation of puerperal delirium. Where

the septic or toxæmic factor was intense a corresponding disturbance of pulse, respiration, temperature, and secretion was noted. Clinically and psychologically it was possible, as a rule, to distinguish cases of collapse delirium from those of acute confusional puerperal insanity of combined psychopathic and septic origin, and occurring in the first fortnight after childbirth. The latter manifested symptoms of insomnia, loss of interest in surroundings, and loss of natural affection for the child—indications of clouded consciousness and cerebral apathy. To talkativeness succeeded a stage of incoherent or rather confused speech, and excitement from hallucinations of sight and hearing followed. These patients were liable to dangerous suicidal, destructive, and infanticidal impulses; they were not cases of "mania" properly so called. The insanity of lactation was typically an exhaustion psychosis, and in a few this was complicated by toxæmia from secondary pelvic, or mammary trouble.

Dr. F. W. Mott said that the culture experiments referred to by Dr. Jones, as having been performed by him, were too few to be of any real value; and although negative results were obtained in two cases of puerperal insanity with fever, that did not prove that the fever, nor possibly the insanity, was not due to septic absorption. Dr. Mott had noticed that among the large number of cases recorded by Dr. Jones there was not a single case of gangrene; perhaps, therefore, he might be allowed to relate an instance of symmetrical gangrene of the feet which he had seen in a woman certified as suffering with puerperal insanity, who was admitted into one of the London county asylums. This patient, not long after admission, developed signs of gangrene of the feet, and for this reason his attention was called to the case. The history showed that the child had been born dead, and it was found that she was suffering from septic endometritis. Her mental condition improved when this was treated. The speaker asked Dr. Jones what he considered were the most important symptoms distinguishing puerperal insanity of septic origin from the delirium of fever occasioned by the same causes. Some authorities describe a transitory puerperal psychosis, some of which cases accompanied by fever would be difficult to distinguish from cases of puerperal fever with delirium. Dr. Mott considered that the majority of cases of puerperal insanity were not of septic origin, but due to inherited psychopathic or neuropathic conditions, the determining factors being stress and a subminimal deficiency in the blood. Both in lactation and pregnancy the maternal blood has to supply a large amount of complex phosphoretted bodies of the lecithin group for the building up of the nervous tissues of the infant, of which the relative weight to the body tissues is very large, as shown by the ratio of the brain to the body-weight in the infant. This, in a

psychopathic individual, may lead to nutritional deficiency in the maternal brain tissues. Dr. Mott said he would be glad to hear of the method by which the last speaker, Dr. Andriezen, had been able to determine microscopic signs pathognomonic of puerperal insanity.

Dr. Percy Smith said that his statistics in cases of puerperal insanity differed somewhat from Dr. Jones's. From the consideration of 100 consecutive cases at Bethlem Hospital he had found that in 41 per cent. insanity had followed a first confinement, as against 33 per cent. in Dr. Jones's cases. Again, he had found 57 per cent. of cases begin in the first fortnight after delivery, against Dr. Jones's 43 per cent. The recovery rate at Bethlem Hospital had been about 80 per cent., as against 66, and only two deaths had occurred out of the 100. No doubt the fact that the patients admitted to Claybury were of the pauper class, and their general nutrition before the illness in a less satisfactory state than in those admitted to Bethlem Hospital, accounted for the difference in recovery rate. With regard to the early symptoms, he thought that next to sleeplessness, restlessness and early confusion of thought were more important than headache. He agreed with Dr. Mercier that there was no definite form of mental disorder which could be looked upon as absolutely characteristic of puerperal insanity, and pointed out that cases might be either of the delirious, confusional, maniacal, melancholic, stuporous, or delusional types; and he did not think it was possible unerringly to pick out the puerperal cases in the wards of an asylum without knowing the history. Mania with religious or erotic delusions was often seen in young women the cause of whose insanity was not puerperal. He had very little personal knowledge of illegitimacy as a cause, but called attention to Clouston's statement that 75 per cent. of the puerperal cases admitted to Morningside Asylum followed illegitimate births. Another point in the ætiology was that 26 per cent. of the cases admitted to Bethlem Hospital had had a previous attack of insanity, either one before marriage or one after marriage, which was not puerperal in origin, or a previous puerperal attack. He referred to Dr. Herman's remarks on hysteria, and said that alienists constantly found a history of previous "hysteria" in patients admitted to asylums which, when carefully inquired into, was found in many cases to have been a previous attack of definite mental disorder euphemistically called "hysteria." He was sure that such patients ought not to marry. With regard to septic causes, in 23 per cent. of the cases admitted to Bethlem Hospital there had been a history of the use of forceps, or of perinæal laceration, or severe post-partum hæmorrhage, or of pelvic inflammation, or abscess, or some other indication such as high temperature, abdominal tenderness, offensive lochia, etc., of the possibility of septic trouble. Although, no doubt, primiparæ

