"Mention has already been made of the incipient dementia in the prodromic stage, of the marked dementia in the later stages. . . .

"In the earlier stages the dementia comes on in an insidious manner, but may advance by sudden leaps after apoplectiform seizures."

At that time, and previously, the present writer attempted to describe some varieties of general paralysis of the insane, chiefly on the lines of the morbid anatomy of the disease, in five different groups of cases considered as to—

The time-relations of the symptoms and cerebro-meningeal and other lesions.

The predominating localisations of the lesions; also—

Their pathological type and course.

And in the chapter (pp. 404–414) on "Varieties of General Paralysis," based on cases actually observed both clinically and necroscopically, it is stated as follows (p. 414): "It may be said that the mental differences to which I have referred in the above groups do not mark any essential differences in the cases; that, for example" (*i.e.*, by one assuming a critical attitude), "it may be urged that the grandiose delirium is, in reality, only a manifestation of that *dementia* which on the mental side appears to be of the essence of the affection."

And it was added that differences in the *mental* symptoms of general paralysis, though not essential, are yet of value.

The apparent increase of the simply demented type of general paralysis of late years is, at least, partly factitious, *i.e.*, in so far as dependent on better recognition.

Menstruation in its relationship to Insansity. By SHEILA M. ROSS, M.D., Ch.B., Assistant Medical Officer of Health, Huddersfield; late Assistant Medical Officer, Holloway Sanatorium.

THE following observations are made on the menstrual history for ten years, from 1897–1907, of all newly admitted and transferred patients, in whom the catamenia were present, in the Holloway Sanatorium Hospital for the Insane. The

patients were all drawn from the upper and middle classes, and their ages varied from seventeen to fifty-five years.

In all the menstrual history of 395 patients was examined, two types of mental disease being practically unrepresented—idiocy or imbecility and insanity with epilepsy, such cases not being admitted. The proportion of cases of general paralysis of the insane, too, is much lower than would be found in a pauper asylum, owing to the comparative rarity of this disease in women amongst the class from which the hospital draws its patients.

The diagnosis of the type of disease from which the patients suffered is that given in the register of patients, the large classes of mania and melancholia being subdivided into recent, chronic, and recurrent cases.

The duration of the menstrual period in these patients was not noted in the register of menstruation kept. This varies in the normal woman from two to eight days, the average being four or five days; and in a recent investigation into menstruation in the insane, Dr. T. C. Mackenzie noted that in a series of fifty patients observed for six months, five days was the average duration of period.

The relationship of the function of menstruation to mental processes is a very interesting one, and has been exhaustively studied by French writers. Icard, in his work, *La Femme Pendant la Période Menstruelle*, states that "the menstrual function can by sympathy, especially in those predisposed, create a mental condition varying from a simple psychalgia, that is to say, a simple moral malaise, a simple troubling of the soul, to actual insanity, to a complete loss of reason, and modifying the acts of a woman from simple weakness to absolute irresponsibility," and gives an alarming list of manias —pyromania, kleptomania, etc.—which may appear in that condition.

By the relatives of a mentally affected patient, abnormal menstruation is one of the most common causes given to account for the patient's state, and they frequently appear to share the old view that menstruation was the elimination of noxious products from the body—the retention of these noxious products in the body accounting to them for the insanity displayed.

