Thesis

on

Influenza Fever

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On

Perpetual Fever

The annals of medicine afford ample evidence that the
disease, now to be considered, is of no recent origin, but has been
known for centuries past as shown by the writings of Hip-
ocrates and the early authors on medicine. The writings of
the earlier authors, however, on this subject, are short and
imperfect, and hence it is probable that the disease pre-
dented itself in a much less formidable aspect than it has
come to assume in later times. The disease received different
names according to the opinion each author held in re-
gard to its nature. It was not till the beginning of last
century that the term "Perpetual Fever" was applied to it
a term which has ever since been in general use among the
different writers on the disease, and although others as
"Hysterical Fever," "Child-bed Fever," &c. have been used by some,
yet perhaps none is less liable to objection than the one here
As far as can be learned of the history of this disease, there is no authentic proof that it appeared as an epidemic prior to the year 1746 when it made its appearance in Paris, and swept off many by its inwomen, especially in hospitals, secured by one of those attacked recovering. Since that period the disease has spread over Europe, often occurring epidemically, and with a destructiveness to human life rivaling the most malignant and pestilential diseases. Though the epidemic of 1746 appears to be the first which has been accurately described, yet it is probable that it occurred epidemically long prior to this date; for it is stated that in the year 1664 a "prodigious number" of women died at the Hotel Dieu, after confinement. The first appearance of the disease in an epidemic form in Britain occurred in London in 1768, and in the same year it appeared at Aberdeen; from these cities it spread throughout the different towns and ghettos hospitals in the Kingdom, occurring every year or two and frequently with great fatality and destructiveness to human life. The disease from its very first appearance in an epidemic
form has been very dangerous, especially in Lyon hospitals where it has always been most fatal. This in the first epidemic in Paris it is stated that in the Hôtel Dieu of 20 women affected by the disease in February of that year scarcely one recovered; death taking place between the 5th and 17th day. The following is the account given of the symptoms and progress of this epidemic by M. Malbran. The disease, he says, usually commenced with a diarrhea; the uterus became dry, hard, and painful; it was swollen, and the lochia had not their ordinary course; the women experienced pain in the loins particularly in the situation of the broad ligaments; the abdomen was tense, and to all these symptoms were sometimes joined pain of the head, and sometimes cough. On opening the bodies, curdled milk was found on the surface of the intestines, a milky serous fluid in the hypogastrum; a similar fluid was found in the thorax of certain women; and when the lungs were divided they discharged a milky or putrid lymph. The stomach, the intestines, the uterus, when carefully examined
appeared to have been inflamed. According to the report of the Physicians, there escaped clots on opening the vessels of this organ.

The first epidemic in Ireland is thus described by Dr. Joseph Clarke. "He first visited the lying-in Hospital of Dublin in the year 1767 about ten years after it was open for the reception of patients. From the 1st December till the end of May, of 360 women delivered 16 died. In 1774 it again appeared and of 280 delivered 13 died. It again appeared in 1784 and in a month, of 114 plicated with the disease 7 died, and in the following year (1785) it made its appearance, according to Dr. Clark, for the fourth time in Dublin and of 17 attacked by the fever 14 died.

In Edinburgh the disease first appeared in 1773 in the lying-in wards of the Royal Infirmary and Professor Young has given the following account of it. He says, "it began about the end of February, when almost every woman, as soon as she was delivered, or perhaps 24 hours afterwards, was seized with it, and all of them died although every method was used to cure the disorder"
The disease has frequently prevailed epidemically in most of the cities in Scotland, since its first appearance in Aberdeen in 1760 to the present time.

There is one circumstance in regard to the various epidemics which is worthy of observation—that in some years the disease is much more fatal than in others, and these are generally when it is most extensively prevalent. Thus in 1813-14 & 15 the disease was epidemic in many of the cities in Britain and its fatality was very great. In the Epidemic which occurred in Dublin in the first mentioned year, it prevailed to an unprecedented extent, and it is stated that Emperor Franz visited Edinburgh a second time in 1814-15 and of 9 who were taken ill only one recovered. But by far the most fatal epidemics were those that occurred from 1819 till 1822, and this seems to be the time also in which the disease was most widely diffused. In Paris, Mr. Moore states, that at the Maternité in 1814-20 about one half of those attacked died. In the Dublin lying in Hospital during the same period it was prevalent and Dr. Douglas says concerning it I had not an opportunity of witnessing.
the Epidemic in the winter of 1819-20 but I believe it exceeded in duration and fatality any that ever occurred within the British dominions." In the same year (1819) the disease was epidemic also at Vienna and 43 women died of it; In the epidemic of 1821-22 in Edinburgh it is stated by Dr. Campbell that it raged not only in the lying-in Hospital but in every part of the city, and of 79 who were in various degrees of violence affected by it, 22 died. He further states that: "During the above period, the Smallpox was very fatal at Stirling, and other country towns in Glasgow particularly it committed great ravages"

But there are not only particular years in which the disease is more apt to occur than others, but also there seems to be certain seasons of the year in which it is more apt to show itself than others. In general, says Dr. Ferguson, the cold months are most fatal. No death has occurred in the months of July or the general lying-in hospital. The most favourable months is Paris and Geneva is June, and August in Scotland, where the summers is about three weeks later than in England." In all the different
Epidemics that have prevailed, it is the colder months of the year
in which its injurious effects are most witnessed, and especially
if the atmosphere be moist, or alternations of heat and
cold with moisture. The result of all these who have been
much of the disease conforms this as satisfactorily shown by
the reports of Dodge, Armstrong, Hey, Campbell, Bolton.