were most liable to injuries in confinement, in his experience the most severe septic cases had not been primiparæ. Although in the days of antiseptic midwifery there ought to be no septic cases, yet he was sure puerperal insanity would still occur in persons of neurotic or insane inheritance. With regard to treatment, he would not go fully into the question, but would say that his practice at Bethlem Hospital had been that unless there were definite signs and symptoms pointing to some pelvic trouble or septic abortion, the uterus and pelvis were left severely alone. Only in very transient and some exceptional cases could the patient be treated at home, and in the large majority early asylum treatment gave the best chance of recovery.

Dr. Ernest White stated that during nearly thirty years spent in public asylums he had been called upon to treat many cases of puerperal insanity. Moreover in 1896 he had carefully collected his records, and contributed a paper upon the subject to the 'King's College Hospital Reports.' He thought Dr. Jones's proportion of recurring cases too low; probably 1 in 400 confinements was nearer the mark, for there were many which did not come to the asylums for treatment, and of which no records were obtainable. He would like to draw attention to certain of the mental symptoms, and to the temperature charts in this disease. The obscene language, erotic tendency, and self-abuse were probably of peripheral origin, from abnormal uterine conditions, altered lochia, etc. Hallucinations of hearing and sight were common, more rarely those of taste. He had not observed those of smell alluded to by Dr. Jones, nor did headache occur in his cases. The delusions were those of a persecutory type, and accounted for the early refusal of food, which the patient imagined was poisoned. There was a marked tendency to suicide by impulse, and to infanticide. Next as to the temperature charts: in nearly all his cases there was an elevation of temperature of from one to two degrees in the evening, with a morning fall of a degree or less, lasting from ten days to a fortnight; then a subnormal temperature for several weeks. In two or three cases there was long-continued febrility, and charts like those of enteric fever with evening exacerbation and morning remissions lasting a month or more, but followed by subnormal temperatures for several months. These cases he thought of septic origin; they did badly, and generally became chronic or died. Next as to causation: the most frequent cause was hereditary nerve instability. He had no experience of illegitimacy as a cause, and did not believe in it. The patients were not infrequently primiparæ over thirty years of age, and abnormal uterine conditions after confinement, to which these patients would be predisposed, were often exciting causes. The blood was always impoverished, with diminished hæmoglobin; hence ferruginous tonics were indicated. He had not found definite relapses

common, but of course the mental state varied much during the earlier stages. Frequent baths with scented soap were necessary on account of the perverted skin secretion. Home treatment was certainly prejudicial to recovery in most cases, from want of moral control, from contact with relatives, and from the necessity of instrumental feeding, often thrice daily. In the case of a lady with ample means, to whom he was called in consultation, the house was converted into a complete private asylum, for which, with its grounds, it was admirably adapted; but the treatment failed from the want of moral control—the patient knew she was at home. He advised removal to an asylum, and she quickly recovered.

