

**ART. III. *Cases and Observations regarding Puerperal Fever, as it prevailed in the Pennsylvania Hospital in February and March, 1833.*** By HUGH L. HODGE, M. D. one of the Physicians of that Charity.

**F**EW circumstances more frequently baffle the scrutiny of the scientific physician than the causes of epidemic diseases. They seem involved in a mystery, to us impenetrable, but which future generations, assisted by the lights of new, or improved sciences, may possibly elucidate.

The fact, that puerperal peritonitis should ever prevail in the Penn-

sylvania Hospital, will appear inexplicable to those acquainted with the fine wards allotted to the lying-in women, and with the great neatness, comfort, and excellency of their accommodations in an institution, noted in our country for the superiority of its provisions for the sick poor. For the information of those not thus informed, it may be observed that the buildings "exhibit a south front, extending, east and west, two hundred and eighty-one feet. They consist of a centre building, united, by long wards of three stories in height, to two wings extending north and south." The centre building measures sixty-four feet in front by sixty-one in depth, and, with the balustrade surrounding its cupola, seventy-two feet in height. The second story is occupied by the lying-in wards, and two chambers for medical assistants with spacious staircases and passages. These wards extend the whole front of the centre building, and consist of two large rooms on the east and west, measuring twenty-four feet by twenty-three feet and fifteen feet in height, separated by a smaller room for the nurse, sixteen feet by eighteen feet. Ventilation is easily and fully effected, not only from their exposed situation, and the arrangement of the windows, but also from openings into the chimnies near the ceiling. The hospital occupies the interior of a square, "surrounded by majestic forest trees," and containing four and a quarter acres of ground. On the east, a square of similar dimensions, and on the south and west, large lots, containing in all about ten acres, are preserved unoccupied, so that a free circulation of air is secured; while every attention has been paid that fresh air be daily and frequently admitted to the lying-in wards, with suitable precautions.

Notwithstanding, however, these favourable circumstances, no spot in this city has been so frequently visited with peritonitis puerperalis as the Pennsylvania Hospital; and as already intimated, the efficient cause has escaped the attention of the able physicians and managers of this charity. It can merely be observed, that the atmosphere of the house induces a predisposition to peritoneal inflammation after parturition, at particular but uncertain periods, and that this state of the atmosphere also predisposes other patients, especially surgical ones, to erysipelas, as the two diseases have usually been found co-existent in the hospital. This idea that erysipelas and puerperal peritonitis are dependent when endemic in this institution upon similar causes, is confirmed by some attending circumstances, to which we may advert hereafter.

The following table, prepared by Mr. Malin, the librarian, exhibits the number of patients admitted into the lying-in department from its establishment in 1803, to the 31st of March, 1833, of those

that have been removed before delivery, and of those who were confined, with the event whether death or recovery:—

TABLE I.

*A Statement of Cases admitted into the Lying-in Department from its Establishment in 1803, to April 28th, 1833.*

Official Year ending April 28th.	Women Admitted.	Removed.	Delivered.	Recoveries.	Deaths.	Official Year ending April 28th.	Women Admitted.	Removed.	Delivered.	Recoveries.	Deaths.
1803	2	1	1	1		Brought over	124	6	117	106	7
1804	3		1	1		1819	26	1	24	24	
1805	5		7	7		1820	50	3	46	46	
1806	3		2	2		1821	48	3	46	42	4
1807	5		6	5	1	1822	33		33	32	1
1808	5		4	4		1823	48	4	43	38	5
1809	5		5	5		1824	43	6	35	33	2
1810	6		6	5	1	1825	41	3	43	43	
1811	5	1	5	5		1826	30	4	27	27	
1812	8		7	7		1827	38		36	35	1
1813	4		4	4		1828	48	5	42	42	
1814	7		6	6		1829	68	5	62	60	2
1815	17		17	17		1830	68	5	63	60	3
1816	14	2	13	10	3	1831	46	5	44	36	8
1817	17	1	12	10	2	1832	36	4	28	26	2*
1818	18	1	17	17		1833	48	8	48	43	5
Carried over	124	6	117	106	7	Total - -	795	62	733	693	40

The whole number of deaths after 733 labours amounts to 40; nearly 5.6 per cent. but the immediate causes of death in individual cases have not been recorded. Some are said to have died of hæmorrhage, or of phthisis pulmonalis, and one of mania, but most of the deaths have resulted from puerperal peritonitis. From these documents, and from the accounts given by physicians connected with the institution, it appears that the disease has prevailed at four distinct periods, viz. in 1816-17; in 1821-22-23-24; in 1829-30-31, and again in February and March, 1833, but the number of cases has not been preserved; unfortunately, if reports can be depended on, they have

\* The two deaths mentioned as having occurred in the official year 1832, were at the commencement of this year, namely, in May, 1831; for the wards were closed June 1st, 1831, and no death occurred from the re-opening of the wards in September, 1831, to the 17th February, 1833—a period of more than seventeen months.

but little exceeded the number of deaths.\* It should also be observed, that although the disease prevailed during the years mentioned, yet the cases were frequently distinct—days and weeks elapsing between the illness and death of one individual before another was affected—while many deliveries occurred without any peculiar or threatening circumstances. The females removed to other and distant wards were apparently as liable to the complaint as those who remained in their original situation. This was remarked during the last endemic, as well as on preceding ones. These facts bear upon the subject of contagion and infection.

In consequence of the number and fatality of the cases occurring in the fall of 1830, and the subsequent winter and spring, the managers, by the advice of the physicians, determined to close the wards for a time, which was done in June, 1831. They were reopened in September following.

Having been elected in November, 1832, a physician to this department, as successor to the venerable Professor JAMES, who for twenty-five years had ably served the institution, but whose increasing infirmities rendered it necessary to pay those attentions to his own comfort, which had been sedulously bestowed on the welfare of others, I received from my colleague, Dr. CHARLES LUKENS, the charge of the wards on the 1st of January, 1833, then containing six patients, of whom two were already confined, and four in expectation. All were very well; no complaints were heard beyond the usual pains of labour, and the little pain and irritation preceding or accompanying the flow of milk. The wards were daily ventilated, and every attention was paid as usual to the comfort and health of the inmates.

Under these circumstances, Margaret Reilly, a young woman of good constitution, who had been seven weeks in the ward, and apparently very well, was delivered after an easy labour of her first child, on Tuesday, the 12th of February. On Wednesday, the 13th inst. as she had some febrile excitement, and a yellow, foul tongue, a dose of magnesia was prescribed—the patient complaining of no pain, and no suspicion of puerperal fever being entertained. I did not see her again before Saturday, the 16th inst.† and was surprised to find her system prostrated under a severe and acute peritonitis. On inquiry I found that the magnesia had operated freely, but with considerable

\* Vide Table II.

† The regular days for visiting the hospital are Wednesdays and Saturdays. All the ordinary duties of the house are left in charge of the house physicians—graduates in medicine.

pain on Wednesday night and Thursday morning, but apparently with complete relief to the febrile and other symptoms. On Friday noon she had severe pain in the abdomen with diarrhoea and fever, the house physician, Dr. MIFFLIN WISTAR, (to whose able and indefatigable attentions by day and night during this trying epidemic, as well as for the report of cases appended to this paper, I feel greatly indebted,) bled her ad deliquium, and soon after had sixty leeches applied to the abdomen, so that the symptoms disappeared. During the night, however, they returned, the inflammation not having been completely subdued, and I found her on Saturday with excessive tympanitis, great pain in the abdomen, propagated by pressure on the epigastric region to the knees and also to the wrists, where pain was severe. The surface was cold and pallid, features contracted, eye sunk, pulse excessively frequent, and very weak. Stomach irritable, and her mental powers were beginning to fail. No expectation was entertained that recovery was possible—from the extent of the inflammation and the prostration of the system. The treatment\* proved but palliative, and the patient died the succeeding day—the sixth after delivery, and the third after the symptoms of inflammation were first decidedly manifested.

