Recapral Fever:
Its Nature, Prevention and Treatment
(With six Cases)

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Introductory—Of late years antiseptic methods have removed much of the dread associated with the name of 'childbed fever', but the mortality from it still remains sufficiently high to attract attention, and to incite to the adoption of all means in any way calculated to diminish it.

Probably few subjects in obstetrics have given rise to so much difference of opinion not only among authorities in modern times but from the very earliest mention of the subject in literature. Dr. Fordey Barker found that more than twenty thousand pages had been published on this subject within twenty years (1854-1874) and a complete bibliographical catalogue alone of all that has been written on puerperal fever would fill many pages of an octavo volume. (The Fever of Childbed. Fordey Barker, 1861)

In view of this it would be sheer presumption for me to suppose that anything I can say has not been said before. My reason for choosing the
the subject is to be found in the fact that during the last three years, in my practice in this town, I have been brought into contact with several cases of the disease, which have illustrated various points of interest both in regard to propagation and prophylaxis.

Historical. In order to appreciate the importance of modern views as to its etiology, and to get an idea of the interest at all times taken in a disease whose visitations until comparatively recently were always mysterious and ill understood, it is necessary to mention very briefly some of the opinions as to its nature held by writers of past times. These are very fully stated by Mervieux in "Traité Clinique et pratique des maladies puerperales," also shortly in Winckel's "Medizinal," etc., and in other textbooks.

The history of puerperal fever is almost contemporary with that of medicine, and is closely bound up with the various theories put forward to explain its occurrence. Thus it is first definitely mentioned by
by Hippocrates (400 B.C.) (De morti, Popularity)—where eight authentic cases are recorded, and the disease is attributed to suppression of the lochia, through spasm or inflammation of the uterine vessels and to retention and decomposition of portions of the placenta. This theory, which was generally accepted for almost twenty centuries, was advocated by Galen (A.D. 150), the Arabian Avicenna (A.D. 1000), and later by Ambroise Paré, Marienau, and De la Motte in France, also by Sydenham Smellie. About the end of the seventeenth century came the theory of milk metastasis, by which it was taught that milk circulated in the blood, and was attracted to the uterus during pregnancy and to the breasts after delivery, such that under certain abnormal conditions the milk might collect in other parts and give rise to malignant or intermittent fever. This theory was first suggested by Mercierius, but only definitely brought forward by Payos in 1753. It was much advocated in France when in 1756 Fontain declared he had found clotted milk among the intestines of...
of women who died in Paris during that year, and Kimmel stated that he had made butter from milk evacuated by the intestines. This doctrine flourished till 1841, when Eichler showed that these abdominal effusions occurred in men and non-puerperal women who had died of peritoneal inflammation.

The next to claim attention is the physiological theory of Antoniotti, set forth about the beginning of the present century. It combines the two preceding and is briefly: "During gestation all the fluids flow specially to the uterine, but after labour they are eliminated by the sweat, lochia, and milk. If these periphery functions are interrupted the course of these juices is determined to the head, chest, and especially the abdomen."

IV. Goethe, Gunther, and others maintained that the pressure of the uterine tumour in pregnancy interfered with the free excretion of bile, urine, etc., and that accumulating caused fever. This is known as the "Gastrations theory of Stoll."

V. The fact that local inflammations are
frequent in pre-operated jaws led to these being mistaken for the disease itself, and this resulted in the phlegmatic theory, which found many advocates, as Clarke, Mead, Johnston, who taught that the disease was an inflammation starting in the uterus, its adnexae, the veins or lymphatics; or it was simply a peritonitis. Thus deaths from Childbed fever were variously attributed to enteritis, peritonitis, phlebitis, etc.

VI. Closely allied to the above is the epidemico-epidemic theory which is still advocated by many. It was first advanced by Bouchard in 1766. Epizootics might attack the entire uterine system (Oganan), the peritoneum (Gorday), or the intestines (De la Rochu).

VII. The haematogenous theory, springing from that of lockieus and milk metastases, maintained the existence of a micrococci which acting on the blood gave rise either to local disease or poisoning of the nerve centres (Scapizoni and others). This is closely related to the modern view that the pre-operational fever is septic in character, and that pre-operational fever is really a surgical process.
fever, modified by the peculiar physiological conditions of the peculiar state.

Various other observers advocated views of minor importance. Thus "per
cephalic typhoid" was the name given to it by Conrady in 1831. It had been already called a "parasitic fever," (Sumner and Willis), while others said that it was simply hospital typhus, and a third group that it was of the nature of inter-
mittent fever. (Wedel, Pust, etc.)

The above imperfect summary serves to indicate the diversity of opinions held by many observers of eminence in their day as to the nature of the disease.

It was not till towards the close of last century that attention began to be prominently directed to perpetual fever on account of the extraordinary mortality in many lying-in institutions both in this country and on the Continent.
In London between 1760 and 1770 in several lying-in hospitals nearly all the patients died. Also in Edinburgh Lying-in in 1773 almost every woman as soon as she was delivered
'delivered, or perhaps about twenty-four
hours after, was seized with it, and all
of them died, though every method was
used to cure the disorder.' (Stuyvesant Midwifery p.332)

In the large Continental Hospitals at
Paris, especially in the Hotel Dieu, at Vienna,
and at Berlin, the mortality was equally
great. (Schlegel Midwifery p.328)

In 1850 James C. Simpson, in the Edinburgh
Medical Journal, published an article "On
the Analogy between Puerperal and Surgical
Fever," in which he foreshadowed the most
recent opinions as to the origin of puerperal
fever, and this is all the more remarkable
in view of the rudimentary state of patho-
logical research at that time.

Another observer who contributed to the
establishment of the doctrines now most
in favour was Robert Ferguson. He proved
both by experiments and clinical obser-
vation that puerperal fever might be
called artificially by blood vitiation.

The character of the poison by which
the blood was infected to the production
of such dire results in the puerperal
woman
woman was naturally the subject of much discussion. Ignatius P. Semmelweis, a Hungarian, acting as clinical assistant to Professor Klein in the maternity department of the General Hospitals at Vienna, in 1847 made the statement that "pruritus patients were chiefly attacked with puerperal fever when they had been examined by the physicians who were fresh from contact with the poisons engendered by cadaveric decay; that fever ensued in the practice of those, who after post-mortem examination, washed their hands in the usual manner, whereas no few or but few cases of disease followed when the examiner had previously washed his hands in a solution of chloride of lime (Rund 1663). This he specially demonstrated by the fact that for the six years, 1841-46, in Dr. Klein's own clinic, among patients attended by students who at the same time were attending the dissecting post-mortem rooms, the mortality was nearly as much as 10 per cent. (92 per 1000), while in the division attended solely by women in the same institution, forming Dr. Bzachi's Clinic, it was only...
about 3 per cent (33.8 per 1000). Semmelweis got the first hint of the true nature of the disease from the illness of a friend, Prof. Holletzchek, who died from the effects of a dissection wound, and whose symptoms closely resembled those constantly seen in the cases of puerperal fever. In consequence of this evidence, strict rules were enforced that students should wash their hands with disinfectants and not merely with soap and water, and the result was that the mortality fell to 12.5 per 1000, a lower rate than that prevailing in the women's clinic (via D.-Duta's paper in the Lancet for July 31st and Aug. 7th 1886).

In this connection the following, from Simpson's Selected Philosophical works, is interesting:

"In 1836 or 1837, Dr. King of this city, had a rapid succession of five or six cases of puerperal fever in his practice, at a time when the disease was not known to exist in the practice of any other practitioners in the locality. Dr. King, who had then not firm or proper belief in the contagious propagation of puerperal fever, attended the dissection of his six patients, and freely handled..."
bundled the diseased parts. The next four cases of midwifery which Dr. Simpson at Leith attended were all affected with puerperal fever, and it was the first time he had seen it in his practice. Dr. Pattison of Leith examined the ovaries in the three next cases which Dr. Pattison attended in that town were attacked with the disease.

Semmelweis maintained his theory in spite of the greatest opposition and in 1861 published his treatise entitled, "Über die Ursachen der Nekrose und der Prophylaxis des Kindbettfiebers," in which his original view of the poison being derived from the cadaver itself is expanded to include poison derived from all decomposing animal organic waste, whatever its

Nature of Puerperal Fever from the standpoint of most modern investigation.

What has been said gives some idea of the diversity of opinions held as to the nature and etiology of this disease, and leads up to a consideration of the views advocated within recent years, and the theory now most generally adopted.

The term "Puerperal Fever" was first used.
used by Morton in 1718 (Barus). Or according to Forbes, Hunter by Struth in 1716, and if employed to mean simply fever during the pregnancy, and not to imply a special fever peculiar to lying-in women, it is open to little objection.

Morton writes on this subject exhibit a diversity of opinion which is almost as great as that found among those of past times, and according to Prof. Playfair, this "supposed necessity of providing a theory which would explain all the facts of the disease has done more to surround it with obscurity than even the difficulties of the subject itself" (Op. cit. p. 338). Nevertheless, it is desirable to notice here three of the most prominent of these theories, before taking up the consideration of the one which has now practically usurped the place of all the others.

I. Theory of local origin. The adherents of this school have taught that the disease starts primarily as an inflammation in the genital organs or the tissues surrounding...
surrounding them, and that the fever and other symptoms are the secondary constitutional effects of this. The pathologic theory of the older writers is practically the same, but they generally limited the process to one tissue or organ. Dr. Meigs of Philadelphia in a work on this disease said “it is a simple state of inflammation in certain tissues of pregnant women and of women lately confined, and the fever that attends it is a natural effect of intense constitutional irritation from the local disorder” (Ioqué, 1843). Many other writers in America, in France, notably Professor Roussan, Delaire, Pajot, and a few in Germany, have held this view. However, it never gained much support in Great Britain, and modern pathology has proved that the supposed lesions—peritonitis, phlebitis, lymphangitis, and mastitis—are neither uniform nor constant, and are often absent in the worst forms of the disease. Again, there may be intense local inflammation with no characteristic symptoms of puerperal fever.
Fever; nor does the theory of the localists explain the fact that the disease may be conveyed from one patient to another and that through the medium of a third person. In short, the localist theory does not take account of a poison in the blood, and yet the presence of such blood poison, along with the local lesions, is really the main characteristic of febrile fever.