Dr. GRIFFITH would confine his remarks to only a few points out of the many which had arisen. Dr. Jones had referred to the onset of lactation as a cause of marked constitutional symptoms and pyrexia; he could assure him from the evidence, not of hundreds, but of thousands of records at Queen Charlotte's, that this is not the case unless some definite pathological complication arises. With regard to the insanity of pregnancy he agreed with the prevailing opinion that there were no specific forms; pregnancy might be a complication to insanity or the reverse, but there is a group of cases quite distinct, in which the main feature is the apprehension of the patient, either real or simulated, that unless the pregnancy is terminated she will become insane. He looked upon all such cases with the gravest suspicion, not of insanity, but of rather the reverse, as an ingenious method of putting strong pressure on their medical advisers to produce abortion. He had seen no exception to this in the cases in which he had been consulted. As to premonitory symptoms, he regarded the refusal of food as of equal importance as sleeplessness, and he was sure that in general practice the absolute necessity for forced feeding, even by the nasal tube when necessary, was not properly recognised as the essential means for saving life, just as absolute isolation from husband, children, and friends was essential for recovery of mind; and with regard to this isolation, he was in the habit of advising removal from home in cases where perfect isolation and the most skilled nursing were not obtainable at home.

Dr. SEYMOUR TUKE, while fearing that the alienists had been given too large a share in the debate, was glad that some one had stood up for the women who had borne illegitimate children, for some were certainly cast in a higher mould, and did feel the mental distress which Dr. Jones had laid down as a possible factor in the ætiology. Dr. Tuke pointed out three factors in favour of asylum *versus* home or lodging treatment: first, that it was hard upon the patient to be under control where she had heretofore been in command; second, the possibility in a well-ordered asylum of instantly changing the attendants if

necessity arose through the patient taking a dislike to any of them; and third, the fact that a home where restraint had to be applied of any kind was likely to have less pleasant associations and memories after recovery. He mentioned how acutely those who devote themselves to their asylums felt the unjust and uncalled-for criticisms of some people who ought to know better. He strongly agreed with previous speakers in the necessity for good feeding, and urged the early resort to artificial feeding if called for. While allowing the great usefulness of alcohol, the danger of forming a habit must not be lost sight of.

Dr. Claye Shaw said that, of the many points raised by Dr. Jones, one of the most important was that relating to the entity of a mental disorder due to the puerperal state; and though the author of the paper seemed to incline to the fact of the actual existence of a specific disease, he had yet voiced it in no very certain tones, and a similar hesitation had been apparent in the utterances of other speakers during the evening. To him it was by no means an easy thing to be always sure about. It would appear that there are two classes of cases really distinct, but both characterised by the delusions, incoherence, and other mental symptoms supposed to be pathognomonic of insanity due to the puerperal state alone. Insanity, characterised by prominence of sexual mental demonstration, might occur in young women at the developmental epoch, or in women of middle or advanced age in whom there were no uterine or ovarian complications of any kind to be found, just as delusions of a sexual character might be seen in boys and men accompanied by acts of masturbation, and yet there was no occasion to attribute the symptoms to influence from the genital organs at the moment. When, however, the temperature was higher than is usually met with in acute insanity, and the symptoms came on shortly after parturition, there was a strong argument in favour of a direct connection between the mental and bodily states, especially when there was a history of hereditary taint, and with the probability of the presence of a septic condition. The theory that impressions from the viscera and especially from the sexual organs are transmitted to the central nervous system, and arouse ideas there which form all kinds of associated connections, is quite sufficient to account for the fact that sexual symptoms of a similar character and intensity may occur as the result of a lesion which is primarily central or of one due to external influence, whether caused by an auto-intoxication or by simple irritation. To show the importance of a correct diagnosis the speaker mentioned the case of a woman in whom maniacal attacks, characterised by sexual delusions and hallucinations, occurred regularly at the catamenial periods. From the regularity of the symptoms there appeared to be no doubt as to the sequence of cause and effect, and oöphorectomy was proposed,

but fortunately not carried out, for the patient recovered completely. The dependence of one condition on the other was merely a coincidence. Great care was therefore necessary before concluding that mental symptoms pointing to the implication of a portion of the organic system were really more than the projections of a strictly central affection, and from this point of view the remarks made by Sir John Williams were of the greatest importance,—those, namely, in which he had so strongly deprecated the curetting of the uterus, an operation the advisability of which had been mentioned in the paper.