On post mortem examination the uterus was found perfectly healthy; the sanguineo-purulent matter on its inner surface could easily be removed, and no other evidence of disease was there manifested. The ovaries were inflamed; the right merely on the surface, but the left was much enlarged, exceedingly soft, and of a dark colour. The whole peritoneum bore marks of intense inflammation, with free depositions of serum, pus and lymph. On the posterior surface of the uterus lymphatic depositions were made under the peritoneum in the cellular membrane, but exterior to the uterine tissue.

On the death of this individual the ward was vacated, the bed destroyed, the room cleansed, whitewashed, purified by solutions of chloride of lime and soda, the fires removed, and the windows kept open for several days and nights in succession. The females to be confined were divided—part remained in the east room, while four were removed to a large room in the northern extremity of the western wing of the hospital. In this room the next delivery occurred.

CASE II. Ellen Leby. This patient was of a sanguine temperament, florid complexion, and good muscular developments. Three weeks before her confinement she complained of irregular but severe pains, apparently announcing labour, generally in the back, often in

\* See Case I. appended to this report.

the sides and lower limbs; her pulse was full and strong, bowels costive. She was several times bled and purged, and daily for a week or more used a warm bath. These measures, in conjunction with a farinaceous diet, had the desired effect, so that for a week before her confinement she had no pain or other symptom of irritation. Her general health, strength and spirits appeared to be very good.

Delivery ensued without difficulty early on Tuesday, the 26th of February, nine days after the death of Riley, and in a different ward. The next day felt and appeared very well; pulse being rather frequent and tongue whitish. On Thursday morning, the 28th inst. about 4 A. M. had a slight chill, and some little pain, like after-pains—fever and restlessness followed; V. S. ad deliquium relieved every symptom of general and local irritation at the time. When I saw her about 9 o'clock, A. M. said she felt perfectly well, had not the least tenderness on pressure, or even by grasping the uterus; no tympanitis; skin moist, but her pulse was very soft, frequent and weak; complexion mottled, particularly in the face, and respiration hurried like a person agitated, or exhausted by fatigue; tongue whitish, and lochiæ somewhat offensive; no disposition to secrete milk. There being no evidence of local inflammation, and the pulse being weak and frequent, the neutral mixture, with morphia, rest, absolute diet, and fomentations to the mammæ were prescribed; also injections of warm barley water into vagina. At every visit, my patient would say she was not sick but merely weak; but the peculiarity of the complexion, hurried respiration, frequent pulse, and absence of milk, too surely indicated internal disease, notwithstanding the freedom from pain and tenderness, and the natural condition of the abdomen. Bleeding, and even leeches, were forbidden by the entire absence of pain, of heat and dryness of surface, and by the softness and weakness, ("gaseous condition,") of the pulse. The mercurial practice was therefore adopted; the bowels being kept open by enemata, and once by the exhibition of senna infusion—but this last proved irritating and injurious. No decided benefit resulted from any measure adopted; the frequency and weakness of the pulse increased, as also the sense of exhaustion; bilious vomiting ensued; prostration followed, and death occurred on Monday, March 4th, the seventh after delivery, and the fifth after the occurrence of the chill. During the whole period of her illness, with the exception of the slight colicky pains on the 28th, she experienced no pain, and had no tympanitis. Even on Sunday, the 3d inst. my colleague, Dr. Lukens, who had seen much of this complaint during the endemic of 1830-1, regarded the size and feel of the abdomen as perfectly natural—the uterus could be embraced

by the hand, and moved from side to side without producing uneasy sensations. Nevertheless, post mortem, every evidence of inflammation coëxtensive with the peritoneal surface, was exhibited even to the formation of new membranes. The uterus was perfectly healthy, as also its veins, many of which were laid open.

Could this female have had peritonitis before her confinement, relieved by the antiphlogistic remedies adopted, but again fatally aggravated by the parturient state?

During the progress of this case, another patient was delivered, March 1st, in the same room, who afterwards suffered from severe bilious symptoms, some fever, and much subsequent debility, but recovered without any characteristic symptoms of peritonitis.

On the death of E. Lehy, the former ward, in the centre building, was again occupied, as change of place was ineffectual, and suitable measures for purification had been employed for twelve days.

CASE III. M. Viney, an intemperate female, who, however, had been exceedingly benefited by a temporary residence in the building prior to her confinement, was delivered March 1st of her first child. She manifested on the second day many of the peculiar symptoms of peritonitis, particularly pain, frequent pulse, and foul tongue. Pulse however had no tension. She readily recovered under the influence of calomel, leeches, low diet, and moderate revulsives. Vide Case III. Another patient was confined in this room who did well.

CASE IV. C. Borstall, a healthy woman, was delivered in the same ward, of her first child, on Wednesday, March 6th. She continued remarkably well, free from pain and fever, with a good appetite, excellent spirits, and an abundant flow of milk during the remainder of the week. Before daylight, however, on Sunday, March 10th, she suffered from symptoms indicative of intestinal irritation,\* pulse not being over 100, milk and lochiæ continuing. Was relieved by 100 leeches to the abdomen, anodyne enemata, &c. As precautionary measures, Dover's powders with calomel were exhibited every two hours. In the evening, although free from pain and tenderness, and having no purging, her tongue was found dry in the centre; pulse and other indications favourable; oil was given. Towards midnight, having some fever, was freely bled, even to faintness; oil operated; felt better; her pulse still rather frequent, and tongue sometimes dry in the centre.

Monday the 11th, seemed much better; but on the 12th and 13th, although there was no pain on pressure, and no swelling, yet had oc-

\* Vide Case IV. in Hospital Reports.

casional griping and sometimes a little mucous purging; pulse being rather more frequent. Fever appearing, was again bled. Next day, Thursday the 14th, pulse 120; tongue furred, dry line in its centre, and milk and lochiæ diminished. Although there was an entire absence of pain even on pressure, and of swelling, yet I had little doubt, that we had again peritonitis to contend with—perhaps complicated with colitis, but the pulse had become worse under evacuations, more frequent and weak; skin moist, clammy, and disposed even to be cold; mercurials were prescribed, but as the respiration was becoming short, and the exhaustion great, had to give wine-whey in the evening.

Friday, the 14th.—Symptoms were very bad; great prostration; hurried respiration, &c. but still no pain in abdomen; neither did she experience any during the whole course of her disease, but would frequently say, when pressure was made, “If there be no pain, you will produce it by your punching.” System reacting under stimuli, the mercurial plan was now more vigorously pursued.

On the 17th the intestinal excretions indicated the influence of mercury, and the gums and tongue were slightly inflamed with some ptyalism but no mercurial fœtor. As no very decided influence had been exerted by the mercury, it was continued a day longer; the patient became weaker, mind wandering, and pulse more frequent and weak, still no mercurial fœtor; gums, tongue, &c. became ulcerated as in aphthous affections, with little swelling or ptyalism, and no tumefaction of the cheeks or glands. She now complained, Monday the 18th, of soreness and great pain in forearms, the muscles of which were swollen and even rigid. Mouth became more ulcerated; the prostration increased, so that death ensued on the 20th inst. fourteen days after delivery, and the tenth of her illness—the most protracted case which occurred.

Although this female had never suffered from abdominal tenderness, her pain being always spasmodic, not aggravated or excited by pressure, and although there had been no tympanitis, and but slight fever, and the symptoms indicated irritation of the mucous membrane, rather than of the peritoneum, nevertheless, *post mortem*, all the abdominal viscera were found in a healthy condition; natural fœces existed in the large intestines, and the biliary and other fluids appeared healthy, while the peritoneum bore marks of extensive inflammation, even to the formation of new membranes and of large quantities of purulent matter in the cavity of the abdomen. The uterus and its veins were free from marks of disease.