II. The traumatic or wound fever theory has been largely accepted in Germany. It is of course closely allied to the septicemic theory with which it is frequently confounded, and doubtless trauma-miasm and septicemia are often conjoint factors in producing the disease. Wounds of the genital organs are common enough after labour, but under favourable conditions they heal without fever. If fever occur after such wounds it indicates absorption of some product that is foreign to them as long as they remain healthy, and we are brought at once to the consideration of septic absorption. The fever

Caused
Caused by the entrance into the circulation of the exudation from a healthy wound, such discharge being aseptic, is usually slight and cannot be compared for a moment with the febrile movement usually associated with such a disorder as puerperal fever.

Theory of an essential zymotic fever

This view has found its firmest support within recent years, in Professor Edward Tulk of New York, but was first it advocated by several writers of note towards the close of last century. Thus Helme in 1772 writes: 

"Puerperal fever is a disease sui generis, as simple and regular in its appearance for the most part as any distemper incident to the human body. The pathognomonic remarks are: acute pain and great somnolence over the lower part of the abdomen, attended with fever, and commonly a pain in the forehead, happening soon after labour. These signs are sufficient to distinguish it from all other diseases." Various other writers have expressed a similar opinion, e.g. Joseph Clarke (1730) Armstrong (1795) and

It is however mainly to Forbes, Barker, that the present day vitality of the theory is due. At page 469 of his exhaustive treatise, "On Puerperal Disease," he says that this school "regards puerperal fever as primarily a blood disease, developed, like other pyemic diseases, by epidemics, endemic, and contagious causes; this in this disease a modification of the general organism occurs antecedent to the local lesions, and consequently the local lesions are secondary; that is, they are the results of the disease and not the cause — in short, that it is an essential fever."

In examining this position one notices firs that he does not take into account the so-called autogenous cases of puerperal fever, where the disease arises from decomposition of retained decidua, coagula, or wound sepsis, but to explain such cases Barker admits that "Septicaemia may be developed in a puerperal woman either
either from autogenous or heterogenous infection, without preparturial fever, but this infection may also complicate puerperal fever" (p. 1577). He does not however show that such cases of septicemic fever differ either clinically or pathologically from those that he describes as an essential fever.

Again in the exanthemata, as smallpox, typhoid etc., the local lesions are constant and uniform, and their appearance may be predicted practically with certainty, but in puerperal fever no two cases present exactly the same symptoms or anatomical lesion nor does the disease run the definite course of a puerperal fever.

IV. The Septicemic Theory is that which has gained most adherents at the present day, and which has practically superseded all the others. It teaches that puerperal fever is essentially a poisoning of the blood due to the absorption of septic matter into the system. It is a development of the haemotogenous theory before referred to.
Dr. Robert Barnes in his "Lectures on Fever in Fevers" published in the Lancet in 1865 divides the causes of the disease into two classes:

1. The heterogenous or external causes, those agencies which, taking their rise in conditions foreign to the patient herself, have to be brought to her while she is in a state of susceptibility to their influence, in order that pyrexial fever may be produced.

2. The autogenous or internal causes, those which take their rise in conditions proper to the patient herself, these being no contamination from without. The poison which ferments into fever is generated within the patient."

Dr. Barnes termed the autogenous form Exogenous pyrexial fever and (in Obstetrics made by Dr. B.) insisted on the importance of keeping in view in this connection the peculiar and in fact unique condition of the patient immediately after labour. He says: "We see that the sudden revolution wrought on the termination of gestation is marked by local and constitutional changes of the most striking kind. The local changes are in the
in the first place, traumatic, the immediate result of the violent process of labour; in
the second place, the disintegration of tissues in the uterus and correlated organs; in the third place, the altered condition of the blood, a compound of
the blood of gestation into which is thrown the disintegrated stuff of invading
a kind of sepsis which is ready at any
moment to evoke inflammatory or febrile
action if its elimination be impeded. In
this sense then, we have, 

"sui generis a puer-
peral februm." He goes on to say: "Upon this
form may be grafted: 1. The products of
inflammatory action in the tissues of the
parturient canal; 2. The products of de-
composition or septic stuff on the surface
of the parturient Canal, absorbed from this
surface, and especially from the wounds of the placental site, of the cervix uteri,
and perineum."

Since the introduction of these terms by
Dr. Barnes, their strict and literal meaning
has to some extent been lost sight of,
and this has been in great measure
due to the recent advances made in bacteriology. Thus autogenous fever has got to mean fever derived from any condition giving rise to decomposition, either of the tissues of the mother herself, as in sloughing from pressure, of retained coagula and fragments of decidua in the uterus, of matters derived from a putrid focus, or simply of the locoia (see Schrod. p. 330, Magtain 262 etc). Strictly these sources of fever are heterogeneous since the cause of the decomposition must have come originally from without, and this point is of the utmost importance, for if one admits the existence of a septic infection which may arise spontaneously in the prenepal woman a blow is at once struck at the whole system of antiseptic midwifery. This is strongly put by Harvie in "The Seirum and Antiseptic" p. 563 where he says: "The doctrine of autogenecis is a confession of ignorance, the creed of fatalism, the cry of despair, the very pessimism of Obstetric medicine." The supporters of the
of the doctrine of an autogenic form of putrefaction, however, so far as I am aware, denied the possibility of infection from without except in the case of W. Barnes' simple "Excavatory putrefacient fever," meaning fever caused by impeded evacuation of waste products. Taken in its ordinary and looser meaning of fever arising from decomposing excreta, the term necessarily presupposes contamination from without of some sort, for without such contamination could not arise.

Increased knowledge as to the nature of sepsis has led to a revision of this classification, and we find recent writers using the terms Septicemia and Septicemia for the two main varieties of purpurial fever.

1. Septicemia: a term invented by W. Matthews Dunson, is used to mean septic intoxication, or putrefacient fever, and to express a fever derived from the absorption of the chemical products of tissue decomposition of dead tissues, such as
as clots, bits of membrane, of placentae etc. This result is brought about by the agency of bacteria, which do not themselves enter the tissues, but which lead to the formation of certain chemical substances of the nature of alkaloids to which the name of tannins is given. These have been abundantly proved to be intensely poisonous, but the non-pathogenic organisms which produce them cannot develop amongst living tissues, and should they enter the bloodstream they speedily perish. The local and constitutional effect they produce are solely by means of the chemical products formed in the dead matter in which they are growing" (Eichm, 1869). The terms saprophytes or avirous fungi serve further to distinguish them from the parasitic or pathogenic fungi which cause a true infective fever. For several years it was believed that these septic diseases could be produced only by microorganisms, but it is now known that abscesses etc. may be produced by purely
purely chemical substances, without the presence of microorganisms at all, and a body known as cadaverin, a product of the action of bacteria, has been obtained by chemical means alone, and gives rise to suppuration indistinguishable from that excited by the agency of bacteria (Winckel, p. 848).

Dr. Watson Cheyne in his "Recent researches on microorganisms in relation to suppuration and septic disease" (Pert. Med. Soc. 1886) states, "Although in general one may accept the occurrence of cases of pure sepsis—i.e. pure phlomen poisoning—it does not follow that it is of frequent occurrence," but he admits that organisms which do not spread into the living tissues may attack the body by the formation of phlomen, peptonising ferment, fibrin ferment etc. In other words the circulating material may be regarded as developed outside the body, and as causing blood poisoning, by the chemical products of the process soaking into the tissues in the same way as any soluble salt might do. Thus the effect on the system is
is directly proportionate to the quantity absorbed. In short, there is no infection of the system. Pure infective pus is not directly connected with sepsis, but the putrefactive and infective organisms may be present together, and in that case the decomposition due to the one has a favourable effect in promoting the multiplication of the other.

**Sepsisemia.** This variety is by far the most important and is due also to microorganisms, but the nature of these is quite different and their disease-producing power much greater than that of the bacteria of decomposition which give rise to putrefaction.

The organisms of sepsisemia have the power of growing and multiplying like true parasites in the living tissues of the body, and in this respect may be compared to such animal parasites as the *Acarus scalari* or triechina spiralis. In most other respects the comparison fails. They are vegetable growths and belong to the same orders and classes of fission fungi.
jungi as the saprophytic organisms already mentioned, but they differ in form from these being round bodies or cocci and are found either singly or aggregated in chains or clusters. They are not morphologically distinguishable from the ordinary micrococci of suppuration. The form most often met with in purpuric fever is the chain-forming micrococci or Streptococcus pyogenes, but others have also been found, viz. the Staphylococcus pyogenes aureus—producing the well-known orange-yellow colouring matter on cultivation—albus—growing with a whitish colour—and citreus—producing a bluish colour.

The way in which these microbes produce the morbid phenomena in question is a point that is not yet known with accuracy, but they are supposed to act in three ways: (1) They produce toxic substances—phlegmasia—which excite inflammations and fever, and poison the nerve centres. (2) They use up oxygen and other materials required by the body. (3) They act mechanically by 

plugging
plugging the small blood vessels and lymphatics.