Theories as to the nature of the function of menstruation

abound, but when its relation to insanity is studied, Geddes and Thomson's view, advanced now many years ago, that menstruation is an anabolic excess, or a highly specialised means of balancing anabolism and katabolism, seems to be confirmed; for when anabolism is at a low ebb as in melancholia, in which form of mental disease there is a marked diminution of normal secretions, a lowered muscular power, a lengthened reaction time, and a general deficiency of vitality, amenorrhœa or highly irregular menstruation is almost always present. Esquirol and Morel estimated that derangements of menstruation form one-sixth of the physical causes of insanity. That they are present in one-sixth of all cases of mental disease in women is undoubted—in my series of 395 patients between puberty and the menopause, menstrual derangements were present in one third of the cases; in some types of mental disease the incidence is even higher, *e.g.*, in a series of adolescent cases, tabulated by Bevan Lewis, 57 *per cent.* suffered from menstrual derangements. Abnormal menstruation, however, instead of being one of the causes of mental disease is probably one of the most striking physical symptoms of a general toxæmia of, in many cases, lymphogenous origin proceeding from the alimentary tract; distinct evidence as to such toxæmia being obtained by the presence of a leucocytosis, varying in amount with the severity of the disease manifested, by the presence frequently of indol in the urine, or by various agglutinins in the blood.

Taking the regularity or irregularity of this function as a symptom, the previous history in regard to menstruation of patients suffering from mental disease is highly instructive. In those forms of mental disease where physical ill-health is most clearly shown—melancholia, confusional insanity, acute delirious mania, general paralysis of the insane—there is a previous history of abnormal menstruation or of complete amenorrhœa in one half of the cases, *e.g.*, in eighty-three cases of recent melancholia, amenorrhœa varying in duration from two months to two years was present in twenty-three cases and irregularity in sixteen cases. One of the most striking histories in this series is that of a patient, æt. 32, admitted suffering from melancholia. As a child she had menstruated at the age of 11 months regularly for ten months; menstruation then ceased, and began again at the age of ten years, continuing normally

till the age of eighteen. She was a somewhat backward child mentally, but strong and healthy. At the age of eighteen there was marked dysmenorrhœa, and amenorrhœa followed for several years. At the age of twenty-seven patient was admitted to a mental hospital, acutely maniacal. She was treated there for seven months, and made a rather sudden recovery, which coincided with the re-establishment of the catamenia. Menstruation was regular for five years, and patient maintained good mental health. Then she became hypochondriacal, with erotic ideas, and was admitted to this hospital, where she was treated for some months, and eventually discharged recovered. For the first four months, while under treatment, there was amenorrhœa, and patient was depressed and confused. Menstruation was then re-established, the mental improvement corresponding with its return. Her further history I have not been able to trace.

Another case with recurrent attacks of mental disease presented, instead of precocious, much retarded menstruation, the catamenia beginning in her twenty-first year. This was followed next year by an attack of acute mania, and previous to this, there had been a similar attack at the age of eighteen. Patient was admitted here at the age of twenty-five, again maniacal, and was discharged relieved. Menstruation in her case while under treatment here was regular. A third case, a married woman, admitted at the age of thirty-three with melancholia, had only menstruated " once or perhaps twice " in her life.

When amenorrhœa has persisted for years previous to a mental attack, there being no local cause, there is usually a history of physical disease such as anæmia.

Twenty-five such patients were admitted with a hæmoglobin percentage of from twenty to forty, and red blood-corpuscles as low as one million eight hundred thousand in one case. On discharge the hæmoglobin had risen to from seventy to eighty *per cent.* and the red blood-corpuscles to three millions eight hundred thousand to four million, menstruation being regular. Patients admitted with a tendency to phthisis have usually had a long history of irregularity of menstruation.

In mania three-fourths of the cases admitted had a history of previous regularity of this function, and in delusional and moral insanity, dementia, and weak-mindedness, regularity was the rule. In the three cases of general paralysis of the insane in

this series, two had been previously "regular" at the onset of the disease, and one aged forty-five had had amenorrhœa for years.

Among the patients admitted below the age of twenty, all had had amenorrhœa for some months previous to the mental attack. One such patient, an English girl in a French boarding-school, had made many desperate suicidal attempts before admission to this hospital and continued acutely suicidal for months. Amenorrhœa in her case persisted for six months after admission, considerable mental improvement being evident before the catamenia returned.