CASE V. During the progress of the preceding case, a rapid and



melancholy instance occurred in the same ward. Harriet Pitney, æt. 33 years, an English woman, of good but not robust constitution, was confined with her second child early Monday, March 11th. That day, no indications of disease, nor on Tuesday, her milk appearing, apparently in sufficient quantity for her infant. On Wednesday was informed she was doing well, but on examination found her skin more pallid than usual; lips bluish, and face mottled; tongue yellowish at root; pulse 120, soft, rather full, and compressible; respiration frequent; surface of body natural as to temperature and moisture; some milk in her bosoms, and lochiæ of a good colour and quantity; there was no tympanitis, and patient said she was doing well, not complaining of any pain; but pressure over hypogastric and iliac regions excited pain. One hundred leeches were applied to the abdomen, the pulse, &c. forbidding V. S.; and ol. ricini was administered, as her bowels had not been moved since delivery. This was at noon. The leeches were followed by a slight chill, faintness, nausea and vomiting, but the soreness on pressure was relieved. Dover's powder and calomel were given; diet absolute.

Thursday, the 14th, had a comfortable night, but symptoms worse; pulse weaker and more rapid; respiration more hurried; the blueness of lips more decided; milk and lochiæ nearly gone, and the pain on pressure returned; turning in bed now excited pain; still little swelling of abdomen. Calomel was freely given, and one hundred leeches again ordered with revulsives to the extremities, &c. These again afforded partial relief to the local affection, but general symptoms were aggravated. Bowels opened by an injection—stools natural. Powers of system continued gradually to sink, and the local irritation, as indicated by pain on pressure, and the occurrence of slight tympanitis, with restlessness, &c. rapidly increased in extent and severity. On the succeeding day, stimuli could no longer be withheld, and seemed for a time to be useful, but prostration and death followed early on the 16th, the sixth day after delivery, and the fourth after the first indications of disease were detected. Post mortem, all the consequences of decided peritonitis were detected. See details, Case V.

Another female was delivered the same night with Mrs. P. and for three days was in the next bed to her. She suffered from some bilious symptoms, but had no inflammatory affection, and did well.

CASE VI. The next patient was Mary A. Munhollan, a young and delicate female, who was admitted into the house on the 5th of March, suffering from bronchitis and colitis. For some weeks previously, she had dysenteric stools, occasionally with blood, and for a

few days a troublesome cough from exposure and neglect. There was no fever on admission, and the symptoms not very severe. The irritation of the bowels was apparently relieved by demulcents, anodynes, chalk, &c. and her cough was better under the same course of treatment. Labour ensued Wednesday, March 13th, when she was not more than seven months advanced. It was a case of compound pregnancy—twins being born, but so feeble that they survived but a few hours. The mother complained of weakness; skin very pallid; but with the exception of after-pains, which were severe, she appeared well on the 13th and 14th. Towards evening of this last day, Thursday, her skin became hot and dry, and tongue furred, but no pain on pressure, and lochiæ continued. Mammæ, however, did not swell. Calomel and oil given as a cathartic.

Early in the morning some tenderness detected in the uterine region; pulse had become 120, but soft, rather full and weak; no milk; lochiæ diminished; respiration rather short; bowels not opened. Gave Epsom salt, and twenty foreign leeches, (equal to one hundred American,) were applied over the iliac regions. No relief, but restlessness increased. Warm fomentations, spirit of turpentine to hypogastric region; calomel in small and repeated doses, (gr. ij. q. s. h.) Bowels were opened at noon, with much temporary relief as regarded the sensations of patient and the restlessness; her cough now returned, and demanded anodynes, while her pulse became weaker and more frequent.

*Saturday, the 16th.*—Pulse now quite feeble, and more frequent; skin pallid; lips bluish; no febrile heat; soreness and pain on pressure rather greater, and was felt in the iliac regions—not in the upper portions of abdomen; mammæ flaccid; lochiæ nearly gone; lies most comfortably on her sides. In this condition, ventured on account of the local irritation to reapply the leeches, fifteen in number, to the abdomen, but with no apparent advantage. For reasons hereafter to be detailed, it was now determined to apply ice to the abdomen, and warmth to the extremities; and internally, to continue the calomel. In the evening, she expressed gratification as to the influence of cold; it rendered her far more comfortable than “*the hot things*,” but complains of the purging as distressing in every way. Combined morphia with the calomel.

*Sunday, the 17th.*—Still some purging, but symptoms not aggravated, indeed better; pulse now 128; less tenderness and soreness; ice grateful, although the skin of the abdomen feels as cold as the ice on its surface. Continued the mercurials and anodynes, and directed nutritious but simple diet, with wine to support her vital powers.

In the evening, purging continuing, mercurial frictions were substituted for the calomel. During the night bilious vomiting came on, which, with the purging, aggravated the exhaustion, so that on the 18th inst. (Monday,) symptoms of sinking became very decided; the cold was removed, stimuli were given, but generally rejected, and death ensued by 4 P. M., the sixth day after delivery, and the fourth day after the occurrence of febrile symptoms.

*Post mortem.*—The evidences of inflammation were much less extensive than in any of the preceding cases; red dots could be observed on the middle and lower portions of the peritoneum, but the lymphatic effusions were found only in the iliac and hypogastric regions. The heart was in a state of hypertrophy, but not enlarged; the walls, however, of the left ventricle were nearly double their natural thickness—its cavity being of course greatly diminished.

CASE VII. Sarah M'Guigan was delivered on the same day, Wednesday, as the preceding female. On the 14th, appeared to be doing very well, but her tongue was yellowish and furred. On the evening of the 15th, had some pain in region of the uterus; tongue continued coated; no fever; pulse 90; milk did not appear in her breast. An active mercurial cathartic, (of calomel and oil,) was given.

Next day, had two bilious stools, but symptoms much the same, except that the pain was diminished, and the pulse was more frequent, being 120; skin moist; some milk in breasts. Gave calomel, gr. x. and opii, gr. ss. This, with the assistance of an enema, caused free evacuations from the bowels. On the 17th, milk and lochiæ increased, but tongue is still furred, and pulse 120. Repeated cal. and op.; this was followed by an enema with advantage.

This patient being free from fever and pain, with a natural, moist skin, healthy expression of countenance, and moderate secretion of milk, nevertheless maintained for several days the fur on the tongue, with little appetite, and the frequent, fall, and soft pulse. After the mercurial medicines had been given as above detailed, she was trusted to rest and low diet. She recovered.

The last cases having occurred in rapid succession, it was determined that all the patients yet to be delivered, should be removed to private lodgings. Several of these have been confined without any indications of peritonitis. One patient, however, on the eve of departure was taken in labour.

CASE VIII. Margaret Sullivan was delivered at 11 A. M. Saturday, March 16th. She continued comfortable until early Monday, the

18th—milk appearing in her breast on the 17th. On Monday morning was feverish, and complained of some pain in back. Was bled to  $\frac{3}{4}$ xv. and took sp. nit. dulc. The expectation was entertained of its being merely the milk-fever; but at 9 P. M. there was tenderness and even pain on pressure over the uterus; pulse 120, with some tension: V. S.  $\frac{3}{4}$ xxiv. induced faintness; Dover's powder and calomel were given; fomentations, &c.

*Tuesday, 19th.*—Slept well; milk abundant; lochiæ not quite so copious as before; has still slight tenderness on pressure; pulse 112; had one hundred leeches to groins and hypogastric; Dover's powder and calomel. *Noon.* Pulse 120; tenderness on pressure diminished.

For subsequent history see details, Case VIII. by which it will appear that the milk and lochiæ diminished exceedingly; patient on the 20th became very pallid, and pulse so weak and frequent, 138, that quinine and nourishment were required. Bowels became disordered, to the exhaustion and distress of the patient, the stools were bilious and watery, and the pulse for several days remaining very frequent. Eventually the symptoms of intestinal irritation disappeared, under the use of anodynes and revulsives with chalk, and finally, the rhatany, which last appeared to be very useful in checking the exhausting evacuations, and supporting the general strength. The mammary secretion now returned, and the pulse very gradually became slower; the patient eventually recovered, but was for many days very weak, and her stomach and bowels exceedingly irritable.

I have lately seen her looking pallid, and complaining of occasional uneasy sensations and swelling about the abdomen, apparently from indigestion, but with a free supply of nourishment for her healthy infant.

The wards of the lying-in department were now closed for some weeks.