Another observation which has been often made by medi-
cal men is, the connection that appears between Peri-
partal Fever and lying in Hospitals. It is a fact which has been
often noticed and cannot be overlooked that the disease
is very fatal in these institutions, and frequently origin-
ates in them; although it is by no means confined to
these alone, for we have numerous cases recorded, as oc-
curring in private practice, altogether independent of
Hospital influence. Such cases however are much more
rare in their occurrence, Dr. Clarke having practiced 14
years, and only 6 Cases of the disease are described by him
and 3 of these were doubtful. And many others, extensively
been engaged in obstetric practice, have wit-
nessed a similar occurrence.
Why Hospitals are more frequently visited by this disease than occurs in private practice, why it should be so fatal as it often is in these institutions it is perhaps not very easy to explain, unless it be that the crowding of the lying-in wards, which was formerly too common, especially in France (where two or three were often put into one bed), had some effect in propagating the disease by contagion.

That this had a considerable influence in spreading the malady seems most probable from the circumstance, that in those hospitals where such practices existed, since these pernicious customs have been abandoned and more attention paid to ventilation, the frightful mortality formerly so common, has greatly diminished.

Although this disease may and undoubtedly often is aggravated and spread in hospitals, by inattention to ventilation and other prophylactic measures, as well as by various states of the Constitution of the patient, yet at the same time, it is probable that it is subject to the same laws, as other epidemic diseases, which seem to occur at certain periods altogether independent of
local influence, and some even in opposition to human intercourse. Thus cholera seems to march irrespective of and often in direct opposition to the greatest amount of human traffic. From this it would appear that we are not to look upon hospitals as being the sources of General Fever, but they may (much less frequently now known than formerly) be the means of extending the disease unless proper precautionary means are adopted for preventing it.

These observations of a general nature having been stated in regard to the disease, the next topic that naturally falls to be considered is its Pathology.

In entering on this part of the subject, the first question itself to the mind is, What is the nature of General Fever? No subject in the whole range of physic has received more of the attention of medical men and strange to say, there is none in which a greater difference and discrepancy of opinion has existed. These discrepancies have arisen chiefly from each viewing the form that came under his own observation.
as the only type of the disease, and too frequently also the symptoms, and effects of the disease have been looked on as the very malady itself; and such facts have been adduced from these data as gain greatest support to the various preconceived ideas each held in regard to its true nature.

Another source of controversy has arisen from the effect of remedies, and the different and even opposite plans of treatment adopted. One class of practitioners recommending bloodletting and the anti-phlogistic treatment as the only means of subsisting the disease. A second class adopting the opposite giving stimulants and opiates, and reprehending all other plans as injurious and fatal. And there is a third party who maintain, that employ what remedies you please, the disease will take its course, and in the end prove fatal.

Amid such a chaos of conflicting opinions, exhibited by the most distinguished authorities, it is somewhat difficult to ascertain the real nature of the disease.

The various opinions formerly held in regard to the nature
of Dangers. Fever may be classed under two heads. One class of practitioners maintaining it to be an uterine, or putrid fever. Lui gensis. A second party still more earnestly contending and declaring it to be a local inflammation and the fever symptomatic and depending upon the local affection. Of those who held the former opinion were Dr. Hamilton of Edinburgh, Mr. White of Manchester and many others also held the same views. Of those who adopted the latter opinion, many might be mentioned from the first author on the healing art down to the present time. Since however some one who viewed the disease as essentially a local inflammation. There has been great diversity of opinion in regard to the seat of the inflammation. Some as Cydenham, Boéhme, Denman and others regarding it as inflammation of the uterus, others with Hulme Deake’s viewing it rather as inflammation of the omentum and intestines. And there is a third party who consider it to be inflammation of the peritoneum, connected with exsanguination, or of an exsanguilating nature. This was the opinion of Gordon.
Hey. Campbell and various others.

The above views relative to the nature of Puerperal Fever, which continued to recur so long, have now been generally abandoned by the latest and most distinguished Pathologists; although some Physicians still continue to hold the opinion, that the disease is essentially of local origin, as for instance Dr. R. Lee, who says that "in inflammation of the uterus and its appendages, must be considered as essentially the cause of all the distinctive febrile affections which follow parturition; and that the various forms they assume, inflammatory, congestive, and typhoid, will in great measure be found to depend on whether the serous, the muscular, or the venous tissue of the organ has become affected." Many have adopted this view, and some who formerly held that view now abandoned it as Dr. Churchill, who in the earlier editions of his work "On the Diseases of Women" adopted it but in the last edition he states,"that whilst agreeing with him in the presence of local disease, I am bound to state honestly that more extended experience has
led me to believe that the malignant Periperal Fever is something more than a local affection that the Constitutional disease is rather primary than secondary.

From the many careful investigations and experiments that have, of late years, been made, Pathologists have been led to the conclusion, that the circulating fluid is the real seat of the disorder, and that the Cause of the fever is to be found in a vitiation of the blood.

In regard to the various local lesions that are so frequently observed in this disease, there seems good reason for believing that they originate from the same general cause as gives rise to the fever, acting locally. Taking this view of the nature of the disease, we also find an explanation of the fact, that these lesions are most common in the organs most concerned in parturition, in accordance with what seems a general law, that morbid matter is most apt to attack parts which have been previously injured either by disease or mechanical irritation.

Now although pregnancy and parturition are physiological processes, yet they produce (especially parturition)
Either more or less disturbance in the parts concerned, and thus render them more susceptible to the influence of morbid agents; at least this seems to favour the production of that attractive affinity which is supposed to exist between such parts and the materials morbidly existing in the circulation.