Dr. AMAND ROUTH urged the desirability of having intermediate "receiving-houses" or nursing homes, where women suffering from such temporary insanities as those under discussion could be received and treated. Such a plan would avoid the stigma of having been in an asylum, and would make it much easier to get the friends of the patient to agree to her removal.

The PRESIDENT thought that obstetricians saw these cases, as a rule, at a much earlier stage than did the alienists. Perhaps for this reason, and because of the shortness of time, the introducer of the subject had said but little about diagnosis. As a fact, when the patient was admitted into an asylum the diagnosis had been made; whereas in the earlier stages it was not always easy to say that a case amounted to actual insanity. He considered with Dr. Griffith that the refusal of food was a far graver symptom, and pointed much more certainly to insanity than did sleeplessness. This, and headache too, occurred not infrequently in patients who never developed insanity; whereas refusal of food—and by that was meant not mere anorexia—was practically only associated with insanity. In all fatal cases he emphasised the importance of making a thorough *post-mortem* examination, not merely of the brain, but of the other organs. For probably pure insanity was rarely fatal. He mentioned a case that presented the ordinary symptoms of puerperal insanity. She died, and a *post-mortem* examination revealed suppuration extending from the parametrium behind the fascia up to the kidney.

Dr. JONES (in reply), after acknowledging the distinction which was conferred upon him by asking him to read his paper upon "puerperal insanity," stated that when he consented to open the discussion it was less with the idea of imparting information than of eliciting and learning the opinion of others, who practised in what to him was an "unknown land." He hoped the full and complete discussion might lead to a more comprehensive grasp of the cause or causes of this form of insanity, and might thus modify, if not prevent, the occurrence of this serious and grievous affliction. In his reply he thanked Sir John Williams for the definite view he expressed as to the induction of premature labour. Sir John Williams did not consider abortion to be a remedy for the cure

of the insanity of pregnancy, and the experience he quoted of mania following abortion supported his conclusion. Sir John Williams was also against the operation of "curetting" the endometrium, giving as his reason the unjustifiability of leaving a large exposed absorbing area, which did so much to favour toxæmia and fatal blood-poisoning. He was glad that so high an authority as Sir John Williams recognised that a special form of insanity did appear to be simultaneous with, if not an effect of the full development of the reproductive organs, and the interesting observations from comparative anatomy supported his views. In regard to the association of albuminuria with multiparous pregnancies, Sir John Williams' experience agreed with the present views upon immunity. As to phthisis and pregnancy, the writer's experience was quite the opposite in regard to general paralysis, which made slower progress after the stress of pregnancy and parturition had passed. In regard to Dr. Blandford's remarks, there certainly was a difference between the insanity of septicæmia and toxæmia. The latter was similar to that from toxins generally, and was of the nature of a busy delirium, which could be overcome by a sufficiently strong afferent stimulus, such as a mental effort, and the patient could be roused to rational conduct and coherent conversation; but the condition could not be sustained, incoherence and busy delirium again recurring. In septicæmic or pyæmic cases the mental condition which accompanied was of a low muttering with no awakening of the reasoning faculties, but it is not improbable that these were states consequent upon different poisons or degrees of the same poisoning. He was glad to find that Dr. Blandford agreed with his views in regard to sleeplessness, and the necessity there was for mental quietude during the period of recuperation following upon parturition.