The following table presents a summary view of the cases detailed. It appears that four of the eight patients were primiparous, and that the average interval between delivery and death in the fatal cases, was 7.2 days. In most of the patients, the disease probably commenced on delivery, but in Cases IV. and VIII. the period of attack was well marked on the day noted. There occurred eight cases, of which five were fatal.

In the endemic of 1830 and 1831, from a statement furnished me by Mr. Malin, it appears that there were thirteen deaths; the average interval between delivery and death being precisely seven days; the shortest interval was three days—the longest ten days.

TABLE II.

Case.	Name.	Age.	Number of labours.	Day of delivery.	Day of apparent attack.	Day of death.	Recovery.	Interval between day of delivery and death.
1	Margaret Riley	32	1	Feb. 12	Feb. 15	Feb. 17		5 days
2	Ellen Lehy - -	26	3	26	Mar. 1	Mar. 4		7 days
3	Martha Viney -	32	2	Mar. 1	2		Recov'd	
4	Catharine Borstall	30	1	6	10	20		14 days
5	Harriet Pitney -	33	2	11	13	16		5 days
6	Mary A. Munhollan	21	2	13	15	18		5 days
7	Sarah M'Guigan	21	1	13	15		Recov'd	
8	Margaret Sullivan	27	1	16	18		Recov'd	

The great fatality of puerperal peritonitis, whether appearing sporadically or epidemically, in private or public practice, is well known. When endemic in hospitals few patients recover—not unfrequently almost every individual perishes. This mortality no doubt partially depends on the predisposing causes, of which, as already acknowledged, we are very ignorant, but which are evidently more influential in hospitals, and other similar situations, and modify, in a most important manner, the symptoms and progress of the disease, as I shall attempt to demonstrate, rendering similar modification in the treatment essentially necessary. The very nature of puerperal fever, being an acute inflammation of a most irritable and extensive serous tissue, spreading over its whole surface with great rapidity, is alone sufficient to account for the severity of the disease, especially when it is remembered that it occurs at a moment when the female system is always preternaturally irritable.

On ordinary occasions, the well known local and general symptoms of inflammation are manifested, so that no doubt remains, as well of the nature of the affection, as of the proper remedies, but when endemic in hospitals, its apparent character is changed—diagnosis is difficult, and the anxious physician, alive to all the responsibilities of his situation, finds the most efficient antiphlogistic remedies unavailing, and even positively injurious in a disease essentially inflammatory. The following circumstances may be mentioned as more or less peculiar in the cases under consideration.

1. The disease was not ushered in by any decided chill, often no cold sensations were experienced; and the subsequent phenomena render it probable that inflammation generally commenced on delivery, although no symptoms were detected before the second or third day.

2. The almost entire absence of fever, that is, of a hot, dry skin, dry tongue, and other indications of the stage of excitement; the surface being usually pallid, with a livid tinge of the lips, cheeks, tongue, nails—also moist, and natural as to temperature. There were some exceptions to this remark, but the observation is correct as regards the most acute cases of the complaint—Case V. Pitney's; Case VI. Munhollan's.

3. The pulse was never corded nor tense. The last patient, Case VIII. Sullivan, had slight tension of the pulse, but not to such a degree as on ordinary occasions to render the lancet essential. In all cases the pulse was at first rather large, soft, and compressible, not calling for, and even forbidding depletion; it was invariably frequent, at once rising to 120, and often could not be numbered towards the termination of the disease.

4. The respiration was much hurried; in one patient, Case II. this was remarkably the case; like that of a person agitated, or exhausted by severe exercise. Connected with this, there were generally, almost universally, a disposition to blueness of the lips, and other evidences of imperfect hematosis.

5. Perhaps, however, the greatest peculiarity of this epidemic was the slight degree of pain experienced. Riley, Case I. suffered the most; yet on the first day she made no complaint of pain; on the second, suffered only when bowels were moved; on the third, had severe pain, but it was completely relieved by V. S. and leeches; on the fourth, it returned and extended to the joints of the extremities, and was greatly aggravated by pressure. In no other patient was pain a prominent symptom; in some it was only produced by pressure, or by motion; and in two patients, Lehy and Borstall, no pain whatever was experienced, nor any tenderness on pressure during the whole course of an acute peritonitis!!

The tympanic condition of the intestines was much less than usual, particularly in those cases in which there was little or no pain.

6. The almost universal existence of a furred and yellow, ("bilious,") tongue, indicative of visceral disorder, should perhaps be mentioned as a peculiarity. It was found in all the severe cases, and in nearly all who were delivered during the prevalence of the complaint. This derangement of the digestive functions, conjoined with a very irritable condition of the tissues, seemed to constitute that state of the system or organs which predisposes to peritonitis puerperalis, and which, under other exciting causes, as wounds, fractures, &c. gives rise to erysipelas. If so, the frequent conjoint

prevalence of puerperal fever and erysipelas is, in some degree, explained—their predisposing causes being the same.

7. The secretion of bile after the first few days became excessive, and appeared to be the exciting cause of the diarrhœa and vomiting, which were injurious and exhausting. Whether this increased secretion of bile depended on the disease, or on the measures adopted, particularly the exhibition of mercury, or on both, is a question not easily answered.

These peculiarities will explain the difficulty of diagnosis—the inefficiency of the established modes of treatment, and the consequent fatality of the disease.

1. *Difficulty of diagnosis.*—It may be safely asserted, that without the assistance of morbid anatomy, the nature of this disease would have been altogether inscrutable. What practitioner, however experienced in clinical observations, but ignorant of what the scalpel has revealed post mortem of the consequences of this affection, would have suspected a most rapid, acute, and extensive inflammation, involving the whole surface of the irritable and sensible serous membrane of the abdomen, when his patient complained merely of weakness; had no pain, nor even tenderness on pressing and handling the abdomen; no tympanitis; no purging; no dryness nor heat of surface; no tension nor quickness of pulse? The fact that authors have alluded to such cases, would afford but little assistance to the practitioner. In the case of Lehy, for example, the symptoms of disease were imperfect hematosis; rapid respiration, and great frequency of pulse, with diminution of the lochiæ; want of mammary secretion and great sense of debility; symptoms sufficiently decided to indicate dangerous internal disease, but whether of serous or mucous tissues in the abdomen or the thorax, are points which could not be positively determined. The last-mentioned symptoms however, judging from what occurred at the hospital, should, under similar circumstances, be considered as proof of the existence of acute peritonitis, for death unfortunately afforded the opportunity of ocular demonstration.

2. The inefficiency of the established modes of treatment was too certainly exhibited at this period; confirming not only the experience of my predecessors in the hospital, but that also of accoucheurs to lying-in establishments generally. It may be useful to state what I believe to be the result of our experience in the different remedies employed, and then to deduce the practice which would promise most under similar modifications of peritonitis.

1. *Blood-letting.*—General bleeding was tolerated in some of the cases, particularly in the last one, Sullivan's, where there was some

tension of the pulse. It usually moderated, for a few hours, the local symptoms; but as a general observation, it was of no permanent benefit to the local affection, and was often decidedly injurious, by exhausting more rapidly the vital powers of the patient, as indicated by the increased frequency and weakness of the pulse, pallor of the surface, and sensation of weakness.

The same remark was often applicable to leeches, as always moderating, and in one instance, Viney's, apparently subduing the local symptoms, but diminishing the general strength, so that the local affection appeared to spread with much more rapidity. In one case, Munhollan's, no relief was afforded, and the patient complained of being more uncomfortable. On the whole, leeches proved useful, but the evacuation of blood in whatever way effected was injurious when the pulse was rendered softer and more frequent. "As salutary as these evacuations may prove in such cases, (of sporadic peritonitis,) exactly in the same ratio do I consider them injurious in epidemic peritonitis, especially in hospitals—peritonitis from internal causes. In this latter case, so far from procuring relief, they are ordinarily followed by great frequency and smallness in the pulse, a more evident alteration of the features and increased swelling of the abdomen."\* Exceptions occurred to this rule of Baudelocque's, but none which would not confirm the observation that sanguineous evacuations are injurious when the pulse does not sanction their employment.