Although we believe that the introduction of a poison into the circulation is capable of producing local inflammation, and also as before mentioned, that local affections are rarely wanting; yet there are many cases and these generally the most fatal, where scarcely a vestige or trace of inflammation is to be found after death. Dr. Copeland has remarked—that a most rapidly fatal, and most malignant form of Periperal Fever, is occasionally developed in lying-in hospitals, which is certainly not characterized by uterine phlegitis, nor by purulent collections in the uterus or its appendages, nor even in some cases by peritonitis—the chief lesions often being merely a remarkable alteration of the blood, general laxerability of the tissues, or loss of their...
vital cohesion soon after death, with a dirty, muddy, offensive, and sometimes scanty effusion into the pericardial cavities. Dr. Rigby has made a somewhat similar statement. He says: In many of the worst cases which have come under our notice, there has neither been time nor power sufficient to produce either a symptom or a trace of inflammation.

Why local affections are more rare in those cases in which death is the most frequent and generally the most speedy, it is not easy to explain, as one would be inclined to suppose that it would be exactly the opposite— that most local lesions would be found in such forms of the disease, as are the most fatal. The only solution to this question that seems probable, is that such an amount of the poison has been received into the circulation as not only to destroy the vitality of the blood, but also that "vital force" or attraction by which the inflammatory exudation is poured out— or on the other hand, that such a single effort at reaction is made, by the vital powers,
and so the patient sinks under the deadly influence of the disease.

The depression of the vital powers which has been observed in these cases, has led some to consider the action of the poison as first on the nervous system, and to look upon it as the main instrument in producing these changes subsequently in the blood.

That the effects on the nervous system of this mortal agent, often appear early in the disease, and may be the first of the symptoms that present themselves, is undoubtedly true, but it does not follow from this, as has been stated by Dr. Soothall and others, that the vitiated state of the blood is the secondary and not the primary link in the chain of phenomena, witnessed in the progress of Puerperal Fever. From all the physiological facts with which we are acquainted, and from all the experiments that have been made, in this country and on the continent, the conclusion seems to be, that most, if not all substances which act deleteriously on the nervous system, do so indirectly through the medium of
the circulation. When once the blood is polluted, the brain and nervous system may then come to be affected subsequently by the poison being carried further in the current of the circulation, and also be more limited. I think, with justice, with Dr. Steng, who has well observed that "the blood is the medium that conveys the poison, while the impression on the nerves is merely the effect of the dilated condition of its natural stimulus."

What the specific morbid matter really consists of in Syphilitic Fever, is a question which has never yet been satisfactorily ascertained, any more than has the peculiar morbid agent supposed to be of an animal nature which are the causes of many other maladies which have their origin in the circulation - the so-called "blood diseases" or the "disseminated inflammations" of Mr. Chomel - and the focus which are liable to prevail epidemically, especially in hospitals, and to attack those who have undergone surgical operations.

All that can be said of these different diseases, is
that a specific poison is generated under certain circumstances, this noxious matter finding its way into the circulation from without, is capable of producing the various phenomena which are presented by each; but whether the same poison is generated in each, and the same materia morbi is capable of giving rise to the different diseases, and whether it is even produced within the body without being introduced at extra- or in what the poison consists—whether it be pus or at least some of the elements of pus (for it is not generally believed now that pus as such can enter the circulation) or whether it be some other secretion of an animal nature either combined with pus or independently, and whether the type of the disease depends on a difference in the poison itself or in the degree of its extraction, all these are points which require further research, and a more advanced state of chemistry and histology fully to disclose.

Of the manner in which this noxious material acts on the blood in cases of such a nature very little is known with certainty, and notwithstanding various very elaborate and beautiful theories have been brought for.
ward in order to explain it, yet they are all more or less liable to objection and none of them so satisfactory as could be desired. One of the most recent and at the same time one of the most plausible is that which has lately been brought forward by Lebègue. The manner in which he supposes morgani to act, is, that after being introduced into the body, they enter into chemical union with the tissues, and thereby deprive them of performing those vital functions which are necessary for carrying on the process of assimilation, and the effects of this on the system will be in proportion to the importance of the part or organ affected, so that if the part be one which is essential to life, the result of such a change will be fatal. The mode of action of the animal poisons (with which we have now to do) is considered by this distinguished chemist, to be somewhat different from that of the morgani, and the view he takes of it corresponds very much with that taught centuries ago by Hippocrates and the old humoral pathologists. The phenomenon thar
take place on the introduction of an animal poison are supported by Liebig, to be analogous to what takes place in the process of fermentation. The poison is supposed to act on the blood in the same way as the yeast does on the infusion of malt—yeast being a putrefying substance, its particles consequently, in a state of change or motion, and these coming in contact with the sugar of the wort, causes motion also in its atoms whereby they become arranged in new and simpler forms (namely) alcohol and carbonic acid. But this is not all that takes place for the decomposition of the sugar acts on the gluten of the wort, causing a change in its atoms, whereby it is converted into yeast, and in consequence of this second action taking place, when the process is ended there is a much larger amount of yeast or putrefying gluten, than was present at the commencement. Liebig lays it down as an abstract rule that the same takes place in all fluids under similar circumstances, he says, that "a substance in the act of decomposition ad-
ded to a mixed fluid, in which its constituents are contained, can reproduce itself in that fluid, exactly in the same manner as new yeast is produced, when yeast is added to liquids containing gluten.