Dr. Herman touched the key-note of treatment when he referred to sleep and food as the main remedies, but these are not to be obtained unless with the aid of properly trained and skilled assistance both medically and in nursing. He agreed with Dr. Herman that alcohol is a powerful and most useful remedy, being a stimulant and a sedative if not a food. Dr. Herman asked as to the definition of hysteria, and referred to hysterical fits. Dr. Jones agreed with Dr. Percy Smith in his remarks upon hysteria, but he himself did not allude to nor specially imply the occurrence of "fits," and would rather consider hysteria as a definite or prominent symptom of that loss of inhibition over the higher centres which indicated a neurotic or psychopathic taint. He agreed with Dr. Herman's remarks fully as to the marriage of hysterical persons, and the consideration of what the prohibition of matrimony meant in the two sexes.

Dr. Mercier, whose remarks are always philosophical and logical, urged that insanity was one and indivisible. Dr. Jones fully

agreed with the statement that insanity meant a perversion of consciousness sufficiently marked to change conduct, but when Dr. Jones urged that there was a special form of insanity in association with the puerperal condition he implied that the great disturbance, mental and physical, involved in pregnancy and parturition acted as a distinct and exciting cause of this perversion of consciousness which we call insanity. Dr. Mercier did not appear to him to appreciate sufficiently fully the effect of a great emotional shock in the causation of insanity, and questioned the great prevalence of insanity in single women and first pregnancies. In the former Dr. Mercier considered the break-down to be due to a lower moral standard and code, and to the lower resistance which persons bearing these stigmata exhibited to stress; but in Scotland 25 per cent. of all puerperal insanity occurred among single women, and it would be too much to say that one in every four cases of insanity in this class in Scotland was a degenerate. Dr. Jones rather agreed with Charles Kingsley's views as to the causes of illegitimacy, viz. that if suitable environment were provided, in the form of houses, wages, accommodation, etc., for men who wished to marry, this lapse, not on the part of degenerates only but also of the vigorous and comely, would be less prevalent; and we know that in Scotland, as well as in other country districts, there is almost culpable neglect in providing suitable housing accommodation and occupation. Dr. Mercier referred to the frequency of sleeplessness but not of headache; but headache is a subjective symptom, whereas sleeplessness is especially objective, and Dr. Jones felt very convinced from the information of friends—and this was obtainable in most cases of puerperal insanity as contrasted with the histories obtainable in other forms of insanity—that headache and sleeplessness were parallel and cardinal premonitory symptoms. Dr. Mercier felt that Dr. Jones made too much of home treatment, but the stigma appertaining to certified insanity and detention in an asylum was so great a disability, and such a ban upon the sufferer, that every opportunity of home treatment should be tried before the patient was sent to an asylum. This ban was not limited to the sufferer, but it also affected the head of the family and many of those dependent upon him. Only the other day a young man was refused as a first-class life because his mother was an inmate of an asylum, and Dr. Jones felt it to be his duty to avoid so far-reaching a prescription if this were in any way possible. Dr. Mercier does not lay so much stress upon the reappearance of the menses as appeared to Dr. Jones to be justifiable, and only when the menses coincided with recovery were they to be looked upon as an element in prognosis. It must be remembered, however, that although in some cases the reappearance of the menses was not coincident with recovery, in all cases of recovery the menstrual periodicity returned.

Dr. Champneys also agreed with Dr. Jones that sleeplessness was a frequent if not constant precursor of insanity, but Dr. Champneys did not think that insanity was more common in single women, and he asked whether the moral standard in single women was lower than that in married. Dr. Jones could not say that this was so. Moreover the fact that in the district whence London County asylums drew their patients the ratio of illegitimate births to legitimate was 3 per cent. in the insanity connected with reproduction, the ratio of single to married was 12 per cent., which appears to argue a distinctly greater liability to insanity among single women. Moreover in 33 per cent. of married women insanity occurred at the first confinement, and in addition to the stress connected with the awakening of maternal instincts for the first time there were in single women those strong emotional disturbances connected with fear, disappointment, neglect, and shame. As to toxins being the chief cause, if this were so, then how comes it that most of the cases of insanity occurred with the first confinement? and Dr. Percy Smith records it that in his experience septic cases were most often the third or later confinements.