2. *Emetics* were employed occasionally to relieve the stomach of any irritating ingesta, food, bile, &c. but were not relied upon as the efficient means in the management of the disease.

3. *Purging*, as a plan of treatment, failed entirely: in all cases, whether excited spontaneously, or by medicine, it was very distressing and exhausting to the patient, with no apparent amelioration of the symptoms. At the commencement, however, laxatives or enemas to empty the bowels were grateful and beneficial.

4. *Diaphoretics* were of no utility—indeed the patient often perspired with even a natural temperature of the skin, and yet experienced no relief.

5. *Mercury*.—Much was anticipated from the use of this medicine, so valuable in inflammatory affections, especially of serous tissues. Hence, next to blood-letting, our main dependence was placed on its free exhibition; it was resorted to in every case, but on review, I cannot affirm that any good was effected, and perhaps it was even

\* Baudelocque, Jr. on Puerperal Peritonitis, p. 346, of Amer. Edition.



positively injurious. Salivation could not be induced: even in the comparatively protracted case of Borstall, where mercury was early, freely, and perseveringly employed, no genuine ptyalism was excited. An aphthous ulceration of the tongue, lips, &c. occurred without swelling of the face, ulceration of the gums, or any inflammation of the salivary glands, and without any mercurial fœtor. The patient appeared to sink more rapidly from this extensive irritation, and from the severely painful affection of the muscles of the forearm, which may possibly have been dependent on the mercurial influence. In Munhollan's case, which was fatal, and in Sullivan's, which was one of recovery, the great distress was from purging of bilious and serous fluids, apparently from the use of calomel; indeed, in all cases, it was disposed to act on the secretions of the abdominal viscera, rather than on the mouth, and had no influence in moderating the disease. Was the increased bilious evacuations in the latter stages of the complaint owing to the inflammation, or the mercury?

6. The *oil of turpentine* was tried, but always excited vomiting, and was therefore abandoned.

7. *Revulsives*.—Fomentations and poultices to the abdomen, extremities, vulva, and mammæ; hot pediluvium; oil of turpentine to body and limbs; warm and mucilaginous injections into vagina and rectum; blisters to the extremities and sometimes to the abdomen, were severally employed, and generally with advantage as secondary remedies. Moist heat, however applied, was generally grateful; but of course had, in so severe a disease, no very decided influence. The blisters were often detrimental by increasing the restlessness of the patient, and preventing sleep. Nothing seemed to be gained by attentions to the mammæ; the application of plasters and poultices or of the child, did not seem to retard the secession of the milk; as the patient was disturbed by the infant, it was soon withdrawn.

8. *Tonics and stimuli* were usefully employed, but not with any idea of curing the disease as has been mentioned, but on another principle presently to be indicated.

9. *Cold*.—The great disappointment experienced in not being able to resort freely in this acute form of peritonitis to general and local bleeding, and in the efficiency of other remedies, early induced me to think of ice to the abdomen as the most promising means for arresting this terrible disease. To this practice I was led by principle, and by experience in analogous affections. For several years, I have taught at the Philadelphia Medical Institute, that the direct influence of cold is universally sedative, as respects the organic actions, to internal as well as to external capillaries, maintaining that cold applied

to the skin does not determine the blood directly to the internal capillaries, but on the contrary, that the same condition of the capillary tissue is induced internally as well as externally, differing merely in degree. It may be useful to add, that the prominent facts on which this opinion of the *modus operandi* of cold is founded, are its acknowledged and powerful influence in moderating and arresting internal as well as external hæmorrhages; and also the decided benefit so universally experienced by its employment in many deep-seated inflammations of the limbs, of the brain, &c. when of the most acute character. Why then should it not be equally useful in acute peritonitis? I could not detect any satisfactory objection, but on theoretical views, and from experience in all analogous affections, I felt strongly inclined to use it freely and boldly. To this I was still further encouraged, not only by the failure of established modes of treatment, but by the accounts given of two cases of recovery in the *Journal of the Royal Society of Medicine of Toulouse* in 1827,\* where ice was applied, and by the reports of several practitioners in favour of cold cataplasms, cold affusions, &c. In consultation, therefore, with my colleague, Dr. Lukens, it was agreed to employ ice in the next case that appeared suitable. That no bad consequences should result, if possible, from its employment, it was not resorted to until the symptoms were decided, until it was evident that sanguine evacuations could not be further employed, and until the lochiæ and the mammary secretion had ceased. These circumstances existing in Case VI., Munhollan's, ice in cloths and in bladders was applied to those portions of the abdomen which were tender on pressure, while dry heat, blankets, &c. were directed to the extremities, and calomel was freely exhibited with the views already explained. The result was not positively for or against its employment, but to me it was decidedly encouraging; for although the patient died as speedily as in the other cases, yet she was naturally of a delicate constitution, had been the subject of dysentery and bronchitis before and during her confinement, was delivered prematurely of twins, and was at the time the ice was applied much exhausted, (pulse being 144 and very weak,) by the disease and by the leeches, which last appeared to be injurious to the local as well as general symptoms. She had also hypertrophy of the left ventricle of the heart. The ice was agreeable to her feelings, far more so than the turpentine and other revulsives previously employed; it contributed greatly to the relief of her rest-

\* Vide *North American Medical and Surgical Journal*, vol. vi. p. 198. *Archives Generales*, vol. xvi. p. 136. Baudelocque on Puerperal Peritonitis, p. 400. Am. Ed.

lessness; moderated the local symptoms, and apparently arrested the progress of the inflammation; for, if any correct judgment could be formed from the symptoms, particularly the tenderness on pressure, before and after its application, of the extent of the inflammation, it did not extend on the peritoneum after resort to the ice. *Dissection exhibited a more circumscribed inflammation than in either of the other fatal cases;* the effusion of lymph, &c. being confined to the lower portion of the abdomen, but in the other cases was found over all the viscera, liver and stomach not excepted.

Was not this patient also injured by the calomel, which kept up a distressing purging, and excited no affection of the mouth and salivary glands?

These observations certainly do not afford much encouragement in the treatment of peritonitis puerperalis as modified by epidemic causes, but by exhibiting the difficulties of the case may lead to a more scientific and efficient mode of treatment.

Puerperal fever in the Pennsylvania Hospital was manifestly an acute inflammation of the peritoneum, conjoined with derangement of the chylopoietic viscera, and occurring in individuals whose systems were preternaturally irritable, and whose vital powers immediately yielded to the severity and extent of the local inflammation.

The important and essential indication is to subdue the local disease, but its fulfilment was rendered fearfully difficult by the prostrated condition of the system. Hence, as frequently intimated, sanguineous depletion, purging, and other antiphlogistic remedies were often detrimental, although temporary relief might be afforded. The general principle I would therefore deduce, is that the vital powers should not be enfeebled under the expectation of curing the local inflammation. If, therefore, the pulse becomes more irritable and frequent from the loss of blood, such evacuations should be abandoned, however apparently useful in moderating the local symptoms, and measures for supporting and invigorating the powers of life, be adopted. This I believe to be a principle of very universal application, but too often, especially at the present day, forgotten—for practitioners, from a laudable desire to overcome the local inflammation, the *origo malorum*, not unfrequently sacrifice the general strength of the patient.

Antiphlogistic remedies have seldom any other effect than simply to diminish, by a direct or indirect influence, the morbid excitement; the alteration of action, the change from a diseased to a healthy state, is effected almost exclusively by the natural powers of the economy, and demands therefore that a certain degree of power should be pre-

served—patients may be rendered so weak that very slight local disease may destroy them. Surgeons are familiar with these principles, and daily act upon them in the management of suppurating wounds, compound fractures, &c. of long standing, often employing stimulating measures, locally as well as generally.

In all doubtful cases, the first evacuation of blood, if the pulse do not forbid the trial, should be tentative, as advised by Baudelocque, Jr. If the pulse acquire increased volume and tone, and become slower, the evacuations have been useful, and may sometimes be advantageously and even freely repeated. All direct depletion, however, must be effected within the first few hours; evacuations afterwards can seldom be tolerated, but moderate nourishment, tonics, and even stimuli, are demanded, that the patient may not sink from the local affection. These invigorating measures do not apparently augment the local affection.