Now in applying the above theory it may be asked if this change takes place in other mixed fluids, may it not also take place in the blood? The animal poison may be matter in a state of putrefaction, and being so may act the part of the yeast, and if the blood contain the constituents of this poison (as the gluten of the wort does the yeast) we can conceive how a process analogous to that takes place in fermentation may occur, and thus the poison effect its own reproduction in the blood. If however these ingredients are not present in the blood, or if they have not a certain definite relation to the received poison, then none of these changes are produced, and in this way has been explained how it is that many persons after being exposed to a contagious poison escape being infected by it, while others less exposed, it may be, to contagion.
are attacked and carried off by the disease.

Although the zymotic hypothesis, of supposing certain principles in the blood and their subsequent elimination from the body in the course of the disease, thus enables us to explain many of the phenomena connected with these blood-diseases, as that some are incapable of being infected by the morbid poison, that an individual is capable of being infected at one time and not at another, and that a person when attacked by a contagious disease, is not liable to a return of it during the same epidemic, yet it has perhaps been carried too far, and it may be a question whether the multiplication of these morbid poisons, and the consequent development of disease, may not be due rather to a morbid secretion of a specific nature taking place and its subsequent absorption into the blood.

The mere fact that the contagious principle is present in the blood, and that while there it produces its injurious effects, is not of itself a sufficient proof that any multiplication takes place in that fluid, or that
such is the modus operandi of the poison of Puerperal Fever or of any other animal poisons. From all we yet know on this subject it does not appear that science has yet enabled us fully to understand how the different noxious principles act on the fluids of the living body. Whether these are multiplied in the blood by a process analogous to fermentation, or whether by a noxious secretion of a specific nature taking place.

Although the blood appears to be the seat of the affection, and its deterioration the proximate cause of Puerperal Fever, yet no very accurate experiments have been made in order to ascertain its exact condition in this disease. All the facts that have been stated in regard to it, however, lead to the conclusion that the changes in it from the action of the poison are somewhat similar to those that take place in cases of typhus, Seypipelas and other epidemic diseases which are believed to have their seat in the blood.

One of the most frequent, though by no means invariable
Changes observed in the blood of Recuperal Fever patients is an increase in the fibrous often to twice its normal amount. The corpuscles seem to be diminished in number and there is also a much lower specific gravity of it, and according to some observers the phosphates are considerably increased. Mr. Moore says there is a black precipitate in the blood of a person labouring under the adynamic form of the disease; and also that there is "a peculiar offensive odour occasionally arising from it" as is observed in many other typhoid diseases. There is very generally a dark purple colour observed in the blood, which is probable owing both to a difference in the proportion of solids, and also to the presence of the new morbid matter which exists in it.

The opinions of authors vary considerably in regard to the supposed causes that lead to this alteration of the blood, and the consequent fever. In 1847 an idea was brought forward by Dr. Landgut, that the fever depended on the presence of pus in the blood, whether that pus may have been generated in the blood itself or
gained admission at extra. He considers the opinion (and
justly) that attributes the disease to the condition of
the uterus after labour, as far too exclusive, because he
says, that the germ of the puerperal fever may be de-
veloped previous to the commencement of labour.

After a long series of arguments in support of the view he
has adopted, the conclusions he comes to in regard to it
are the following: "First—that lameness of the internal su-
face of the uterus is not the only cause of puerperal fever
but that this consists in a peculiar constitution of
the blood. Second—that the constitution is indicat-
ed by increase of fibrine. Third—Hyposis of the blood
(or deficiency of fibrine) gives immunity against that
form of the disease which is accompanied by
fibrinous suppuration, but is no safeguard against
the suppurative and typhoid forms of the disease.
Fourth—that the latter may arise from absorption of
pus from the surface and appendages of the uter-
us, or from pus developed primarily in the blood
from correction of fibrine. And Fifth—that the
Thence type may verge into the asthenic during the course of the epidemic. From the above observations of Dr. Scamond it would seem that the poison acts on the fibrine especially, and according as this is increased or diminished the disease assumes the asthenic or asthenic form. If these conclusions be correct (which is somewhat doubtful at least till further proof be adduced in support of them) the mode of treatment would come to be much more obvious and rational than it has hitherto been, as our object would be either to increase or diminish the quantity of fibrine according to the excess or deficiency each case presented.

In regard to the cause of Smallpox Fever it has been common among medical writers on this subject to attribute some influence to the condition of the atmosphere. There is no doubt that we see the disease almost always occurring in particular seasons, especially those are damp and cold with sudden changes to heat, but yet we cannot look on atmospheric influence as acting more than as a predisposing cause. What has been by
some authors, termed the "Epidemic Constitution" of
the air may act in one of two ways, either by increasing
the virulence of the morbid agent or by altering the constitua-
tion of the patient so as to render her more susceptible
of being influenced by the morbid poison. It is most pro-
table that it acts in the latter way, causing such an a-
mount of debility that the system is unable to resist
its deleterious effects. It is most probable that the various
agents which act as predisposing Causes, do so by produc-
ing, more or less debility, so that whatever Causes debili-
ty may be regarded as predisposing to the disease, since
we find difficult labours assigned as a Cause, and
there is no doubt it is so as in such cases the labour is
generally prolonged. It has often been observed that
the disease is more frequent after first than after subse-
quently labours, seemingly in consequence of the longer
duration of the labour. Dr. Joseph Black says "most of
our patients attached in the year 1717 were admitted in
a weakly state, or had tedious and fatiguing labours
and four of those who died were Cases of first child-
The injurious effects of protracted labour in primiparous is still further shown in Dr. Collin's cases - thus of 88 women attacked 44 (exactly one half) occurred in women who had given birth to first children, and 30 of these died. Of 204 cases recorded by Dr. Forster more than 80 were after first labours, and of the deaths one-half were primiparous. Bugés found that one third more were attacked after first than after second labours. The disease has also been noticed to be much more frequent in women who had given birth to males than those who were delivered of females, thus of the cases given by Dr. Collin 161 cases were after males while only 186 were after female births, or rather more than one and a half of the former to one of the latter, and of the frequency of the disease after first as compared with future labours, it occurred in about one in one hundred and thirty of those confined for the first time, and in subsequent labours only one in every two hundred and fifty nine were attacked. All these facts seem to shew that debility, whether it be produced by difficult and protracted labour, or by any
other means that produces depression of the bodily powers seems to predispose to the disease, and hence the effect of cold, damp, the ill-ventilated dwellings of the poor, together with the intemperate habits in which many of them indulge, and the impure air they breathe, all tend not only to favour the production of Sunfever, but also to aggravate it when it happens to occur.