The study of these organisms has done much to explain the nature of smallpox fever, but there are still difficulties in regard to the full explanation of various clinical facts, for which time and further investigation are required. For instance these organisms are common in many parts of the body, as the skin and alimentary tract, and it has been stated by Schickel that they are present in the vagina in half the cases of pregnant women who have never been digitally examined. This may admit of two explanations. Either there are several varieties of germs differing in toxic properties but not distinguishable morphologically, or 2. the tissues of the pregnant woman afford a suitable soil for the development in virulence of these microbes by cultivation. The latter view is important and corresponds with what is known as the modification of smallpox.
by vaccination. Germs must necessarily be dependent for their growth and activity upon the medium in which they are placed. That outside conditions affect these organisms is well known, and environments may act in two ways. If the change in the conditions be rapid and radical it may render life altogether impossible, or if the alteration be comparatively slight it may result in the production of a race differing in certain respects from the original, and these differences are continued generation after generation so long as the new conditions prevail. Moreover a return to the original conditions results in a return to the original characteristics of the organisms (Dr. O. Chalm's paper read before the Pathological Section of the Brit. Med. Assoc. 1891).

Again, in the "Lancet," Dec. 7, 1889, is published a paper by Dr. Louis Pasteur, who refers to the researches of Professor Stahl and Dr. Cartwright Wood in regard to the bacillus of Anthrax. They prove that it is possible
possible to render mice, guinea-pigs, and rabbits immune against virulent anthrax infection by inoculating them with ordinary saprophytic bacteria, and generalizing formulate the theory that pathogenic organisms are not essentially distinct but are derived from a common saprophytic ancestor. Should such be the case it would indicate that the distinction between sapraemic and septicæmic in puerperal women is not so great as at first appears; and as a matter of clinical experience it is found that a case which, at first is one of pure sapraemia may if neglected develop into one of septicaemia, the first affecting preparing the way both by affording more suitable lodgments for the infective germs and by diminishing the resisting power of the tissues to their invasion.

It is evident from these considerations that the state of the maternal tissues after labour plays an important part in the development or non-development of septicaemia, and it is a question whether more practical
Practical good may not result from a close attention to the condition of these as regards traumatism, retention of discharge or debris etc., then from a search after the particular germs that is supposed to give rise to fever in any special instance. That is to say render the soil unsuitable and the germs whether their nature cannot live, or if they live they cannot multiply. The power of the tissues to resist their intrusions varies much in different individuals, and in the same individuals at different times. This is shown by the fact that before the introduction of antiseptics when no other precaution than mere washing of the hands with soap and water was taken to prevent infection only some women who had been exposed to the risk of, say, cadaveric poisoning look pyrexia fever. Again the site of absorption of the poison being some solution of continuity in the genital passage, such absorption is not likely to occur when the wounds have begun to heal and are protected by granulation.
Granulations. Further, a previous weak state of health by retarding the process of repair predisposes to infection.

The Sources of Infection next claim attention as affording indications for preventive treatment.

1. The possibility of the disease being carried to living women from the dissecting and post-mortem room has been already noticed as among the earliest ascertained facts in the search for the causes of puerperal fever, and has been so often confirmed that it hardly requires further mention. The nature of the necrotic poison is much better known now than when Semmelweis first published his results. We know that a poison is developed in the body after death but that its virulence varies in strength, also that the poison is peculiarly adapted for transmission by inoculation. Thus it is believed that the danger is greatest from the direction of those who have died of infectious or contagious complaints. Further, the poison carried from
the post-mortem or dissecting room is not necessarily the cadaveric poison, but may be that of the symptoms from which the subject of necropsy died... (Ramsay, 1873) and periperal fever itself is in this way specially liable to give rise to further cases of the disease. Thus Ramdorah says: "I am quite convinced that the contagious properties of periperal diseases are rendered even more penetrating and subtle after death; and that articles of clothing impregnated with the effluvium arising from opening the body of a woman who has died of a contagious periperal malady are the direct instruments of its further propagation." (ibid.)

The discharge from any septic wound or necrotic tissue of whatever kind may also prove a source of infection. In this way periperal fever has been caused by discharge from carious teeth, necrosis of bone (e.g., osteomyelitis). ii. Another possible source of infection are the various gymnastics, especially Scurf, Encephalitis, and Diphtheria; but the question whether
Whether these diseases can originate puerperal fever has given rise to much controversy. Dr. Braxton Hicks, Professor Playfair and many other authorities believe that the contagion of erysipelas and other septic diseases may produce a form of disease indistinguishable from ordinary puerperal sepsis. Scafinia, and presenting none of the characteristic features of the specific complaint from which the contagion was derived. (Playfair Med. p. 345).

It is in connection with erysipelas and Scafinia, which clinical experience has shown involve the greatest risk to puerperal women, that most of the investigations have been made. Winkelsum up the clinical proofs of the connection between erysipelas and puerperal fever as follows: "By far the most frequent starting point (57% of all cases) of puerperal erysipelas are the genitalia and nails. From here it usually extends in 7–14 days to the trunk and then to the limbs and head, but there are also endemics in which no
not a single case of facial eczepelas occurs. Primiparous are attacked by
purpurous eczepelas 3—4 times as
often as multiparous. Lying in women
with wounds of the vulvas are especially
predicated. Those who have passed
through severe operative deliveries
are attacked much more often
than others. According to my experience
the children of lying-in women suffering
from eczepelas always remain free
from the disease, but among 14
cases Vincent observed it twice in
children. The larger the number of
severe cases in an endemic of eczepelas
the greater is the number of cases
of eczepelas; it ranges then from five
to thirteen percent" (Witsiz, p. 59).

In support of the above conclusion Winkler
in 1886 recorded a case in which a patient was
admitted to the Munich Hospital with a
parametric abscess from which the character-
istic eczepelasous micrococci of Fehlheim
were obtained; a pure cultivation was made,
and a rabbit inoculated with Eczepelas. A
primiparous
Principum was delivered in the course of the next few days and became infected. She had a vulvar wound which began to ulcerate. Erysipelas of the uterus appeared. She rapidly got worse with metastasis, peritonitis, and double pleurisy. She died on the twelfth day. A pure cultivation was obtained from the blood of the right ventricle, which communicated erysipelas to rabbits in whose bodies the characteristic micrococci were found (Med. Annal. 1888 p. 21). This case goes to prove not that puerperal fever is always erysipelas but that erysipelas is merely one form of puerperal fever. The risk of infection appears to be greatest from suppuring phlegmonous erysipelas the discharge of which may contaminate hands or clothes. It is this form of infection which as I shall have occasion to show was the cause of the disease in form of my cases.

Dr. Longstaff in his "Studies in Statistics" shows curves which represent the percentage above or below the mean of deaths from various
Various diseases from 1865 to 1880, and it appears from these that erysipelas and periperal fever vary very much in accordance with the prevalence of measles fever. He shows however, that there is no causal connection between erysipelas and periperal fever, and that the identity of the curves is due rather to atmospheric conditions, as, for instance, the amount of annual rainfall to which they bear a ratio which is inversely proportional to their prevalence.

The relation of scarlatina to periperal fever has been most reassuringly treated by W. J. Borel in a series of papers read before the Obstetrical Society of London in 1888. The periperal women appear to be specially liable to scarlatina, a point that contrasts markedly with the immunity enjoyed by pregnant women. Thus, in the Obstetrical Journal, Vol. IV, Olmanau writing on periperal scarlatina states that among 141 cases of scarlatina occurring in women before and after delivery only 7 were recorded during pregnancy as against 134 within
within one week after labour. Dorall arrives at the conclusion that infection from sepsis always produces sepsis in the puerperal woman, but that the resulting disease may be of three kinds: (1) Ordinary sepsis with all the usual symptoms such as sore throat or (2) Ordinary sepsis associated with secondary lesions such as are produced by septic poisoning e.g. peritonitis, cellulitis, pyaemia or (3) Sepsis in which the ordinary symptoms are absent and the secondary lesions alone present. This last hypothesis is not supported by any evidence of his own. In regard to the second it is important to note that recent research has shown that various germs are generally present in the blood in sepsis and may give rise to secondary lesions such as sloughing of the throat, etc. This taken in connection with the wounds in the genital organs usually found in dying women helps to explain many cases.
where the scarlatinal poison has been said to give rise to puerperal fever. In this connection Prof. Watson Cheyne in his second lecture on "Suppurative Septic Diseases" (Bull. Med. ImmuM March 3, 1888) says: "Klepper found Streptococcus pyogenes or an organism indistinguishable from it, in the aphthous membrane in cases of scarlatina of some throat, and he observed that in some cases these organisms penetrated from the surface into the body. Fränkel and Trendenburg have also investigated the organisms of scarlet fever, and have found that the Streptococcus pyogenes is present in the blood in a considerable number of cases without however apparently giving rise to any suppuration or septic infection."