Dr. Andriezen referred to the indiscriminate use of terms in insanity, and rightly so, but it is the cause of confusion in metaphysics and in psychology, and possibly in other sciences. Dr. Jones believed that Dr. Andriezen had done much to make definitions clear, and he appreciated the remarks of Dr. Andriezen as to the increased incidence of puerperal insanity among single women in different countries. Dr. Jones fully believed this, and felt that insufficient notice was being taken of emotional shock and mental causes in the production of insanity. Dr. Jones referred to the recommendation of Dr. Andriezen that married women who had once been insane should not again become mothers, but he feared it was a counsel of perfection, as he knew and quoted from his own experience. His own advice to discharged patients used to be that cohabitation may be resumed, but no pregnancy should take place; and it is needless to say his advice was absolutely disregarded, and he has since ceased to urge it. Moreover he is now convinced that it were best not to have offered it.

Dr. Mott's remarks in regard to symmetrical gangrene and toxic cases were very interesting, but such cases had not fallen to Dr. Jones' experience. He was also greatly interested in the suggestion which Dr. Mott gave as to the long-continued apparent toxæmia which pregnancy involved to the mother, and the great proportion in which lecithin (the phosphorus-containing element) existed in the infant, and the ratio of the brain weight to that of the body in the new-born infant. Dr. Jones looked forward to the result of further investigation which Dr. Mott proposed making into the condition of the blood of puerperal cases; his

results in cases of general paralysis had been highly instructive.

Dr. Percy Smith, who has himself written an interesting article upon this subject in 'Quain's Dictionary,' takes exception to his figures. They certainly do not quite agree with his from Bethlem, neither do they quite tally with Batty Tuke's statistics, but they harmonise pretty closely with Clouston's. The apparent discrepancy can, however, probably be explained by the fact that Claybury receives all rate-aided patients from the county of London territorially situated in the east, whereas Bethlem Hospital is supplied from the poorer middle classes; those who can afford it from this class are treated at home, others are sent to licensed houses, private asylums, or hospitals, of which Bethlem is one. It is interesting to find that Dr. Percy Smith does not regard headache as a premonitory symptom in addition to sleeplessness, for it certainly was frequently reported by the friends, and not infrequently by patients themselves in his own cases. Dr. Percy Smith referred to the various subdivisions of insanity in the different groups of the author's paper, but he purposely avoided this (taking only general types), as he wished to obtain information on the broad issues raised as to toxæmia, heredity, pathology, and the induction of labour rather than details as to classification. Dr. Percy Smith states that his septic cases occurred in the later, such as third or subsequent pregnancies; this fact is interesting. Two per cent. of deaths is low, and Dr. Percy Smith should be congratulated. The deaths recorded in his own cases include all the forms of insanity described, viz. those of pregnancy, those after confinement, and those accompanying lactation.

Dr. White's calculation of the incidence of puerperal insanity is, he ventured to think, a little too high. He based his statistics upon the birth rate of London, and believed it to be lower than Dr. White states. He referred to the exhalation from the skin in cases of puerperal mania, but in all cases of acute mania, males and females, this is recorded. As to its cause, it should be remembered that the brain and the skin are both developed from identical layers of the blastoderm, viz. the epiblastic, and when the higher functions are impaired or perverted, those of a similar embryonic formation may also tend to be affected. He only threw this out as an hypothesis, having no facts to support it. Dr. White stated that both infanticide and heredity are greatest in puerperal cases, but his statistics served him differently. He found both infanticidal and suicidal impulses to be most common in lactation cases, next among the puerperal, and lastly in those of pregnancy. Dr. White states that in his cases albuminuria was frequent, and occurred in many. It would be interesting if he could give the actual proportion.