Mental emotions are also to be regarded as frequently acting as very powerful predisposing causes. Dr. Homehill says "Several of the worst cases I have seen were evidently attributable to this cause." Unmarried females are peculiarly liable to the disease, and it would seem that one reason for this is the mental anxiety, which must necessarily agitate their minds in consequence of the situation in which many of them are placed and the prospect of the calamities that lie before them. It may be without a home, without friends, and often without any good prospect of subsistence for themselves and their offspring. "It is well known," says Dr. Armstrong, "that unmarried women do not recover..."
As well as married ones, the mental irritation necessarily attendant upon their situation, considerably increasing the febrile excitement, rendering them extremely restless, and thus augmenting the danger. In reference to the same point Dr. Campbell says: "in the present epidemic we had the most satisfactory proof of the influence of mental agitation in producing or aggravating the disease" - he also states in regard to the fatality of it to unmarried women, that of eight affected by the disease only two recovered - The greater frequency and severity of the disease in lying-in hospitals seems to be partly owing to the depressed state of mind under which many of those admitted into these institutions frequently labour - But the effects of depressing passions of the mind are often witnessed not only in hospitals but also in private practice - a case is mentioned by Dr. Johnstone which occurred in private practice - a patient during her pregnancy was so depressed in mind from thinking that she would die in her lying-in, as her mother had done, that the mortality thus produced, added to the
stimuli of labour, brought on a fever which at length assumed all the characters of the prevailing epidemic, and of this she died in a few days. He mentions another case of a private patient, of a similar kind, whose mental anxiety seems to have been the chief predisposing cause to the disease. The experience of all practitioners on this point goes to prove that the mind exercises a powerful influence in producing puerperal fever, and that those of irritable and hysterical habits, and also those whose constitutions have been previously weakened by depressing passions as love, joy, fear, and disappointment, are exceedingly liable to be attacked by the prevailing epidemic cause.

Uterine phlebitis has been by many looked on as a cause which gives rise to this disease. In those cases of phlebitis which frequently occur after surgical operations, especially in certain persons when it appears as an epidemic, we see symptoms very much resembling those often observed in certain cases of puerperal fever. The strong analogy which the puerperal female bears to a patient who has undergone an operation leads to expect that in both classes of
patients, the abnormal results that follow each, would be very much alike. The inner surface of the uterus after parturition has been compared to an amputated stump, and in many respects the analogy holds good. In the surgical patient there is a wound left by the knife of the surgeon; in the puerperal patient we have a solution of continuity left by the separation of the placenta and the throwing off of the decidua. In both classes of patients there are numerous veins opening on the surface of the wound, and both the external wound made by the surgeon, and the internal obstetric wound require the same process for their healing, and consequently both are liable to the same abnormal deviations and the same constitutional and local effects.

How far phlebitis may act as a cause of puerperal fever it is perhaps difficult to decide. It is probable that it is much more frequently merely a local complication resulting from the more general and specific cause that also gives rise to the fever; while this seems the more likely explanation, I do not mean to deny that phlebitis ever has
any effect in the production of the disease. It is now generally admitted that the local affections and the accompanying fever result from one and the same cause, and it is conceivable that the action of the poison in the first instance was not so powerful as to produce the general impression, but having produced its local effects, it may have become multiplied in quantity, or increased in violence, or so weakened the patient's constitution as that its deleterious effects may be produced on the whole system, and in this way Skeletitis may act as a predisposing cause to the development of the fever.

One other very important question connected with the production of Syphilitic Fever, is its Contagiousness. The many difficulties that present themselves in investigating the communicability (especially in large towns) of most contagious diseases from one individual to another, have often been so great as to prevent a satisfactory conclusion being arrived at as to the contagiousness or non-contagiousness of the disease, but the disease now
under consideration is free from. Many of these difficulties, as a large population has no relation to the question of Contagion, from the peculiar condition of those exposed to its attacks.

The test of the contagious nature of a disease as laid down by Dr. Alison is, "the question he says, "comes to this. Is the circumstance of intercourse with the sick followed by the appearance of the disease in a proportion of Cases so much greater than any other circumstance common to any portion of the inhabitants of the place under observation, as to make it inconceivable that the succession of cases occurring in persons having that intercourse should have been the result of mere chance? If so, the inference is unavoidable that: that intercourse must have acted as a cause of the disease." Now let us apply the above test as thus stated to the disease under consideration, and see if we have proof sufficient to warrant us in concluding that it is contagious.

It has often been observed that the disease occurs
solely, or chiefly in the practice of a single physician, as Dr. Blundell expresses it, "standing behind him, wherever he goes, like his evil genies." When we observe such occurrences taking place, the conclusion seems almost inevitable, that we must regard it as something more than mere chance, and that we should rather consider such coincidences in the relation of cause and effect.