Of definite ovario-uterine disease, functional or organic, previous to the onset of mental disease, little history is obtained, but patients of this class have almost invariably been treated early for any uterine anomaly. Very few cases of malposition of the uterus were ascertained, and all had been rectified previous to admission. Dysmenorrhœa and scantiness of menstrual flow appear to be more prevalent in melancholia than in any other type of mental disease (see Tables I and II).

When mental disease has definitely manifested itself, it is observed that menstruation varies much according to the type of disease shown. In mania this function is as a rule regular, over two-thirds of the cases in this series being so. Amenorrhœa was present in twenty-three out of one hundred and twenty-eight cases. Cases of chronic and recurrent mania menstruated regularly almost invariably, and amenorrhœa was present in three cases. In one hundred cases of recent melancholia amenorrhœa was present in fifty-two cases, or over fifty *per cent.*; fifty *per cent.* of the chronic cases were regular, and in one quarter of the recurrent cases there was amenorrhœa. In confusional insanity amenorrhœa or marked irregularity of menstruation is often observed.

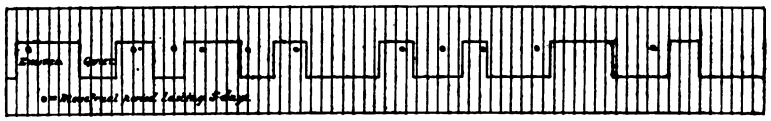
In delusional insanity, two-thirds of the cases menstruated regularly and amenorrhœa was extremely rare. In six cases of moral insanity observed the menstrual function was regular and painless. Cases of primary dementia and weak-mindedness menstruated regularly as a rule, and cases of stupor almost invariably so. Two out of three cases of general paralysis of the insane menstruated regularly at the onset of their disease; one continuing to do so till her death two years after the disease was diagnosed, one becoming amenorrhœic in a year.

The third had been previously amenorrhœic for years and continued so.

These observations amongst another class of patients agree with the result of an investigation into menstruation in the insane, studied in 500 cases by Dr. Sutherland, and published in the *West Riding Asylum Reports*, in which it was found that in melancholia there was generally amenorrhœa, that in dementia patients usually menstruate in a normal, healthy manner, that in general paralysis of the insane, change of life appears early, and that in mania exacerbation of excitement occurs at that time (see Table III).

The increase of mental symptoms during menstruation was noted personally for the years 1905–1907 inclusive, and it was observed that out of forty cases of mania, twenty-five, or five-eighths, showed marked increase.

In the more chronic cases this took the form of increased garrulousness and quarrelsomeness, with sleeplessness, while the more acute cases showed increased eroticism where this was present, with increased degradation of habits and intense and prolonged excitement. In one case a girl, æt. 25, it was noted that the excitement occurred exactly one week after the cessation of the menstrual periods, patient then becoming highly erotic. In the recurrent cases of mania there was less change; one such case, whose attacks of excitement apparently corresponded with the menstrual periods, was carefully analysed, and the attacks of increased excitement, which were very severe (patient being highly destructive, noisy by night and by day, and at times violent), were not found to coincide with the menstrual periods as a rule (see annexed Chart, which is spaced in periods of one week, the commencement of the menstrual period, which lasted for five days in this patient, being indicated by a dot).



In all the cases of stupor there was a marked increase of all the symptoms during menstruation, the patients being

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animate automata for the time being—washed, dressed, fed, even carried about.

In one such case the initial mental attack was attributed to over-exertion during the menstrual period; patient, a girl, æt. 21, having spent the whole day while menstruating at dancing and gymnastic classes, was found by the police in the evening wandering far from home in an absolutely dazed condition and was taken to an infirmary.

In delusional insanity, the delusions occasionally become more prominent during the menstrual period, and it was noted in one case amongst six of moral insanity that the girl became more morally irresponsible and more highly erotic during her menstrual period.

Less change is noted in melancholia, the menstrual period in this state being so often suppressed or highly irregular.