Dr. Griffith's remarks he considered to be most important and

equally instructive. If there is an insanity during pregnancy and during parturition of a transient nature, and with strong infanticidal tendencies, this would account for tragedies which are recorded at this period. He looked upon Dr. Griffith's experience as of great medico-legal interest. He was also instructed to hear from him that there are no febrile symptoms concurrent or immediately preceding the onset of lactation. As to sleep, he asks for information in regard to drugs. Sulphonal has been given for motor restlessness. He advised its not being administered at all. It is a strong neuron toxin, and can in some cases cause insanity to become irrecoverable. Opium is contra-indicated, as it causes cerebral erethism. Morphia may produce sleep. When it does there may be great alarm whether the patient will come round. Once it acts, it acts powerfully and dangerously. He had used hyoscine and many other drugs, but had found chloral hydrate and bromide of potassium to be the best and most soothing. The crux of treatment, again, is decisive feeding, and with the nasal rather than the mouth tube; alcohol with fluid food is the best sedative, as Dr. Herman has already said. He considered, with Dr. Griffith, that nurses who have had special training with mental cases are absolutely necessary for puerperal cases. Trained hospital nurses have been known to run away and leave in disgust cases of puerperal mania when patients (as invariably in this form they do) use filthy and obscene expressions, and when they exhibit immodest behaviour. Moreover they understand the necessity of safeguarding against sudden suicidal and infanticidal impulses, and they are experienced in the import of hallucinations. He would further counsel avoiding sending patients to asylums of whatever kind.

Dr. Tuke, in his remarks, appeared to think that he does not sufficiently champion the asylum. He would beg to affirm, in the strongest words at his command, that they need no defence. They are humane, they are staffed by conscientious persons who have special experience, and who have devoted their lives, often at great personal risks, to work which is essentially self-denying, and they offer the best means to recovery; but there is a borderline to be passed before they get there, which involves the reputation and the living of those related to the patient, as well as her own in society, and the consequence of her legal taint, once certified, reacts most unfavourably upon her own feeling of self-respect. In spite of the many advantages, he would again caution care in sending patients to an asylum.

Dr. Claye Shaw referred to the erotic delusions which are so prominent in this form of insanity, and also to the recommendation of oöphorectomy in some such cases. He evidently agrees with the views of Sir James Simpson that the organ diseased may give a colour to the delusions. If, however, the ovaries were indiscriminately removed, it would be necessary to include

in the participants of this vigorous treatment probably all epileptics and the majority of religious devotees and ecstatics, some of whom have founded sects, and have been canonised by posterity as having lived saintly lives, and are recommended as examples worthy of imitation, and as beacons to illumine the weary pilgrimage of frail humanity. There is no doubt, however, that in these material days too little importance is laid upon mental as against physical causes of insanity.

Dr. Routh's question as to reception-houses for the care of transient insanity is, he believed, under consideration elsewhere. The Lord Chancellor is stated to have a new Lunacy Bill ready for the consideration of Parliament in February next, but whether he will think fit to introduce this change is at present not known. Whatever changes are introduced will need very careful safeguarding against any abuse of the liberty of the subject, which inalienable right of a British subject may be considered quite safe in his custody.

The President (Dr. Horrocks) emphasised in a categorical imperative the necessity of a thorough, full, and complete post-mortem examination in all cases of death from puerperal insanity, and when he said that these examinations are carried out either by or under the direct supervision of Dr. Mott, no doubt he will be satisfied.

In conclusion, he felt that he had come far short of any expectations which may have been formed upon the results of his introduction to the discussion, but the latter had been full and representative, and he very cordially acknowledged the kind way in which the speakers had commented upon the paper, and also the way in which it had been received.