Sanguineous evacuation being forbidden, or having been carried as far as practicable, the patient must be trusted to local antiphlogistic remedies, operating as sedatives or revulsives, with appropriate attentions to the general system. Judging from the few cases above detailed, and for reasons already advanced, I would prefer the sedative influence of ice to the abdomen as more promising than any other measure hitherto recommended. It certainly deserves a more enlarged and decided trial, having been apparently successful in some few cases on record—being more grateful to the sensations of the patient, and certainly exciting a more powerful influence, whether for good or evil, than any other measure at command. In using it, moderate warmth should be preserved in every other portion of the surface, the bowels be kept at rest by anodynes, the general strength supported by simple unirritating food, tonics, or even stimuli; and any occasional or accidental symptom be appropriately attended to. Should circumstances forbid the use of ice, revulsives alone remain at our command, and should then be resorted to decidedly: a blister to cover the whole anterior and lateral portions of the abdomen can alone be adequate to the emergencies of the case; small blisters are inadequate as revulsives, and probably produce as much general distress as the large one over the abdomen. Although my confidence in mercury is destroyed as a remedy for peritonitis, it perhaps should not be entirely abandoned, as in small and repeated doses with opium, so as to prevent any cathartic effect, it may correct the derangement of the chylopoietic viscera, the integrity of whose functions is so exceedingly important in maintaining the vital powers of the system.

Bleeding, general and local, regulated entirely by the condition of the pulse, especially as regards tension, with the constant application of ice to the abdomen, appear, therefore, to be the most promising remedies for puerperal peritonitis under the direction of a well-instructed and attentive practitioner.

The details of the cases at the hospital, as preserved by Mifflin Wistar, M. D. the house-physician in attendance, are appended, that all the facts may be presented to the profession.

**CASE I.** Margaret Riley, aged about twenty-three years, was delivered, after a healthy labour, of her first child, February 12th, 1833. On the 13th, as she had some fever and a furred tongue, she took a dose of magnesia.

14th. Medicine has operated freely, and she is now doing well in every respect.

15th, about 3 P. M. She was found complaining of great pain and tenderness on pressure over the abdomen; pulse very frequent; bowels have been opened several times during the last half hour. She was immediately raised up in bed and bled till she became faint, and four hours afterwards sixty leeches were applied over the abdomen. Her abdomen was also bathed with warm sweet oil, laudanum, and spirit of turpentine.

9 P. M. Feels very comfortable.

16th. Tongue dry and very red; great thirst; stomach very irritable; belly more tumid, especially about the epigastrium; no stool since yesterday afternoon; secretion of milk and the lochial discharge are almost suspended. Was directed, Calomel, gr.  $\frac{1}{2}$ , Sulph. morphia, gr. 1-12, every hour; lime water and milk to be given occasionally, and a blister 6  $\times$  7 inches to be applied to the epigastrium.

3 P. M. Pulse 120; great thirst; skin moist; abdomen most tumid about the umbilicus; great tenderness on pressure, especially over the uterus; she complains of very severe darting pain, and has become very anxious about her situation. Directed a mustard cataplasm to be applied over the hypogastrium, to take the cal. and morphia every half hour, and  $\zeta$ ss. spt. nitr<sup>i</sup> dulcis every hour. She was also allowed to hold small pieces of ice in her mouth, which proved very grateful to her.

6 P. M. Tongue more moist; pulse 135; complains of difficulty in passing her water. Directed Cal. gr. i., Sulph. morph. gr. 1-6, every half hour—suspending the use of the pills before mentioned. She was permitted to drink mineral water containing small quantities of sup. carb. soda. An injection of Oss. of cold water was also given.

9 P. M. Tongue continues moist; pulse 108; lochial discharge and secretion of milk are entirely suspended; has frequent hiccup; bears pressure over the abdomen much better than in the morning. Continue treatment.

17th, 6 A. M. During the night a blister was applied to each ankle; she slept well; has passed Oj. of urine, and now perspires freely; pulse very weak.

9 o'clock. Swelling of the abdomen increases; skin cold and clammy; mind sensible. Was directed to take every hour  $\zeta$ ss. of the following mixture:—R. Spt. terebinth.  $\zeta$ ss.; P. G. Arab.  $\zeta$ ij.; Sacch. alb.  $\zeta$ i.; Aquæ,  $\zeta$ vss. She was

also stimulated with wine whey, capsicum, &c.; rub her limbs with whiskey and turpentine.

*Noon.* Pulse barely perceptible; mind rational.

She died at 3 P. M.

*Examination twenty-one hours after death.*—On opening the abdomen we found universal peritoneal inflammation, which was very great on the posterior surface of the uterus; the peritoneum covering the anterior surface being less inflamed. The cavity of the abdomen contained a copious sero-purulent effusion, with flakes of lymph floating in it. The substance of the uterus was in a healthy state, but on opening its cavity we found a purulent fluid. The left ovary was very much softened, almost in a state of disorganization; the right one was healthy. The stomach and intestines were healthy; the latter containing natural fæces.

*CASE II.* Ellen Lehy, aged twenty-six, was delivered, February 26th, 1833, after a healthy labour, of her fourth child.

*27th.* Pulse frequent; tongue coated with a white fur; no unusual tenderness on pressure being made over the abdomen; very little milk; lochia as great as usual.

*28th.* Same as yesterday.

*March 1st, about 4 A. M.*—She became feverish, and very restless; she stated that about half an hour before she had a chill. She was immediately bled to syncope, and was directed the neutral mixture with small quantities of sulph. morphia.

*2d.* Pulse 120; tongue heavily furred; lochia very slight, but less offensive than yesterday; secretion of milk nearly suspended; skin moist; mind more composed. Directed Calomel, gr. ij., opii, gr. ʒ, every two hours; injections of tepid barley water into the vagina; a poultice of bread and milk to each breast, followed by a plaster of cerate, in hopes of facilitating the secretion of milk, and a blister to each ankle.

*11 P. M.* She perspires freely; no tenderness on pressure being made over the abdomen.

*3d, 7 A. M.* Has slept well; pulse 120; tongue furred. Directed the common injection.

*9 A. M.* Pulse 120; the injection brought away very little fecal matter; much flatulency. Directed a wine-glassful of the following mixture every two hours, alternately with the pills above mentioned.—℞. Fol. sennæ, ʒss.; Pulv. rad. zingib. ʒij.; Aquæ, Oiss.; Inject barley water into the vagina every three hours; she states that it affords her great relief.

*Noon.* Soon after commencing with the senna tea she began to vomit, the discharge being copious and very bilious. Directed lime water and milk; small pieces of ice to be held in the mouth.

*5 P. M.* Within last hour her pulse has become more feeble; skin cold; vomiting, which had been relieved, has now returned with great violence. Directed Pulv. ipecac. ʒj. which in half an hour produced copious bilious vomiting, after which she experienced great relief. The retching continuing, a pill composed of opium, gr. j. was given alternately every half hour with sup. carb. soda, gr. v. The clove tea was also resorted to, and a mustard cataplasm applied over the epigastrium.

10½ P. M. Vomiting returns at intervals; very little tenderness on pressure being made over the abdomen. Discontinue the opium, of which she has taken gr. vj., and let her take sulph. morphia, gr. ʒ. in solution, repeating in half an hour; apply a blister 5 × 6 inches over the epigastrium.

4th, 5 A. M. During the night her strength failed so much as to render it necessary to resort to carb. ammon. and wine whey, brandy punch, &c.; she is now delirious; pulse very feeble.

8 A. M. Pulse almost imperceptible. Directed sulph. quinine, gr. j. every half hour.

She died at 1½ P. M.

*Examination eight hours after death.*—The whole surface of the peritoneum was highly inflamed, especially on the posterior surface of the uterus. Lymph had been thrown out so freely as to form in many places for several inches in length a false covering for the intestines. The substance of the uterus was healthy, as were also the ovaries. The mucous surface of the stomach, with the exception of small patches of inflammation near the pylorus, exhibited a healthy appearance. The intestinal canal was filled with a dark-green fluid. The cavity of the abdomen contained a sero-purulent fluid similar to that met with in the former case.