Masturbation was noted for the years 1905–1907 inclusive in 9·6 *per cent.* of the patients, the average age of each patient when admitted being thirty-one. In seventeen cases there was a previous history of this practice before admission. "Masturbation," says Bevan Lewis, "especially lays the ground work for an attack of insanity by the nutritive changes induced in the nervous centres—their exhaustion and the ultimate impoverishment of blood." Ten of the cases previously addicted to this vice were discharged "not improved" and were absolutely degraded, masturbating constantly in the most shameless way.

Eleven cases recovered, two remain, and four were discharged relieved. In eight out of thirty-one cases, there was amenorrhœa, and five menstruated irregularly. Of the thirty-one cases seven were married women, and the practice seemed to be equally common in mania and melancholia.

Irregularity of the menstrual function was the rule in alcoholic cases, but only a small number of these occurred in this series. Of four morphinomaniacs, two menstruated regularly and two irregularly.

Of forty patients who, for periods of from one month to six months or more, enjoyed the benefit of change to the seaside during their residence in hospital, 15 *per cent.* showed change in the direction of increased regularity of menstrual function, and several patients previously irregular in this respect menstruated regularly on their return from Brighton. It was

noted that patients approaching the menopause menstruated more regularly after change to the seaside.

In this series of 395 patients there were eleven puerperal cases, while one patient was admitted in the fourth month of pregnancy and delivered of a healthy child at full time. Of these twelve patients, six suffered from mania and six from melancholia; their average age was twenty-nine; seven were primiparæ, four were having their second confinement, and one her fourth. In eleven cases the first symptoms were observed in from two to five weeks after parturition, though the patients were not admitted to the hospital till from one to seven months thereafter. All had ceased to nurse the child; and except two, in whom the catamenia returned in three and four weeks respectively, all were amenorrhœic. All the puerperal cases were discharged recovered; two were still amenorrhœic, the others menstruated regularly.

The amenorrhœa of puerperal cases is often peculiarly obstinate, but Macleod, in a summary of 814 such cases, collected from English and Scottish asylums, said: "No case can be considered as cured till menstruation is regular."

The one case of insanity during pregnancy (which is remarkably infrequent) was admitted in 1902, æt. 27, in the fourth month of pregnancy, acutely maniacal, and has remained an inmate of the hospital ever since; very deluded, frequently violent, and always addicted to very foul language. The catamenia returned in her case two months after the birth of her child, and have been regular ever since then.

The menopause occurred in nine patients who are still inmates; eight of these suffered from chronic mania, one was a case of delusional insanity. The average age at which it occurred was 48·8 years, and in no case was there any mental improvement visible thereafter. The average duration of their residence in hospital previous to the menopause was five and one-third years.

In two cases over fifty menstruation returned after an absence of several years, and one case showed remarkable mental improvement after its return. The other case began to menstruate again after change to this hospital, having previously been twenty years in another asylum.

Of the cases discharged as "recovered" in this period, 1897–1907, out of 174 cases 150 were menstruating regularly,

twenty-two were irregular, and only two, one of whom was probably approaching the menopause, were amenorrhœic. Of the eighty-four cases discharged "relieved," forty-six menstruated regularly and seven were amenorrhœic (five were over forty years of age); and of the sixty-five cases discharged "not improved," ten menstruated irregularly and sixteen (nine of these over forty) were amenorrhœic.

In two classes of cases especially there may be considerable mental improvement before the catamenia are re-established, adolescent and puerperal cases. In both these classes it is of the greatest importance that the menses should be thoroughly re-established before the patients are considered as cured; and treatment, both general and local, should be perseveringly directed to this end. Local treatment should be avoided, if possible, in young girls, but may ultimately be required, and often then has a very speedy effect. The return of the menses, or restored regularity of menstrual function, is almost invariably of good omen in mental disease, except in such cases where this return is not accompanied, or followed in some months' time, by distinct mental improvement. Such cases as show restored physical health in this and other respects without a corresponding mental improvement (not necessarily immediate) tend to remain amongst the "chronic" class of our asylums.