This confinement of the disease to the practice of one individual while others in the same locality and circumstances, alike in all other respects, had not a single case of it, has been noticed by most authors who have written on the subject. Dr. Ball,Strong mentions several instances of its occurrence in the practice of a single individual. Dr. Gordon says that he could tell beforehand what would be the result from knowing by what midwife they were to be delivered, and scarcely in a single instance was his prediction not verified—Dr. Goebel relates the case of a physician who had several deaths in succession and that on changing his clothes, the disease entirely disappeared—Dr. Parson had nine cases, and he says that, "up to this
period, I am not informed that a single case had occurred in the practice of any other physician. Dr. Bondie states that, "in the practice of one gentleman extensively engaged as an obstetrician, nearly every female he has attended in confinement, during several weeks, within the above limits, had been attacked by the fever." In the "d ancestor" for 1848, Dr. King records the case of a surgeon at Medinich who lost sixteen patients from Periperal Fever and was at length compelled to give up practice for some time. During this time no case occurred to any other practitioner, and on his leaving off practice the disease disappeared.

Intimately connected with the above statements is the question of its propagation by medical men and nurses. That such occurrences have taken place much more frequently than they ought cannot be doubted, if we attach any importance to the experience and observation of the ablest obstetricians. Dr. Hamilton, who believed the fever to be one sui generis, is fully convinced that the poison is so virulent that it may be conveyed by a
third party. Dr. Gordon confesses that on several occasions he was the unhappy medium by which the contagion was conveyed. He says, "It is a disgraceful declaration for me to mention, that myself was the means of carrying the infection to a great number of women."

The extension of the disease from one patient to another by contagion is still further shewn in the facts mentioned and by Mr. Robertson of Manchester in a communication published in the London Medical Gazette. A midwife in extensive practice, had in the short space of one month fifteen patients who died of the disease. During the same period no other case of the kind occurred to any of the other midwives, and hence, he concludes, and justly so, "that this midwife was the medium of communicating the malady from one woman to another." In the same paper Mr. R. states that he knew of a practitioner, who after the introduction of a catheter in a woman labouring under the disease, was calld to a case of labour, and this patient was after wards seized with all the symptoms of the fever—
Dr. Copeland was requested by a practitioner to visit a woman labouring under the disease, and on inquiry learned that this was the fifth case that had occurred to him in succession. "I stated," says Dr. O., "that contagion had caused these cases, advised measures to be taken against his being the medium of its transmission, and no others occurred to him for a considerable time."

Nothing has tended more to settle the question of the contagiousness of Small-pox than the result of the practice of those who, after examining the bodies of such as have fallen victims to the disease, have gone immediately after to attend other women in their confinement. Many practitioners who are unwilling to admit the extension of the disease from the living subject, in the manner already stated, yet think that it may be conveyed from those who have died of it. Thus Dr. Campbell says, "unless the practitioner has been engaged in the dissection of the bodies of those who have fallen victims, the disease cannot be conveyed by him from females labouring under it, to those recently delivered." The facts above referred to...
as stated by Dr. Gordon and Mr. Robertson, of attendants con-
veying the contagion from one puerperal patient to another.
Entirely overture the statement of Dr. Campbell, but it is
undoubtedly from the results of post mortem examinations
that the strongest and most palpable proof of the conta-
gious nature of Puerperal Fever is derived. There is no doubt
that practitioners have often in this way, though unconsciously,
propagated the spread of the disease. They may have been
present or assisted at an autopsy, and straightway gone
to a lying-in woman charged with the Cadaveric poison
which is inoculated into the patient, and thus produce
its deleterious effects. In 1821 Dr. Campbell, after attend-
ing the post mortem examination of a woman who had died
d of the disease, was called next morning to a case of labour
requiring instrumental interference, and the woman
was attacked by Puerperal Fever and died. On the same day
that he attended the last patient, he attended another woman
who also died, and afterwards three others shared the same fate.
In 1823, also two other patients whom he had attended after
assisting at a dissection, were attacked by all the symptoms,
of the disease and died in a short time.

Dr. Gough remarks, "A practitioner opened the body of a woman who had died of puerperal fever and continued to wear the same clothes. A lady whom he delivered a few days afterwards was attacked with, and died of a similar case — two more of his lying-in patients, in rapid succession, met with the same fate." Mr. Davies states that he had twelve cases of the disease and during the same period none or very few occurred to neighbouring practitioners, and he could assigns it to no other cause than that he had been present at the post mortem examination of two cases. — Dr. B. Lee in the "Medical Gazette" for 1842 mentions the fact of a practitioner in London in 1831 having three cases of puerperal fever, and he himself had two cases in 1835, and both these occurred after opening the bodies of persons who had died of the disease. — Mr. Robinson in the paper above referred to mentions the fact of a surgeon who after being engaged in the post mortem examination of a body, was called to a woman in labour and in forty-eight hours after, this woman was attacked by the disease. — The opinion of
Dr. Rigby is also of the same effect, he says - "where a practitioner or has been engaged in the post mortem examination of a case of Periperal Fever, we do not hesitate to declare it highly unsafe for him to attend a case of labour for some days afterwards" - Dr. Ramsdell has no doubt of the contagious nature of the disease and says that many such cases of contagion has fallen under his own observation - Some of the more remarkable examples of the communication of this disease have been stated - Dr. Greigman relates a case which occurred in his own practice, where after being present at the examination of the body after death, but did not touch the body, he was called on the evening of the same day, to attend a woman in labour, and he had scarcely anything to do as the labour was nearly terminated - Yet this woman was seized with all the symptoms of periperal fever and died in forty eight hours, the child also finished of dysentery. Dr. Reddie mentions another remarkable case of the same kind, where Dr. Patterson of Edinburgh after simply touching the uterus of a woman who had died of periperal fever, had three cases
Another case has been related which seems not only to show that the disease is contagious, but also that it retains this property for a considerable length of time. It states that Dr. Allen of York, after having had a number of fatal cases of the disease, no more occurred for two months, when his assistant attended a patient in the same jacket that had been in use by Dr. Allen for a whole night at a fever case, and yet notwithstanding the time that had elapsed this woman was seized with the disease.