CASE III. Martha Viney, aged twenty-two years, was delivered of her first child, March 1st, after a very healthy labour.

2d, about 9 A. M. I was called to see her, and found her complaining of a general feeling of uneasiness; pulse 110; tongue coated with a white fur; no tenderness on pressure being made over the abdomen. Directed a mustard pediluvium, to be used in a recumbent posture; a warm poultice to each breast, and to take Calomel, gr. v., opii, gr. j. immediately.

3d. Has slept well; pulse 110; tongue furred; abdomen tender on pressure, especially over the uterine region. Directed Calomel, gr. v. to be followed in three hours by an ounce of castor oil. Bathe the abdomen with warm laudanum, &c.

Noon. Abdomen more tender. Apply one hundred leeches over uterine region.

6 P. M. Much easier since the application of the leeches. Directed Calomel, gr. ij., Pulv. Dover. gr. v. every two hours until she sleeps.

4th. After taking two powders she slept well during the night; pulse 110; tongue furred; very little tenderness on pressure being made over the abdomen; milk and lochia, which for the last thirty-six hours have been very deficient, are now fast increasing in quantity. Apply a warm covering of cerate to each breast in order to facilitate the secretion of milk.

5th. Pulse 100; tongue cleaning; milk and lochia both increased in quantity; skin is dry. Directed Spt. nitri dulcis, ʒj. every two hours.

6th. No tenderness on pressure over the abdomen; pulse 96; tongue cleaning; milk increasing in quantity; lochia less. Directed nitre to be continued, and an injection to open her bowels.

7th. Pulse 90; in other respects same as yesterday. Directed Elix. vitriol, gtt. xij. twice a day.

9th. Gradually gaining strength.

18th. Doing well in every respect.

25th. Continues well.

CASE IV. Catherine Borstall, aged thirty, was delivered, March 6th, after a healthy labour, of her first child.

She did well until March 10th, when, on the forenoon of that day, she began to complain of griping pains, attended with tenderness over the abdomen; tongue coated with white fur; pulse 100; milk and lochia as great as usual. Directed an anodyne injection; one hundred leeches to be applied over uterine region, and the abdomen to be bathed with warm laudanum, &c. as used in the previous cases.

2 P. M. Feels much easier. Directed Pulv. Doveri, gr. x., Calomel, gr. ij. every two hours. \*

6 P. M. Tongue inclined to be dry in the centre. Discontinue powders; let her take castor oil, ℥j.

10 P. M. More fever; medicine operating freely. Was bled until she became faint, which occurred after the loss of ℥xx. of blood.

11th. Much better.

12th, 7 A. M. No change in her pulse; but she states that she felt much more comfortable; oil produced several evacuations during the night. Directed an anodyne injection.

13th. Pulse 110; tongue furred; very little tenderness over abdomen. Directed a dose of magnesia, to be followed after it has operated by an anodyne injection.

Noon. More fever. Directed v. s. ℥xiv. and the abdomen to be bathed with warm laudanum, &c.

14th. Has slept well; pulse 120; tongue furred; milk and lochia much diminished in quantity. Directed the following pills:—R. Pulv. ipecac. gr. ij.; Pulv. opii, gr. ij.; Calomel, gr. xij. M. et div. in pil. No. xij. Sig. one every two hours.

6 P. M. No tenderness of the abdomen; pulse very weak. Directed weak wine whey; continue pills.

15th, 2 A. M. Very restless; respiration difficult; pulse 120. Directed a blister to each ankle, and about 8 o'clock it became necessary to stimulate her with carb. ammonia, spirit of turpentine; egg and wine.

Noon. No change.

7 P. M. Pulse 120; tongue moister; abdomen more swelled, but not tender.

10 P. M. Directed Calomel, gr. iv., Sulph. morph. gr. 1-12, every two hours, instead of those before mentioned; rub Ung. merc. fort. on inside of thighs; continue stimuli, and rub abdomen with lin. saponis and spt. terebinth.

16th, 7 A. M. No change. Continue treatment.

Noon. Has had one watery stool, of a yellowish-green colour.

7 P. M. Pulse stronger, 120; tongue moister. Directed an injection of Oj. of cold water.

10 P. M. Very stupid; tongue dry. Suspend the use of calomel and morphia; rub the abdomen with Ung. merc. fort.; give her Calomel, gr. iv. every two hours.

17th, 7 A. M. Has passed a sleepless night. Continue treatment.

7 P. M. Bowels have been frequently opened during the day, discharges being small, bilious, and attended with considerable pain; gums are evidently



affected by the mercury. Directed chalk mixture, with sulph. morphia, pro re nata.

18th, 7 A. M. Delirious; pulse weak, and very frequent. Continue treatment.

Noon. Weaker. Directed stimuli to be resorted to more freely.

7 P. M. Mouth very sore; complains of general pain and soreness. Discontinue mercurial frictions.

19th, 7 A. M. Mind more rational; pulse same as yesterday. Directed poultices to the parts which have been rubbed with the mercurial ointment.

Noon. Has had a very healthy discharge from her bowels.

7 P. M. Much weaker. Continue stimuli.

20th, 7 A. M. Pulse almost imperceptible; complains a great deal of a general feeling of soreness over her body, especially where the mercurial ointment has been applied; mouth very sore; mind rational. Directed an infusion of red bark, to be mixed with an equal quantity of lime water, and let her take it ad libitum. As her bowels have been several times opened, (discharges watery, bilious hue,) the morphia has been resorted to in larger doses.

Noon. Has had the usual bilious vomiting several times during the morning.

She died at 8 P. M.

*Examination thirteen hours after death.*—The peritoneum covering the posterior surface of the uterus was more inflamed than the anterior, as occurred in the previous cases. The liver had a very thick covering of lymph, especially on its right side. The abdominal cavity contained about three quarts of a sero-purulent effusion. The large intestines contained healthy fæces, closely resembling in their appearance the discharges of young children. The liver and gall-bladder were in a healthy condition.

CASE V. Harriet Pitney, aged thirty-five, was delivered, March 11th, after a healthy labour, of her second child.

12th. Doing well.

13th, 11 A. M. Found her abdomen tender on pressure, especially over the uterine region; milk very small in quantity; lochial discharge slight, but of a good colour; pulse 120; tongue coated with a white fur. Was directed an ounce of castor oil; and one hundred leeches to be applied over the uterus.

5 P. M. She became very faint after the application of the leeches, and vomited freely. Directed Pulv. Dover. gr. x., Calomel, gr. ij.

14th, 7 A. M. Has slept well; pulse 125; abdomen tender and more swelled; tongue coated with a white fur; milk and lochia nearly suspended. Directed Calomel, gr. x. now, and gr. x. more at 1½ P. M.; one hundred leeches to be applied over the uterine region, and a blister to each ankle.

4 P. M. She vomited the first dose of calomel, but retained the second; abdomen less tender; breathing freer; pulse 138. Directed a pill composed of calomel, gr. x. and the common injection.

6 P. M. Pulse 144. Directed Calomel, gr. v.; opii, gr. ¼. every two hours; the common injection to open her bowels; a blister to be applied to each wrist, and her abdomen to be rubbed with ung. merc. fort.

10 P. M. Lochia slightly increased in quantity; abdomen more tender, her bowels have been opened several times, discharges watery, of a yellowish-green colour. Apply a poultice of bread and milk to the vulva, as she states that warmth to that part gives her relief.

15th, 7 A. M. Has passed a very restless night; pulse 140; blisters have drawn well; complains of great debility; mind rational; very anxious about her situation. Directed the pills to be discontinued, and ordered wine whey and carb. ammon. and spt. turpentine, &c.

Noon. Pulse very feeble; mind sensible.

7 P. M. Delirious; pulse still weaker.

10 P. M. Directed Ung. merc. fort. to be applied over blistered surfaces on her arms and legs, and the lower half of her abdomen to be covered with a blister.