TABLE I.—*Previous History.*

Disease.	Cases.	Unknown.	Menstruated regularly.	Menstruated irregularly.	Amenorrhœic.
Mania, recent	123	19	78	21	5 (2 months to 2 years)
,, chronic	8	—	6	1	1 (2 months)
,, recurrent	37	—	23	12	2 (2 months)
Melancholia, recent	100	17	44	16	23 (2 months to 2 years)
,, chronic	6	—	4	2	—
,, recurrent	20	1	7	9	3 (2 months)
Delusional systematised	32	5	16	10	1
Insanity, non-systematised	31	1	25	3	2
Confusional insanity	2	—	2	—	—
Moral insanity	6	—	4	2	—
Acute delirious mania	1	preceded by pleurisy / followed by pneumonia	—	—	1
Stupor	7	—	7	—	—

TABLE I (*continued*).

Disease.	Cases.	Unknown.	Menstruated regularly.	irregularly.	Amenorrhœic.	
Dementia, primary	5	2	3	—	—	
„ secondary	2	—	1	—	1	(for years)
Weak-mindedness	12	1	9	2	—	
General paralysis of the insane	3	2	—	—	1	(for years)
	395					

TABLE II.—*History of Previous Uterine Disease (functional or organic).*

Mental disease.	Oligor-rhœa.	Dysmen-orrhœa.	Menor-rhagia.	Metror-rhagia.	Mal-position.
Mania	5	1	4	11	1
Melancholia	13	12	3	11	2
Stupor	1	1	1	—	—
Delusional insanity	8	2	—	7	1
Dementia	—	—	—	1	—
General paralysis of the insane	—	—	—	1	—

TABLE III.—*Relationship of Menstruation to type of Mental Disease.*

Mental disease.	Cases.	Menstruated regularly.	irregularly.	Amenorrhœic.
Mania, recent	123	70	30	23
„ chronic	8	6	2	—
„ recurrent	37	28	8	1
Melancholia, recent	100	34	14	52
„ chronic	6	3	2	1
„ recurrent	20	7	8	5 [4–6 months
Delusional insanity, Systematised	32	18	11	3
Non-systematised	31	24	2	5
Confusional insanity	2	—	1	1
Moral insanity	6	6	—	—
Acute delirious mania	1	—	—	1
Stupor	7	6	1	—
Dementia, primary	5	5	—	—
Weak-mindedness	12	6	4	2
General paralysis of the insane	3	2	—	1
	395	(1 amenorrhœic in 2 years)		

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TABLE IV.—*Discharges.*

Discharged.	Cases.	Menstruated regularly.	Menstruated irregularly.	Amenorrhœic.
Recovered	174	150	22	2 (1 menopause)
Relieved	84	46	31	7 (5 over 40)
Not improved	65	35	10	16 (9 over 40)

A Research into the Cranial Measurements of the Insane, Comparing them with those of the Sane.

By DAVID THOMSON, M.B., Ch.B.Edin., Formerly Assistant Medical Officer, Horton Asylum, Epsom.

WHILE acting as Assistant Medical Officer in the London County Asylum at Horton, Epsom (1907–1908), I made an investigation into the head measurements of the various classes of male lunatics, contrasting these with their bodily height and weight.

I took similarly the cranial and bodily measurements of the attendants at the asylum so that I might have a comparison between the sane and the insane to see if any marked difference existed between the two.

The number of patients I examined was 408 and the number of attendants was 80.

With regard to the head I took three measurements:

(1) *The circumference* at the level of the glabella and occiput.

(2) *Antero-posterior measurement* from the occipital protuberance to the glabella.

(3) *Lateral measurement* from ear to ear (measuring from the upper junction of the external ear with the head).

I made every measurement myself with the same tape-line to make the results as accurate as possible.

The following table gives the results. The measurements given are the average of all the measurements taken in each class.

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