But the contagious nature of this disease is not only shown by its confinement to the practice of a single physician while others in the same place are entirely free of it, and from the results attending post-mortem examinations, but is also proved by what has been observed in English hospitals, where the disease has committed the greatest ravages. In hospitals where a constant intercourse between the sick and the healthy was permitted and allowed, and where no precautionary measures were adopted, the most fearful mortality has taken place from this disease,
and when means were adopted for the prevention of such intercourse talking, the mortality greatly diminished, thus clearly proving that the disease had been spread and aggravated by contagion. The evil results of non-attendance to precautionary measures, is well illustrated by what took place in the Vienna lying-in hospital. In that institution, out of 21,120 women delivered in a period of 6 years, from 1840 to 1846, 2260 died, and the greater part of these deaths were from puerperal fever. This frightful mortality has since diminished very considerably, so that now there is not one for every person that formerly took place. The decrease in the mortality began from the time that Dr. Semmelweis investigated the circumstances that had given rise to it, and adopted the necessary preventive measures. On inquiry he found that the disease was much more frequent and fatal in that department of the hospital where the students attended than where only the midwives were. The circumstances of both classes of patients were alike in every particular, except that in one of them the women were examined by students who had immediately previously been handling the bodies of those who had died of the disease. On discovery of this Dr. Semmelweis directed all
of them to abstain from handling parts at the Autopsies
and to wash their hands in a solution of chlorine, both be-
fore and after every Vaginal Examination. And the con-
sequence of these precautions being adopted, has been, as
stated above, the diminution in the number of Cases of
the disease, and also in the average mortality.
In the Dublin Lying-in Hospital, Dr. Collins states, that during
the Mastership of Dr. Clarke, smallpox fever made its ap-
pearance as an epidemic, and on the painting and
thorough cleansing of the Hospital, and attending to the
other preventive means, the disease disappeared. In 1829
when Dr. Collins himself had charge of the Hospital, the
disease again appeared. Preventive measures were adopted,
the wards were thoroughly purified, and special care was tak-
en to have the sick separated from the healthy, on their
taking ill, and all intercourse was strictly prohibited.
And the consequence was, that the Malady immediately
subsided and at length entirely disappeared. From the time
this was completed (say Dr. C.) until the termination of my
Mastership in November 1833 we did not lose one patient.
by this disease:-

The contagious propagation of puerperal fever in the London Hospitals has been noticed by Drs. Dods, Ferguson, Rigby and others, and the frightful mortality that has on several occasions taken place must in great measure be attributed to this cause, as the results of the prophylactic measures, in diminishing the mortality strikingly show. The favorable results of proper preventive measures, which have been witnessed in every Hospital where such means have been adopted for preventing its spread by contagion, and the fearful practical lesson taught by the omission of such measures on the part of Medical Men either from prejudice or a total disbelief in the contagiousness of the disease, presents such a mass of overwhelming evidence in favor of its contagious nature, as ought to convince the mind even of the most skeptical. Although the past history of this disease in lying-in Hospitals, thus affords such startling facts in proof of its contagious nature, yet it is to be feared that, notwithstanding these facts, the long list of victims which have been recorded, is yet to be swelled considerably, i.e. the fearful truth of the lesson thereby taught
shall be graven on "the tablets of medical science".

Before leaving the subject of Contagion, another question
intimately connected with it remains to be considered, namely,
Is there any connection between puerperal fever and other epi-
demic diseases, and have we any proof that the materials
capable of producing these, may also give rise to puerperal fever?

That the puerperal fever (observes Dr. Gordon) is of the nature of
suppuration, was supposed by Porteous forty years ago and has
been the opinion of Dr. Young and Home of Edinburgh
since that time. This opinion has not only been that of those
mentioned by Dr. Gordon, but also of many others as Hey, Clarke
Armstrong &c. all of who have remarked the prevalence of
Syphilis, typhus &c. during an epidemic of puerperal fever.

That there is a close analogy is now generally believed, and it
seems probable, as the following facts shew, that puerperal fe-
ver is often produced by the contagion of one or other of these
diseases which have been so frequently observed to be present
at the same time. In the Leeds epidemic, of which an
account has been given by Mr. Hey, he states, that no disease
was so prevalent as to deserve the name of an Epidemic except
erysipelasous inflammations, which prevailed during the whole period of the puerperal fever, and in many cases one of a very malignant kind, inasmuch that I do not recollect ever to have seen more cases of erysipelas than at that time.

Mr. Nest, in his account of the Abingdon epidemic remarks: "I know not of any instance of puerperal fever occurring in any village where there were not cases of erysipelas." This connexion is still further shown by the fact that in many epidemics, nearly all the children of women who died of puerperal fever, perished from erysipelas. Dr. Rigby states that in one epidemic at the General Lying-in Hospital, the child of every woman who died of the disease perished of erysipelas.

But in no way is the connexion so clearly shown as by a reference on the one hand to those cases where puerperal fever seems to have been produced by the contagion of erysipelas, and on the other to such cases of erysipelas as seem to have had their origin in the contagion of puerperal fever.