16th, 7 A. M. Pulse nearly imperceptible; delirious.

She died at 10½ A. M.

*Examination seven hours after death.*—The peritoneum was highly inflamed, especially over the posterior surface of the uterus, and around the liver, which places were thickly coated with lymph. Extensive effusion of a sero-purulent fluid had occurred in the cavity of the abdomen. The substance of the uterus was healthy, but its cavity contained a sero-purulent fluid. The ovaries, especially the right one, were highly inflamed. The stomach contained a large quantity of a dark-green fluid, similar to that found in Case II.

CASE VI. Mary A. Munhollan, aged twenty-one, was delivered, March 13th, after a healthy labour, of twins—it being her second pregnancy.

14th. Doing well.

7 P. M. Pulse natural; tongue furred; some fever; lochia as great as usual. Directed Calomel, gr. x. to be followed by an ounce of castor oil.

15th, 6 A. M. Pulse has within last hour become much more frequent, 120; tongue coated with a white fur; no milk; lochia, very slight; some tenderness over uterine region. Directed an ounce of Epsom salt, and twenty Spanish leeches to be applied over the uterus.

9 A. M. The leeches have afforded but little relief; pulse 120. Directed Calomel, gr. ij. every two hours.

Noon. Bowels have been opened several times during the morning, discharges watery, and of the usual bilious hue.

3 P. M. Complains of coughing at intervals; pulse 138. Directed the pectoral mixture pro re nata.

16th, 7 A. M. Complains of pain in both iliac regions, especially the right; pulse 144; tenderness over abdomen increases; mind more cheerful. Apply fifteen Spanish leeches to the iliac regions.

Noon. Apply cold to the abdomen; resorting to ice as soon as she can bear it conveniently.

3 P. M. Bowels have been opened several times. Directed an anodyne injection.

6 P. M. She has derived but little benefit from the leeching; says the ice feels very comfortable, being far more agreeable than warm applications. Directed Sulph. morph. gr. ʒ. Continued pills and ice.

10 P. M. Directed Calomel, gr. iv. every two hours. Discontinue the calomel pills before mentioned, and give her a table-spoonful of the following mixture every two hours:—℞. Mist. neutral, ʒvj.; Spt. nitri dulcis, ʒiiss.; Sulph. morph. gr. j.

17th, 7 A. M. Has slept tolerably well, but has had four watery stools. States

that the ice is very agreeable to her; pulse 128; continue pills, but stopt the mixture, as it offends her stomach. During the night she took small quantities of morphia to check the purging, which gave her great pain. Directed Camphor, gr. iij. every two hours, and egg and wine; Sulph. morphia pro re nata. Continue pills.

7 P. M. Calomel has purged her several times, which was relieved by anodyne injections. Directed the cretaceous mixture, wine whey, &c. Rub the mercurial ointment on the arms and legs.

18th, 7 A. M. During the night her bowels were opened several times, and she was attacked with bilious vomiting, which we endeavoured to check by the cretaceous mixture, peppermint, and sulph. morph. She is now sinking fast. Directed wine whey, quinine, and capsicum, with brandy punch.

Noon. Owing to the irritability of her stomach, all the medicines are discontinued; she at intervals complains of acute pain over the abdomen; pulse almost imperceptible; vomiting continues; purging has ceased; mind rational. Ice was removed this morning since she complained of it. Bathe the abdomen with spt. of camphor. She died at 4 P. M.

*Examination sixteen hours after death.*—The peritoneal coat of the uterus, Fallopian tubes and ovaries, was highly inflamed. The cavity of the abdomen contained a dark-green fluid. The substance of the uterus was in a healthy condition. The ovaries were highly inflamed, but the phenomena of inflammation were exhibited in a much lighter grade than in any previous case. The peritoneal coats of the liver and stomach were healthy, but the mucous surface of the latter presented several patches of inflammation. The liver and gall-bladder were in normal states.

CASE VII. M'Guigan was delivered, March 13th, after a healthy labour, of her first child.

14th. Doing well.

15th, about 6 P. M. She began to complain of pain over the uterus; no milk; lochia as great as usual; pulse 90; tongue coated with a white fur. Directed Calomel, gr. x., Opii, gr. ss. to be followed by a dose of castor oil.

16th, 7 A. M. Has slept well; medicine has produced two healthy stools; pulse 120; lochia less; secretion of milk very slight. Directed Calomel, gr. x., Opii, gr. ss. and the common injection to open the bowels.

7 P. M. Bowels have been freely opened; discharge healthy.

17th, 7 A. M. Has slept well; milk and lochia increasing in quantity; tongue still furred. Directed Calomel, gr. x., Opii, gr. ss.

7 P. M. Directed common injection.

18th. Injection operated; symptoms improved, but tongue still furred, and pulse frequent.

25th. She recovered; convalescence however was slow.

CASE VIII. Mary Sullivan was delivered, March 16th, after a healthy labour, of her first child.

March 18th. During the morning, as she was somewhat feverish, she was bled  $\zeta$ xv. About 9 P. M. she began to complain of pain and soreness over the uterine region; pulse 120; tongue coated with a white fur. She was immediately raised up in bed and bled until she became faint, which took place after the abstraction of  $\zeta$ xxiv. of blood. Directed Calomel, gr. vj.; Pulv. Dover. gr. x.

19th, 7 A. M. Has slept well; secretion of milk very copious; lochial discharge less than yesterday; pulse 112; tongue moister; tenderness over uterine region much relieved by the last bleeding, but still complains on pressure being made over the abdomen. Directed Calomel, gr. vj., Pulv. Dover. gr. v. every three hours; apply one hundred leeches over the uterus and to the groins.

Noon. Pulse 120; abdomen less tender; bowels not opened since yesterday morning. Directed an injection to open her bowels, and to have the vulva washed with warm water. Continue calomel and Dover's powders.

8 P. M. Feels no pain. Her bowels have been opened a second time by an injection. Discontinue calomel and Dover's powders. Morphia p. r. n.

20th, 7 A. M. Has slept well; pulse weak, 138; tongue furred, but moist; tenderness over the abdomen very slight. Directed Sulph. quinine, gr. j. every three hours; chicken water ad libitum.

Noon. Bowels have been opened several times during the last hour, discharges watery and bilious, without pain however. Directed the quinine to be taken every two hours.

4 P. M. Bowels have been opened twice since noon; milk and lochia decreasing in quantity. Directed in addition to the former treatment, a tablespoonful of the cretaceous mixture every half hour, an anodyne injection, and the application of a poultice to the vulva, with a view of increasing the lochia.

7 P. M. Pulse 120; skin dry; very anxious about her situation; has had several stools, which were attended with considerable pain. Discontinue pills of quinine. Directed Spt. nit. dulc. ʒj. every hour. Continue morphia and cretaceous mixture.

21st, 7 A. M. Bowels have been opened several times during the night; milk and lochia are almost suspended; pulse very frequent; no tenderness of abdomen, except for a short time after her bowels have been opened. Directed Creta. ppt. ʒj. every two hours; an injection, Sulph. zinc. ʒj. to a pint of water. Let her drink freely of chicken soup.

Noon. Bowels have been opened several times; discharges consist of bloody mucus, mixed with small portions of fecal matter; no tenderness of the abdomen.

7 P. M. Purging continues. Directed an injection of a gill of flaxseed tea with ʒss. of lard, and twenty drops of laudanum; continue chalk mixture; give ext. rhatany every two hours alternately with the chalk mixture; let her drink freely of chicken water, wine whey, &c.; morphia pro re nata; inject barley water into the vagina every few hours.

10 P. M. Secretion of milk more copious; pulse 110; tongue rather dry.

22d, 7 A. M. Has slept well; only one stool during the night; milk has returned to a considerable extent, but lochia is very slight; pulse soft, 104; tongue moister; mind more cheerful; appetite good. Continue treatment.

7 P. M. No change since morning.

23d, 7 A. M. Has slept well; milk in good quantity; lochia slight; has had one healthy stool; pulse 104; tongue cleaning off.

24th. Continues doing well. Continue treatment.