I have myself seen one case of scarlet fever, two of measles, and numerous cases of influenza, occurring in women shortly after childbirth, but both the scarlatina and measles ran an extremely mild course, not being marked by any symptoms...
symptom of a septic nature, whatever. The cases of influenza were much more severe. They occurred in connection with the epidemic of 1891, and one was followed by croupous pneu-
monia of the right lung, from which, however, the patient ultimately recovered. In none of them were there any evidences of septicemia.

iii. Exposure to sewer gas due to de-
ficient sanitary arrangements has been
recorded as a cause of septic fever
in many instances. Prof. Mayfair in "Deficient sanitation as a cause of
puerperal disease" (Cancer Feb. 5th, 1877) has
described several cases illustrating this
variety of infection, and these have become
almost classical. His cases afford in-
contestable proof that sewer gas can origin-
at a disease in puerperal women nothing
different from an ordinary and rapidly
progressing septicemia, the symptoms
disappearing on the patient's removal
to a wholesome atmosphere. In this
connection the following is of interest:
from
from W. J. G. Thomas's "Abortion and its Treatment." "Three or four years ago I was summoned to see, in consultation with an excellent and well-informed physician, a graduate of this College, a wealthy lady residing in a flourishing town some ten miles from New-York. She had had a perfectly normal labour, but was now suffering from a decided attack of pernicious fever. I questioned the physician thoroughly on every point likely to afford a clue to the origin of the trouble, but for a long time my efforts at finding out the source of the trouble were entirely unsuccessful. The doctor was constantly attending cases of midwifery, but had not had a single one in which there were any signs of sepsis or sepsicaemia. In attending the lady he had taken the greatest care in regard to the condition of his clothing, his hands, and his instruments. The nurse was also thoroughly aseptic, and every possible precaution that he could think of was taken. Believing as I do
do that purulent septicaemia is due to a special poison communicated from some septic source, I began to feel very much puzzled. I inquired where the water-closet was, and found that it adjoined the lying-in chamber, and that it was one of the old-fashioned pan closets still, unfortunately, so much in vogue. In speaking of these, Colonel Waring, one of our best authorities in matters of sanitation says, "Everything looks like a whitewashed sepulchre above, and below there is a chamber of horrors." I lifted the pan and a horrible odour assailed my nostrils. On further inquiry I found that the patient had been in labour for twelve hours, and that during this time she had had three or four passages each time going into the water-closet for the purpose. Now, at last, light began to break in upon the etiology of the case. Just think of the position in the act of defecation or urination. With the downward pressure brought to bear, the labia are rolled out and the
the vaginal walls widely unfolded, up from below, to come in contact with all this unfolded surface of mucus membranes, rise the emanations from the closed loaing with septic germs. Here was a woman in the pains of labour suffering herself directly to the poison of the newer pipe, for probably at least five minutes at a time several times during the process of labour."

A case somewhat analogous occurred in my own practice two years ago. Mrs. F., a primipara in this town aged 32, was delivered after a labour of ten hours without operative interference. All went well for four days when fever of a low type developed. There was no pain, and no smell with the lochia. Still, fear the vagina and then the uterus were repeatedly washed out with weak perchorbic solution, but without effect. Every precaution had been taken at the labour and afterwards as to cleanliness and the use of antisepsies, and I was
was beginning to think that autoptic
infection was not so obstinate as many
imagined. However, the patient was
growing weak, and I determined to try
the effect of a change of atmosphere.
She was accordingly removed to another
room, and on the following day the
temperature had fallen somewhat.
Three days afterwards it was normal
and did not again rise. The explana-
tion was found in the water-closet,
which I discovered in a cupboard
outside the door of the room first
occupied. It was not exactly a
pan-closet but what is known as a
"long-hopper" and was in a very foul
state. The patient made a long but
uninterrupted recovery.

There is abundant evidence
that sewer gas is often the source of
typhoid fever and various septic
diseases, and it has been shown
by Cunningham & others, to contain
large numbers of germs—although
recently some remarkable statements
To the contrary have been made.
Septicaemia is not due to any one particular microbe but to various different forms, and these have been found in various matters which are ordinarily present in sewers, such as 'pieces, putrid water, purulent spume etc.' It follows therefore that some of the germs in sewer gas are those which give rise to septicaemia, and if this gas be allowed to contaminate nappies, sponges, or other articles in use during lying-in, there is a direct road, through the lochia and damaged tissues, to general infection of the system.

iv. It is well known that purpuric fever may be carried from one patient to another by a third person, and the possibility of such a source of infection has attracted much attention as affording an explanation of the endemic prevalence of the disease in certain lying-in hospitals. In this way medical men, midwives and nurses
nurses have acted as the carriers of infection, and there are a large number of well-authenticated observations bearing on this point both in private and hospital practice.

The cases which are afforded from my own practice are I think sufficient to illustrate this without reference to the many well-known examples to be found in all the textbooks.

**Prophylaxis**

In the case of puerperal fever the value of the old maxim "Prevention is better than cure" cannot be over-estimated. In the more virulent forms of the disease, where a self-multiplied poison is introduced into the system no antidote is as yet known to us except such as would at the same time destroy the life of the patient. This fact taken in conjunction with the teaching of modern science that in the great majority of instances the disease may be prevented entirely by the adoption of prophylactic measures.
measures, cannot fail to emphasise the responsibility of anyone taking charge of even the most ordinary case of labour; and there is nothing so well calculated to further heighten this sense of responsibility as the witnessing of a serious case of maternal fever.

Few things in obstetric literature are more remarkable than the reduction of the mortality in lying-in hospitals since the introduction of antisepsics. Before the adaptation of bacteriian measures to obstetric practice the mortality in lying-in hospitals had been so great that many authorities had considered such institutions to be a danger rather than an advantage to the community. W. Groun in a paper read before the Ed. Obst. Soc. Nov 1880 says, "In our own hospital I have gone over the books from its foundation to the present time, and I find that out of a total of 10,043 women who have been delivered in
in it, almost 2 per cent or nearly 1 in 50 have died, so that the Edinburgh Maternity shows a death rate sufficiently high to attract our attention. There is perhaps a sort of melancholy satisfaction to be derived from a consideration of the fact that we have not as yet reached a mortality to be compared with that attained by some of the German and French hospitals, when a mortality of 1 in 11 is by no means uncommon." Further, he says, that notwithstanding the fact that a separate maternity had been provided and the hospital thoroughly and repeatedly disinfected the deaths from puerperal fever continued. Yet during the period from May 1879 when the New Maternity, Alice Salvesen memorial Hospital was opened to the date of the paper, in which time the intern mortality from puerperal fever had been 1 in 32, there had not been recorded a single case of death from a similar cause in the same practice.
of the charity, although the births were
doubly amounting to 625 and the
general death-rate only 1 in 153.

Since the date mentioned antiseptic
measures have been strictly en-
forced in the Edinburgh Maternity,
with the happiest results.

To further illustrate this take the
case of the Maternité at Paris (the
separate obstetric department of the Hotel
Dieu) whose puerperal fever raged year after
year. In 1827, of 2788 lying-in women
252 died; in 1831 of 2907, 236 died. In February
1831, six to seven women were delivered in
one day all of whom died (Schrader, Mid.1832).
The following table from Dr. Cullingworth's paper
in Med. Journ Oct 1855 shows the progress
made during three decades:

<table>
<thead>
<tr>
<th>Date</th>
<th>Mortality per 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1827-29</td>
<td>93</td>
</tr>
<tr>
<td>1830-31</td>
<td>23</td>
</tr>
<tr>
<td>1832-37</td>
<td>11</td>
</tr>
</tbody>
</table>

The fall in the death-rate during the second
period was due to the introduction of
improved hygienic measures, while
The further reduction in the last six years was the result of the adoption of strict antiseptic precautions.

Similar results were obtained without exception whenever antiseptic principles were introduced (Playfair, mid-1877).

The cause of these outbreaks in hospitals was thought by many to be a form of micrometeora generated by the aggregation of septic patients, as has been already indicated. But viewed in the light of the results obtained by modern antiseptic methods it is evident that they were dependent on the direct transmission of septic matter from one patient to another.

The rules prescribed in the various hospitals for the application of antiseptics have varied greatly in detail, but there is little doubt that the transformation by which lying-in hospitals from being the most dangerous have been rendered the safest places for expectant women is
is due to the use of perchloride of mercury as an antiseptic. It is the most powerful and reliable of all known disinfectants, and as long ago as 1844 Billroth showed that septic microbes were destroyed by a solution of 1 in 9600. The spores of anthrax being exceedingly tenacious of life have been used as a test for various antisepptic solutions, and in 1881 Koch stated that a solution of carbolic 1 in 20 required two days to destroy them, and yet a momentary contact with a solution of corrosive sublimate, 1 in 5000, killed them immediately. The solution of corrosive used in practice must be of such a strength that 1 in 5000 of free sublimate shall remain in solution after it is in contact with the tissues, and this condition is found to be fulfilled by using a solution of 1 in 1000 (Montg. Med. Chronic Vol. 11 p. 355 1884).

Before going further it may be well
Well to consider the objects aimed at in prophylaxis. These are broadly three in number:

1. To prevent the conveyance of septic material to the puerperal woman on sheets, sponges or on the hands and instruments of the attendant and midwife; and to see that the sanitary arrangement of the house are in order.

2. To render the soil unsuitable for the growth of organisms by preventing the retention of any material which may decompose or form a nidus for septic micrococci entering the tissues, and to this end to secure firm contraction of the uterus after delivery of the placenta.

3. To promote the health of the women before labour by all possible means so that she may be in a fit state to resist any morbid process.

The difficulty in regard the first point can only be overcome by the energetic and intelligent use of antiseptic agents.
agents, and if this be the case it is surely only logical and right to employ that substance which has been proved on all hands to be the most efficient. Various antiseptics have been at different times employed, e.g. Salicylic acid in solution, Chlorinated water, Iodine solution, and Condylium fluid, but the two that have given the best results are Carabolic acid and corrosive sublimate. The former was usually employed in lying-in hospitals after the introduction of more stringent antiseptic measures some fifteen or twenty years ago, but it was found that marked benefit followed the substitution for it of perchloride solution, by means of which not only the actual mortality, but also all cases of septic illness have been reduced to vanishing point. (Nor all Antiseptics in Medicine.) This brilliant result has been achieved only by the most rigorous discipline in every detail of the antiseptic method, and by an intelligent appreciation.
Appreciation by everyone concerned, nurses as well as doctors, of each measure employed and the consequences of its neglect. It is here that hospital patients have the advantage over those of private practice. The latter too often have to be content with what they can get in the way of nursing, and, from what I have seen of so-called midwives and nurses since I started practice in this town, it is a matter of little surprise that the mortality from puerperal fever in private practice throughout the country is increasing instead of diminishing (see the Registrar-General's reports from 1847 to 1892). Some of these women are not only destitute of all knowledge as to antiseptics but are ignorant of the most elementary details of personal cleanliness! Yet they are run after and employed even by people who should know better, the doctor as
as a rule, only being called in when operative interference is required after the mischief has been done, but in time to receive all the blame if the case becomes septic. I may mention in passing that one of the objectionable practices of these women is the employment of cord as a lubricant, and I have had more than once to remove from the lying-in room a lump of this stuff which had become putrid, and had been told that this was what the midwife had used for her fingers. This state of matters will continue till it receives a temporary check from the occurrence of a series of cases of trophoblast such as I shall refer to in the cases appended, but it cannot be properly remedied till these ignorant women are entirely prohibited from attending cases.

The measure which before all others in antiseptic midwifery requires attention
Attention is to ensure perfect cleanliness of the hands of attendant, of the instruments employed, and of everything likely to be brought in contact with the genital passages. To this end nails must be kept short, and before touching the patient genitalia, the hands must be washed with soap and hot water with the help of a nailbrush, and then rinsed carefully in a solution of corrosive sublimate, 1 in 1000. It is important to note that a small quantity of either soap or blood will throw down mercury from the sublimate solution and render it inert. Bright metallic instruments should be disinfected by first polishing and then steeping in boiling water, or in 1 in 20 carbolic wash. In this connection it may be mentioned that the benzoide of mercury has the advantage over the perchloride that it does not attack metallic surfaces. Moreover, it is said to have even twice
or chlora the germicidal power of the
bichloride, and also not precipitate
albumen by reason of the potassic
iodide solvent of it having the
property of not coagulating the al-
buminous elements of the blood, as
shown by the retardation of fibrin-
ation. Its use has been strenuously
advocated by Dr. Lingworth who pub-
lished a book upon it in 1888 (J. L. Lingworth)
but I have no practical knowledge
of its employment.

Authorities differ considerably on
the question of the necessity of the routine
use of the sublimate douche. In
the Boston Maternity Hospital found
that of 427 patients who had not
been examined or treated with cur-
rosive sublimate perovas or confinement
only 7 had a rise of temperature.
(Atlas f. Gynäkologie vol. XXXIX p. 149) and this
agrees with the well known fact
that strict labors are seldom followed
by sepsicaemia. Where a digital
examination has been made the douche
is required, and I am in the habit of using it especially if the opportunity has not been given of employing antiseptic precautions at the labour. If the patient should have undergone an examination without these, as in cases attended in the first instance by midwives, the douche is absolutely necessary. For this purpose it seems preferable to use a strong antiseptic solution once for all (as the peracidi in 20% rather than run the risk of having to repeat the process; and in order to avoid the danger of mercurialism to follow it up with a douche of some weak antiseptic solution such as boric acid or iodium solution.

As a lubricant for fingers and instruments Carbolic Glycerine or vaselin oil (in 20) is most satisfactory. As an antiseptic Carbolic oil is iner. At one time as a lubricant supposed to possess antiseptic properties the employment of Carbolic oil was almost general. And yet it has all along
along been recognised that in cases of carbolic poisoning, olive oil proves one of the best antidotes. Moreover, many years ago Koch of Berlin showed that anthrax spores are capable of living and developing after having been immersed in carbolised oil (1 in 20) for four months. (Kossw Angewissi. Mediz, p. 24.)

The unique nature and action of the perineum wounds make the task of maintaining a rigidly aseptic condition of the parts one of peculiar difficulty. The vagina and uterus practically form a sinus through which the discharge from the placental wound flows, passing over on its way to the exterior any lacerations that may be present in the cervix, vagina, or perineum. The genital canal having been douched with antiseptic solution and clots etc. removed, it is requisite to employ something analogous to a surgical dressing, with the object not only of absorbing the discharges but of preventing the possibility of subsequent infection.
infection. This is best accomplished by the use of absorbent gauze which is changed frequently and destroyed after having been used. An antiseptic may be combined with these, but it is not necessary provided that the pads be renewed before the discharge saturates them. The ordinary napkin gets soaked too soon to be of much use, and should there be a perineal tear an antiseptic dressing is a matter of necessity.

Another antiseptic precaution is to thoroughly clean out the rectum at the commencement of labour, and so avoid the extrusion of faeces by the pressure of the advancing head. Such a discharge of faeces would, of course, render any previous disinfection of the parts useless.

A point of practical importance which may be considered under prophylaxis is the question whether a practitioner who has under his charge
Change cases of erysipelas or other
symptomatic diseases should give up
attendance on midwifery cases. Here
again the efficacy of antiseptics is
exemplified for most authorities
are agreed that it is comparatively
easy so to disinfect the person as to
exclude the possibility of carrying in-
fecion, and in this way avoid the
necessity of having to allow an interval
to elapse between contacts with infection
and attendance at a confinement, a
plan which at the best is not to be
depended on. To take an example
in the summer of 1873, in the absence of
any partner, I was sent for to apply for
caps in a case of labour some six
miles from town. It so happened
that the same morning I had opened
a large abscess in the groin of
a lad with scarlet fever, the
pus of which had become pectised,
and had had occasion to introduce
two fingers into the abscess cavity
to break down adhesions. Having
throughly
thoroughly cleaned and disinfected the hands by means of first soap hot water, nailbrush, and then a solution of perchloride of mercury 1 in 1000.

I went to the labour. The woman secured without the temperature ever having gone beyond 99° and this case is only one of many similar instances. Recently I have been following Dr. Haynes' advice, and trying to accustom myself as much as possible to use the left hand only in touching patients suffering from infectious diseases, as that which is not used, under ordinary circumstances, in obstetric manipulations.

Vesical sepucraria itself appears to be the most dangerous source of contagion, and is the one that puts the value of antiseptics to the most severe test. Even then, however, a scrupulous attention to detail is all that is required in order to prevent such contagion from being carried...
carried to fresh cases. I am able to quote instances to prove this, in
Cailletiini, with several of the cases
whose history is given at the end.
The continued mortality from
praecox fever in private practice
is due, according to Heger, to middlesex
interference, and it is proposed to
replace vaginal as far as possible
by abdominal examination. (McKinnon,
1873, p. 265). This method I have tried
in several simple cases and found
to be very satisfactory, but it is
evident that it is only applicable
to those cases which do not require
operative interference. The whole
continuity, however, of modern mid-
wife is to avoid internal examin-
ation as much as possible.

The second indication in pro-
phylaxis is to render the soil un-
suitable for the growth of organisms,
and this may be done by proper
attention to the second and third stages
of labour, and by care in the removal
of all debris, clots etc. as soon as the labour is completed. It is fortunate that the latter object is accomplished by the same means as are employed to destroy germs that may have been accidentally introduced into the genital canal by the antiseptic douche. It is very difficult to completely sterilize the vagina by any antiseptic treatment, but it is agreed that the micro-organisms commonly present in it do no harm unless substances capable of decomposition are retained. There is no specific bacterium which causes sepsis, and when we consider that germs are present everywhere and that the most harmless of these may, under suitable conditions of environment, become modified in such a way that their power as disease-producing agents becomes vastly increased, also that such a favourable environment may be furnished by
by the maternal tissues and discharges, it is evident that, if we can so act on these as to render them unsuitable for the growth of germs, we have a means as potent for asepsis as the most powerful germicidal solution. The removal of clots, debris, etc., might doubtless be accomplished by a douche of plain warm water, but such a procedure might simply mean inoculating the patient with septic germs. Even Conde's fluid might have the same result unless used in large quantities, owing to its becoming reduced and consequently inert on contact with oxidisable matter. It seems desirable therefore to use a strong antisepctic, as corrosive sublimate (1 in 2000) in order at once to remove debris and clots, and to disinfect the passages. In cases where the patient has a source of mischief within herself e.g. gonorrhoea, it is advisable
It is advisable to continue the douching regularly. The solution that I have found most convenient is the one supplied by Messrs. Duncan Duckworth & Co. (at the suggestion of Dr. Berry-Hunt) in a special bottle, containing five ounces, with a capped glass stopper of one drachm capacity. It is of such strength that one cup added to four tumblers of water (one quart) gives a solution 1 in 2000. The strong solution contains 5 3/4 grains of Corrosive sublimate and 3 grains of corrosive sublimate and 3 grains of corrosive sublimate (to prevent the precipitation of the mercury) to a drachm of water. Dr. Hart recommends it to be ordered thus:

(W. M. Rees, Medical History, vol. 1, p. 168)

\[
\text{VX Lotion Hysteria, Perchlor. Fr.}
\]

(5 3/4 gr. of Hydrarg. Perchlor. and 3 gr. of Corrosive sublimate to 1 drachm of water)

The preparation is put in a special bottle with capped stopper.

Sig. Poison for external use.

The judicious management of the second stage of labour has much to
to do with the prevention of puerperal fever. The necessity for avoiding as far as possible frequent internal examination of the patient has already been indicated. Again, a prolonged second stage is injurious from the pressure exerted on the maternal parts lowering their vitality, and consequently their power to resist the invasions of germs. In order to obviate this, instrumental interference may be called for, and provided that due care be exercised, involves much less risk than waiting. Should a laceration unfortunately occur it must be carefully closed on the termination of labour and treated aseptically.

The third stage of labour claims attention in regard to securing the proper emptying and firm contraction of the uterine. I am convinced that the less one interferes with this stage of labour the better for the patient. It is always a misfortune
misfortune when as in cases of adherent placenta or other, complicating the introduction of the hand into the uterus becomes necessary. These cases however usually call for more minute care in disinfection, and such having been carried out are rarely followed by serious septic mischief. When there has been any inertia during labour or serious loss of blood afterward, I am in the habit of giving 3/4 ext. Ergot. Bij as a matter of routine. This practice keeps the uterus pretty hard, and usually results in the expulsion of all clots etc. within twenty-four hours.

Other measures for prophylaxis as inspection of the sanitary arrangements of the house and remedying these if found defective, also attention to the patient’s health before labour, are to be carried out on general principles, and do not call for special mention here.
Treatment.
It is a matter for regret that in the case of puerperal fever, as so often occurs in medicine, the question of treatment cannot yet be satisfactorily answered. When once infective organisms have entered the tissues of a woman they are beyond our reach; and this gives one a sense of helplessness, on taking charge of a well-marked case of the disease, which the knowledge that it might by certain simple precautions have been prevented in all probability, and the more so because in the milder forms of the disorder and indeed in all cases except those where the quantity of the poison introduced into the system at the outset is excessive, the treatment is by no means so powerless as has frequently been asserted.
The indications are simple enough.
enough, viz.

(1) To prevent if possible the entrance of any more septic organisms or other poisonous matter (poisons) into the circulation or tissues.

(2) To support in every way the strength of the patient in order that she may be enabled to tolerate the presence of the poison when once absorbed, until it either is eliminated from the system or loses its power.

In what follows I shall more particularly refer only to those methods of treatment with which I have practical acquaintance.

Local Treatment. The value of vaginal irrigation in puerperal pyrexia is recognized by all authorities, and this should certainly be carried out if it has not previously been done, on the first indication of fever, and repeated twice or thrice a day or more frequently, according to the severity
of the case. The solution used should be either corrosive sublimate (1 in 2000) or carbolic acid (1 in 40), the strength of the solution being considerably reduced or a weaker antiseptic employed on each occasion before withdrawing the tube in order to avoid the risk of poisoning. The advantage of the vaginal douche is obvious when it is considered that in the majority of cases the starting point of infection is some laceration in the perineum, vagina or cervix, and that with the patient in the ordinary dorsal position in bed the discharges are dammed-up in the vagina by the perineum, and escape only by a process of overflow. Perineal ulcers should be looked for at the vaginal orifice, and I have found them in cases where the feelings of the patient gave no hint of their existence. I found that brushing with a solution
solution of Carabolic acid in glycerine (g. Lx ad 3j) was soon followed by im-
provement in the condition of these
ulcers, although in one case (Case 1)
they proved very intractable, yielding
ultimately to equal parts of tinct.
Serrii freschior and tinct. iod.
The question of factor of the lochia
is one that has given rise at various
times to considerable controversy
in regard to intra-uterine eruption.
In the "Prenatal" for May 4, 1871, H. B. Noyes sums
up the matter as follows:—"(1) That septic
infection may take place without factor;
(2) That factor may occur without repair or
fever; (3) That factor is more frequent in cases
where the tissues are bruised and torn, and
therefore in primiparas, and in operation
cases; (4) That factor is generally (though
not invariably) associated with fever,
but in each case the fever almost invariably
precedes the factor by a considerable interval;
(5) That the presence or absence of factor
is a very uncertain guide to the presence
or absence of repair; (6) That in any case
as Peter invariably indicates a failure to maintain local asepsis, vigorous antiseptic measures should be at once instituted; (7) That the vulva and vagina should be first cleaned, and only when this has been done and where local necessity exists should the cleansing be extended to the interior of the uterus.

Intrauterine irrigation is a mode of treatment that should be resorted to with considerable caution, as the following passage quoted from "Ruska's Midwifery," p. 693 shows: "Hunger reports an epidemical fever in Gersdorff's clinic brought about by the employment of intrauterine irrigations during which the mortality rose to 3.8 per cent. With the abolition of the irrigations the mortality sank to .39 per cent. In 1880 Fischel introduced the so-called permanent irrigations into the Prague Maternity. Of 880 patients 9 died of sepsis. The irrigations were then prohibited. The following
following year of 933 patients only
2 died from the same cause, and
in 1881 of 521 patients there were no
deaths from sepsis. Fehling who limited
the use of intrauterine injections to
special momentary indications, re-
ported in 1880, 415 confinements without
a single death."

Intrauterine injection is indicated
whenever fever follows; (1) the retention
of a part of the placenta or blood-
clot; (2) an adherent placenta;
(3) prolonged operations within the
uterus; (4) expulsion of a putrid
fetus, or (5) when there is an op-
fensive discharge which vaginal
injections do not check.

For intrauterine use the perchloride of
mercury should be employed in solution
of a strength of 1 in 2000 or 1 in 4000,
by means of an ordinary douche can.
And the uterine tube should be of
glass. The one I use is the habit of
using is grooved in order to permit
of the ready escape of the fluid from the
the cure. A sudden fall of temperature after such irrigation points to suppression as the cause of the fever. If however the temperature still remains high, it is not advisable to continue it, although vaginal injections should be persevered with regularly.

**General Treatment.**

(a) **Diet**—This does not as a rule differ from what is required in the treatment of other fevers, although it frequently requires modification to meet special circumstances, and the most common of these is diarrhea and vomiting. In a disease characterized by so marked a tendency to profusion of the vital forces, much depends on sustaining the patient's strength by small quantities of liquid nourishment given at short intervals. Alcohol is of great service in most cases, being specially indicated by a rapid and thready pulse, low delirium, cyanosis, and sweating. It may be given usually in the form of brandy. Ice cream is a valuable substitute.
substitute for this should vomiting be troublesome. Care should be taken to give the alcohol in its stimulant doses, e.g. for brandy, a tablespoonful every two or three hours. Gin, whisky, rum are also recommended.

Persistent vomiting may necessitate the use of nutrient enemata.

(b) Medicine - The formidable array of remedies which have been used in the treatment of this disorder serves to show that no single substance can be depended on to produce a uniformly good effect. It may be that some means of counteracting the septic state of the blood will yet be found, but in the present state of our knowledge, each case must be treated on its own merits.

The drug with which all things considered I got the best result was undoubtedly quinine, given at the outset while the fever was high in ten grain doses every three or four hours.
Lows. Later, when the pulse became weaker, quinine in reduced doses and combined with digitalis as in the following mixture I found extremely serviceable:

K Quin. Sulph. fL-LXXX
Tinct. Digitalis fL
R. Sulph. Sol. fL
Ag. at fL

Sip. 3f to 2f every hour.

It usually effected a permanent slowing of the heart, and gastric disturbance owing to it was trifling.

Sulphate of Sodium and Antifebrin were also tried, with only temporary benefit.

In certain cases antipyretics failed, and then reliance must be placed in the external application of cold. I employed this in the form of the ice cap, and cloths wrung out of iced water and applied to the abdomen, and to the spine from the nape of the neck downwards. I found this...
this direct application of cold to the skin a powerful agent in soothing delirium and reducing temperature. Nevertheless, in spite of all one can do, a case too often goes from bad to worse, the temperature keeps in check temporarily by treatment rises higher, higher, and the patient dies either in a state of maniacal excitement or coma.

In conclusion, and in order again to emphasize the importance of prophylaxis in this disease, I cannot do better than borrow from Dr. Cushingworth's paper before referred to the eloquent words of Oliver Wendell Holmes, who, upwards of fifty years ago in America acted as pioneer in support of the doctrine of the contagiousness of puerperal fever, and who, referring to certain similar catastrophes which had been, by a man so celebrated as Meigs, put down to a special intervention of Providence write as follows:—"It is as a lesson rather
rather than as a reproach that I call up the memory of these inseparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused. They have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or requished it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the street has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law,
law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril.

God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly.

**Case I** (Mrs. M. Robertson 37 Dough Road)

I was called to this case at 7 a.m. on the 12th Jan. 1893. The woman, a multipara, Sect. 37, had been in labour for about twenty-four hours, a midwife being in attendance. The patient's health had been poor for some time previously, a good deal of cough having been complained of. I found the uterus in a state of inertia, the pains having ceased. The cervix was widely dilated, and
and the head well within the womb. The parts felt hot and dry to the touch, having evidently been fingered a good deal. I succeeded with the aid of the forceps in extracting a healthy male child, without any injury to the perineum or other soft parts. The placenta came away readily but the uterus did not contract well, there being a considerble loss of blood. ⅔ of the

Esse sq. were given, a vaginal dozene of Perchloride of Mercury, i in 200, used, and when the patient was left she was feeling pretty comfortable.

6 p.m. The cough has been rather troublesome. It is dry, tickling, and has prevented sleep. Temp. 99°. Pulse 86. Keep in to


Hyosce. Jxxx. Ag. Chlorid. ad ½

Jan. 13th 10.30 a.m. Has slept four hours. Cough much easier, nothing abnormal to be detected in the chest. Complains of pains shooting through body especially towards the left side. Tocher free.

T 102.2 P 80 R 18

1 hour. Rheumatic pains continue.

T 100 P 86 R 22
Jan 14th 10 a.m. Has slept little owing to the cough. A few moist sounds detected towards base of right lung, at which point complains of a stitch.

T 100.6  P 90 (Strong)  R 20

Ordered a cinchonised 4 night side, and the following mixture: 1/2 U.S. Quinine. 3/4

Manganese 3/8 th 1/4 th 3/5 th Ag Camph tr. A tablespoonful in water every three hours.

6:30 P.M. says that right side feels better. The cough has become drier.

T 100°  R 38  R 32

Dinets moved with castor oil.

Jan 15th 10:15 a.m. Patient has had a good night's rest and feels considerably stronger.

T 99°  P 90  R 20

Jan 16th 8 a.m. Patient has had a rigor.

T 103°  P 134  R 28


7 a.m.

T 102.6  P 140  R 38

Gave gelatin 1/16 to be repeated in six hours.
Case I (Continued)

if bowels not moved - vaginal douche to be used three daily.

Jan 17th 9 am. Lochia with both stopped - complains of pain in lower part of abdomen and urinary.

T 103.5° P 150 R 34

On using douche, great tenderness complained of. This was overcome by the use of cocaine jelly on tube. Examination of parts revealed a small ulcer at the posterior commissure, covered with a yellowish exudation. This was touched with glycerine and carbolic acid, and a mixture containing Quinine & Digitalis (1/4 of the former and 1/4 of 2 Digitalis every three hours) was prescribed.

T 104.2° P 160 R 40

Ordered patient to be sponged with tepid water & vinegar, and 1/2 of brandy in 36 cold water every two hours, also ice to suck.

9:30 pm.

T 104° P about 160 R 46

Bowels have moved fairly - Gushing Continued.
Jan. 18th

10 a.m.

T 102  P 120  R 40

Patient says she feels a little better—has perspired very freely.

2:30 p.m.

T 102.7  P 124  R 36

Increased Brandy to 3 fl. every two hours.

10 p.m.

T 103.9  P 130  R 40

Ulcer has been touched twice a day with Eye of Batsotic acid, but is not healing and another one has made its appearance—

Changed the application to equal parts of Turp. Tini Parthenol and Tini Iode.

Jan. 19th

12 noon

T 101.5  P 130  R 36

Great tenderness on using douche, and cocaine still necessary.

8 p.m.

T 101.2  P 126  R 30

Nothing the deceased now in chest.

Jan. 20th

T 103  P 180  R 40

Has passed a restless night—been slightly delirious. Ordered Sponging every three hours.
Case I (Continued)

Hours. Quinine and digitals were used as follows:

Quin. Sulf. 3/4
Acid. Sulf. Oct. 3/4
Digit. 3/4

8:30 A.M.

T 102
P 120
R 36

Has been perspiring profusely. Bowels moved twice since morning rather freely.

Jan. 21st 9 A.M.

T 99
P 120 (irregular)
R 36

Patient drowsy and excessively weak. Increased dose of brandy to three dessert spoons
every two hours. Appears more healthy.

8 P.M.

T 100
P 120
R 32

Character of pulse improved.

Jan. 22nd

T 98
P 112
R 26

From this date patient gradually improved. A slight evening rise of temperature occurred for five days. The quinine medication was continued in diminished doses till the temperature had been normal for a week.
Case II (Mrs. Morton, North Hess)

Aug. 15th, 1893—This patient, a mulatto, aged 37, was delivered of a six months fetus about 4 p.m. The placenta was adherent at one part, and had to be removed in pieces. This was done as carefully as possible after thorough disinfection of the hand and arm. An intravenous douche was afterwards given of phenol chloride, 1 in 3000.

9 a.m.

T 100° P 86 R 18

Aug. 16th

T 98.2 P 84 R 16

Aug. 17th, 11 a.m.

T 100°5 P 88 R 18

Precribed: Antifebrin Gr. iv every 4 hours, for four doses, and Oel. Nocin 3 fl. 50 to towels.

Aug. 18th, 12 noon.

T 99.4 P 86 R 20

Applied some Ect. Bellad. to uterus on lint to benefit. Patient feels quite well. Everything went on very favourably, the temperature remaining normal after this, and I ceased visiting on the 21st.

Aug. 31st, 6 p.m. Was summoned suddenly because...
Case II

(Continued)

because patient was said to be "dying." Found her sitting up in bed gasping for breath. The temperature was 105.3, pulse almost imperceptible, estimata at 170, respiration 50. There was a history of slight fever with the leishon for three days, but this attack had developed in the course of two hours without warning. Ordered 3 p. Brandy every two hours, brandy essence smith to be given alternately. Patient to be sponged with tepid water at every hour's end. Prescribed as follows-

\[ \text{X Quin. Sulph. fr. 50} \]
\[ \text{Xid Sulphur. bif. 30} \]
\[ \text{Jujus. Bigard. 311} \]
\[ \text{fy. at 9} \] 
\[ \text{Pet. 25 Fr. Mix.} \]

Sig. A cupful in water every two hours—

\[ 8.30 \text{ p.m.} \]

Used dull wire curet to interior of uterus and then gave into uterus douche of corrosive sublimate by means of a ground glass tube using a solution, in 2000, and following it up by a flow of weak tincture boric—

\[ \text{Sept 1st 10 a.m.} \]

On visiting patient this morning found marked improvement.

\[ T 98.8 \quad P 90 \quad R 18 \]
Case II (Continued)

Bacto-1% digitalis solution to be given on half the
former dose every 6 hours. Lachesis still foetid, known repeated vaginal douches.

8 P.M.

T 98.4 P 88 R 20

Gave vaginal douche of Bonda's fluid.

This patient made a good recovery, although the lochia gave evidence of de-
composition for several days. The vaginal douche was continued twice a day for a
week. The case was evidently one of puru septicemia due to the lochia
having become foetid. Whether there had been a small piece of placenta
left behind I cannot say, as it was not observed on curettage, but I think
it probable. The most remarkable
point was the delay in the development
of symptoms.

Case III (Mrs. Pamela, Mountall Place)

This was patient's fourth labour, and is the
first of a series of four cases of post-
partum fever, all attended by a Certain mid-
wife, Mrs. I. I was not present at
this
this labour, which took place on May 22nd, 1894, but was asked by patients attendant on the following day to give something to stop him from vomiting. I prescribed small doses of Methylhydratone and Hydroy cyanic acids, which had the desired effect.

On the 25th I was called in and found the patient in a state of high fever, panting respiration, palmar flush, anxious expression of countenance, and troubled with hiccup.

T 106  P 140  R 46

The thorax were offensive. I immediately gave an intravenous dose of Carroine sublimated, and sulphate of Quinin in five grain doses every three hours.

May 26th.

The vomited several of the quinin powder. Complains of pain over the abdomen which is augmented by a troublesome cough.

T 102  P 130  R 40

Prescribed the following:

- 1x Volani: Citrate: 5/10 h
- 1x Abs. Mili: 2/10 h
- Vin. Antimon.
- Glaucine potassium ca 3/10
- Tyroxbolin

Sig. 2/50 on a 7th. 3/10 on a 11th.
Case III
(Continued)

May 28th
T 102.7   P 130   R 32
Condition of patient almost unaltered. Repeated mixture of Pot. Chrom. etc.

May 29th
T 102   P 126   R 32
Has had a severe attack of diarrhoea during the night, for which gave a few
mixture of Pot. Chrom. etc.

May 30th 10 a.m.
T 103   P 120   R 45
Has passed a restless night. Bistoury still continues with modified activity.
Ordered Quin. Suf. for every three hours.

8 p.m
T 103.6   P 145   R 38
Pain increasing in lower part of abdomen. Cough has abated. Prescribed XXV
of Hypophosphiter (a preparation of the same strength as Laudanum) every three hours.

May 31st 12 noon
T 102   P 130   R 40
Has had a better night. Prescribed mixture of Quin. & Diphos as in last case.
June 1st

T 102  P 130  R 40

Diarrhoea still very troublesome. Pulse weak + thready. Ordered: 3 fl. oz. brandy every two hours, and

A. Bismuth Subnit 3 gr.
Acet. Galli
Pulv. Quin. Cr. unit

Sig. One every third hour till diarrhoea checked.

June 2nd

T 101  P 120  R 36

Has had a rigor during the night. On using the douche this morning I discovered a large swelling towards the left side of the uterus—could not detect fluctuation nevertheless decided to open it. This was done, and about 300 c.c. of foul smelling pus and blood came away, the corrosive douche being used afterwards.
The night temperature was 99. Quinina quinhas was repeated.

June 3rd

Doucheing continued. Discharge still scanty. The temperature is now normal and the pulse stronger. This patient's recovery
recovery was fairly rapid. It is noteworthy that before this illness she had been greatly troubled with pelvic pain, which afterwards did not recur, the uteros having become fixed by adhesions.

**Case IV**
(Helen Stout, High Street)

June 11th 1894. I was sent for at 4 a.m. to this girl, a primipara aged 23. Remaining because the midwife (W.—) could not effect delivery. Forceps had well down in pelvis, patient having been in labour about 36 hours. Forceps were applied and in about half an hour the child was born alive. A slight tear in the perineum was united by a single suture, and the vagina douches with petrol ether solution (1 in 500).

Saw patient again in the afternoon when the temperature was 100°, pulse 96.

A considerable amount of blood had been discharged in large clots. Prescribed the following:

- 1/2 Eph. Ergotina
- 3½ Eph. Aconitum
- 3½ Eph. Chlor. m/v
- Ayer’s Turkey Compound in water every 2 hours.

June 12th at 10 a.m. Been very restless.
Case IV (Continued)

all night. Bowels were moved several times. Patient had a rigor.

T 102  P120  R34

Respiration shallow. Pulse in almost stopped but no fever or pain. Prescribed
Quin. Sulph. 4/5 every 3 hours. Washed out uterus with corrosive solution
1 in 2000 followed by a saturated hot solution of Boracic acid.

3 p.m.

T 103.6  P140  R50

Ordered 3 oz. brandy every 2 hours
and patient to be changed with hot water and vinegar. Vigine douche three
times a day.

9:30 p.m.

T 102  P140  R45

Has perceived a great deal of relief.

June 19th. 10:45 a.m.

Patient has not slept. Been slightly delirious. Complains of no pain.

T 103.9  P145  R40

Ordered Quin. Sulph. 4/5 every 3 hours.

Let us nourishment freely.
9 P.M. Has had three loose motions of the bowels since morning, and complains of slight pain in abdomen.

T 104  P 15.0  R 36

Gave Morphine Suppository, 50/-
June 14th, 10.30 A.M.

Has been wildly delirious all night, having frequently attempted to get out of bed. Is now lying on back, tossing the arms, and singing a snatch of hymns.

T 104.3  P 160  R 44

Pulse slightly irregular.

Became quiet after a little oil having today sponged all over.

2.30 P.M.

T 103  P 166  R 50

Ordered a single dose of Antipyrexin, 1/12th.

9.30 P.M.

Has had a turn of profuse sweats, and passed two very loose motions. Tongue dry and brown. Has been sucking ice all day, and taking the brandy. Says she is feeling better, but wants to sit up a little.
June 15th 7 A.M.

T 104.8
P 170 (impose) R 50

Delirious and recognises no one. Seeks
links about and is with difficulty kept
in bed. Feet cold.

The temperature continued high
all day notwithstanding the Continue
application of ice on cloths to head,
spine, and abdomen.

June 16th 4 A.M.

Patient died with a temperature of
108.4.

In suddenness of onset, rapidity of course
only about four days, and fulness of
symptoms, this case resembles those termed
by French writers "Puerperal," which
signifies literally "thunder-striking, striking".

Case V

Mr. Alfred Smith, Commercial Road,

This woman, aged 24, was attended by the
same midwife as cases III and IV, this
being her second pregnancy.

Labour began about 3 a.m. 13th Feb 1875
and lasted only three hours. Pretty severe
afterpains were complained of during the
day
day, and these continued more or less seriously the following day also.
Feb 17th 3 p.m.

Was called in to see patient and found her suffering from retention of urine, the fundus of the bladder being as high as the umbilicus. There was no fever with the lachia.

T 102   P 130   R 30

This patient had all the appearance of a person suffering from pneumonia, hectic flush on cheeks, panting respiration etc.

On examination the lungs were found quite free from disease.

The vagina was washed out with solution of permanganate of potash, and the cervix drawn off.

Prescribed Quin. Sulf. Grt. 1/2 tab. every 3 hours.
Feb 18th 10 a.m.

T 99   P 120   R 24

Again drew off wat. after washing out vagina as before. Pass into uterine dose of corrosive sublimate, 1 in 2000. Americin continued.

8 p.m.
T 101   P 140   R 34
Thursday, February 19th, 11 am.

Temperature: 99° P 134 R 32

Patient has passed water. Pulse shows signs of weakness. Ordered half hour's rest every 3 hours, and prescribed mixture of Quinine Hesperis - Vaginal douche as before.

9 pm.

Temperature: 104° P 136 R 32

Ordered to draw off water a gain. There being some smell with the lochia, I used the dist. wine carafe to infuse of return, and then the corrosive douche. Ordered rapid changing of the bag to lead.

February 20th, 11 am.

Temperature: 102.2° P 125 R 33

No significant change in symptoms during the night. Drew off water and found a considerable amount of mucus in the urine.
Case VII (Continued)

Considerable swelling about the urethra and vaginal roof. Bowels show signs of loosening but have only been moved once since yesterday 8.30 a.m.

Patient has been slightly delirious occasionally during the afternoon.

T 103° P 124 R 26

Bowels have been moved six times since morning with considerable pain. Prescribed the following powders:

1. Bismuth Subnitrate 3x
2. Acid. Galliæ

Pulse reaches 64 to 74 per min.

Dig. pot. every third or fourth hour till diarrhea stop.

Ice bag to head, and cold pack applied.

Temperature fell to 100° in half an hour.

Feb 21st 10.15 a.m.

T 99°6 P 110 R 30

Still sweating profusely. But has got some sleep and feels more comfortable.

6.30 p.m.

Summoned hurriedly, because patient was said to have taken a bad turn. She dying. Found
her suffering from accumulations of gas in the bowels which made breathing difficult & painful — also troublesome

T 104.4  P 130  R 40
Prescribed Belladonna Subcutante 1 1/2  1 1/2
two to three hours, and a 1/2 grain Morphine
suppository

8:15 p.m.

T 101.8  P 130  R 40

Bowel not moving as frequently —

Feb 22nd  11:15 a.m.

T 102.6  P 120  R 30

Feels very ill & restless — got no sleep
during the night. The bowels are
moving at intervals but without pain,
and are not causing her any distress.
Pain vaginal douche as usual. Swelling
before referred to has almost disappeared
8.30 p.m.

T 104.2  P 132  R 32

Also very weak & thirsty. Patient is quite
collestred, but somethis deep owing
to the evacuation. Abdomen slightly
sympanies.
Feb 23rd 11.15 a.m.

T 102  P 116  R 32

Says she feels a little better. Pulse however has not improved, it almost disappears at each inspiration. No mucus seen at all. First sound of heart very faint. Face flushed. Has vomited twice during night a greenish coloured fluid. Bowels still moving occasionally but without pain.

8.15 a.m.

T 105  P 130  R 34

Has vomited twice within the last hour. Ordered 3/4 ice champagne every hour instead of the brandy. Also increased dose of quinine to 2 grm with 150 cc digitalis every 3 hours. This mixture was retained by the stomach. Applied cloths warm but of ice cold water to skin, abdomen, and head till temperature fell to 101.

Feb 24th 1 a.m.

T 104.6  P 132  R 30

Pulse very weak and irregular. Patient evidently sinking fast. Face flushed, burning hot. Mild delirium. Feet...
Case V

Feet Cold.

6:45 am.
T 105.5
Pulse imperceptible
at wrist.
R 34

7:30 am.
T 106.7
R 38

8:30 am.
T 107.3
R 36

11:30 am.
Died with a temperature of 108.2°

Case VI
(Mr. Black Freefield)

This patient, a multipara, aged 33, was confined on the 15th February 1845. The child was born about noon and the labor was quite easy. She was attended by the midwife Mr. 3. She went straight from the last case to this one. All went well till the morning of the 21st. Then she had a rigor which was said to begin in her feet and pass upwards. It was accompanied by severe headache and she vomited twice. I saw her the same morning.

T 103.6
P 150
R 31

Cocking almost stopped travelling badly.
Prescribed antifebrin on account of the headache.
Case VI

Headache as follows—

17 March 1931

Dos a Jule 1/4

Signs were of this hour.

Employed the intravenous douche of corrosin in 2000 followed by weak tincty solution.

Feb 22nd 10.15 am.

T 101.5 P 120 R 20

Feels a great deal better. No smell with the lochia.

8 pm.

T 104.6 P 140 R 30

Employed intravenous douche as before. Ordered Quein Sulph for lochia every six hours.

Feb 23rd 10.30 am.

T 98.6 P 116 R 20

Complains of great weakness and difficulty in breathing. No perspiration freely. Lochia very scanty. Mammary secretion increased. Bowels moved as to one, pretty loose. Nashed Queinin Chloride.

7.45 pm.

T 100.5 P 104 R 26

Feels easier. Skins moist. Bowels have been moved twice since morning.

Gave intravenous douche as before.
Case VII

Quinine 0.5 to be taken at 9 p.m. and at 3 a.m.

Feb. 24th 11.30 a.m.
T 102.9 P 112 R 28

Fevers moved over since last night.
Ordered 0.5 gr. Quinine Sulph every 4 hours.
Complains of a troublesome Cough, and a stitch at the back of the left shoulder.
8.30 p.m.
T 102.8 P 124 R 32

Pulse weak, collapsing. First vagina and then uterine douche brought away some shreds.
Feb. 25th 10.45 a.m.
T 101.2 P 110 R 20

Cough complained of is much easier.
4.30 p.m.
T 101.3 P 112 R 28

Douches as last night. Continuing to take Quinine.
8.45 p.m.
T 101.5 P 108 R 24

February 26th 10.45 a.m.
T 99 P 96 R 24

Still no lochial. Patient going on well. Very
Case 11

Continue

Very deaf

8.30 p.m.

T 101  P 94  R 32

Slight greyish leucia appeared - no smell.

Feb 27th  10.45 a.m.

T 100  P 100  R 22

Bowels still rather loose.

8 p.m.

T 101.7  P 108  R 28

On giving vaginal douche, found a considerable amount of swelling in vaginal roof around uterus. It seems to be due to edema - no fluctuation could be made out.

Feb 28th  10.30 a.m.

T 99  P 100  R 24

Leucia still almost absent - no smell.

8 p.m.

T 99  P 96  R 24

Bowels moved about 12 noon - feels much better.

March 1st  10.30 a.m.

T 98.8  P 90  R 20

Has slept well - bowels have been moved again.
Case 51

8:15 p.m.

T 100.1  P 90  R 22

Oximine continued in dose of gr. 1/2 every 4 hours.

March 2nd 10:30 a.m.

T 100.5  P 94  R 20

8 p.m.

T 101.6  P 108  R 28

Some pain below umbilicus towards left side also on urination.

Gave infrahumanin in drug, contained in 1 c.c.

March 3rd 11 a.m.

T 98  P 96  R 20

Pain almost gone.

9:30 p.m.

T 100.6  P 106  R 24

Oximine increased to gr. viii every 4 hours.

March 4th 10:30 a.m.

T 96.7  P 96  R 22

Pain gone. Has passed a good night although she feels very weak.

From this date the case went on favourably.

It is my firm belief that in view of the source of infection in this case, the corrosive sublimate injections saved
saved this woman's life, and that in such cases the sooner the first injection is given after the onset of the disease the more likely is the ultimate result to be favourable.

In the first of these six cases I was unable to trace the origin of the disease. The second was evidently due to decomposition of the lochia, probably from retention of a small portion of the placenta, and was not a case of truly injective fever at all.

In the remaining four there is little room for doubt that the infection was carried by the midwife. On making enquiries I discovered that her husband had died in the Spring of 1894 of phlegmonous erysipelas of the thigh, which had discharged an enormous quantity of matter. No proper disinfection of clothes, bedding, etc. had been attempted. Case III was the first confinement she attended afterwards. This case recovered. The next was Case IV, which proved fatal.
She then left the town for upwards of three months, and on returning, the very next case she attended died, in five days, of what was said to be inflammation of the lungs. It is unnecessary to mention here that to outward appearance the resemblance between a case of pneumonia and one of severe purpura gives so very striking cases. V and W followed, and then the authorities stepped in and prevented her from practicing further.