Mr. Hutchinson relates a case where two surgeons having met in consultation at a case of erysipelas, and on the same evening one of them was called to a woman in labour. In a
short time after delivery she was attacked by puerperal fever
and died. The other surgeon attended three lying-in wom-
men, and the all were seized by the disease and died.
Some interesting facts of a similar kind are stated by Mr.
Leeley in the "Lancet" for 1835. This author states that it made its
appearance in 1831 during an epidemic of erysipelas and that it
presented all the characters of the prevailing epidemic. He says
"its contagiousness was as palpable to us as that of small-pox.
Both were alike insipious to the contagion, and few could resist its effects, who were exposed any length of time to
its influence. Every case of puerperal fever gave rise to several
cases of erysipelas in the nurses and attendants."
In the "Edinburgh Medical and Surgical Journal" for 1839 some
additional facts have been adduced by Mr. Siley, that tend to
strengthen the opinion of the connection of erysipelas and puer-
peral fever. In this paper of Mr. Siley's five cases of puerperal
fever are recorded and in all the attendants were at-
tacked by erysipelas. In the first case the maid and
husband were seized, and the former died of the disease,
while the recovery of the latter was for some time doubtful.
In the case five cases of erysipelas followed, and of these one died. In the third case the child had erysipelas inflammation of the lower half of the body and died in a few days, and Dr. Royle, who had assisted at the post mortem examination was also attacked with erysipelas. In the fourth and fifth cases both children died, of the five women affected only one recovered. In the same paper Mr. Lidier mentions another fact worthy of notice, he says, "An old day patient of the lying-in Hospital was in the habit for some days of waiting upon a relation who was ill with an erysipelatous inflammation of the knee-pink. Upon her return to the hospital, she took charge of a new-born child. Two days afterwards the infant was seized with erysipelas of the abdomen of which it died. On the third or fourth day of delivery the mother was attacked with periperal fever, and she with some others sunk under it. The hospital was quite free from the fever previous to the appearance of erysipelas on the child." The same communication contains a case which occurred to Dr. Alison at the Royal Infirmary of a young woman affected with erysipelas of the mamma, who had miscarried in third...
month of pregnancy. In the course of a few days this woman died with all the symptoms of puerperal fever.

In the same journal (Ed. Med. and Jum) for 1838 in a paper by Mr. Ingleby giving an account of an Epidemic at Birmingham, a number of very interesting cases similar to the above are related. The first series of cases were seven in number and all of them were traced to erysipelas as their origin of the seven women affected with the disease only two recovered. The second series, two in number, occurred to a practitioner after dressing some erysipelas wounds of the arm. One of these women died, and in both cases the nurses were affected, but ultimately recovered. The third series are no less decisive in their seven in number. The first appeared after the opening, by the practitioner who attended them, of an erysipelas abscess. Of the seven only one recovered. In addition to these two other cases are mentioned as having arisen from a similar cause. Mr. Ingleby also states that during the prevalence of erysipelas in the Birmingham General Hospital several women died of puerperal fever and in two instances that the communication of
the disease was almost direct.

In a most important and candid communication read before the Edinburgh Medico-Chirurgical Society, by Dr. Reddie a number of cases of puerperal fever are recorded, and their origin traced, to a patient with erysipelas (arising from a mismanaged bubo) whom Dr. Reddie was attending when the first case of the fever occurred. Although he had several other cases of erysipelas subsequently, and at the same time as the fever cases, yet he seems to think that the first alone had generated the puerperal malady.

Mr. Storr of Doncaster mentions having had a long list of fatal cases of puerperal fever, after dressing a case of gangrenous erysipelas. He also relates that Mr. Reedal of Sheffield had five fatal cases. Mr. Slight of Hull three with a fatal result in all. Mr. Harley of Hull from fatal cases, and Mr. Allen of York a long list of fatal cases, and in all these instances the disease was traced to erysipelas as having originated it.

Mr. Storr also relates a case where the disease appeared
to be produced from a case of gangrene. Three surgeons in the same town were engaged at an autopsy of a person who had died of gangrene, and afterwards each of them had several fatal cases of puerperal fever in rapid succession.

Be have strong grounds also for believing that the contagion of typhus will in a puerperal patient manifest itself in the form of puerperal fever. Dr. Collins has recorded two cases in which the communication seems to have been direct from one patient to another. At the time Dr. Cadell had charge of the Hospital, puerperal fever appeared, and that, on the admission of a woman labouring under typhus of which she died—two women in an adjoining bed were attacked by puerperal fever and both died of the disease. A similar occurrence took place during the Mastership of Dr. Collins himself. A woman with typhus of a bad form was admitted into a ward where three other puerperal women were and remained there some hours before her removal. These three women were all attacked with the
symptoms of puerperal fever, and two of them died.
In addition to this Dr. Collins states that in the years
1826-27 puerperal fever prevailed in the lying-in Hos-

tital, and that during the same period typhus fever
was extremely prevalent in Dublin, and several Cases
occurred in the hospital.

The appearance of puerperal fever during an epi-
demic of typhus has been noticed by Drs. Logothetis and
others in London, and they have observed that the
petechiae which characterized the epidemic typhus, were
also observed in the cases of puerperal fever that occurred
at the same time. Dr. Rigby has given a very instructive
case, which shows the connection between puerperal fever
and typhus, he says. "During the same epidemic to which
we just now alluded, the housemaid of the Hospital, a
healthy young woman, was suddenly seized with sore
throat and violent erysipelas of the head and face, from
which she was saved with great difficulty; her sister
came and attended her, as the nurses were too much
occupied by the number of patients who were ill, just
at the time that she was pronounced out of danger her sister, not feeling well, went home, sickened, and died, in less than three days, of typhus fever. Such facts as the above seem to show that at least there is a strong probability that the contagion of typhus may in a puerperal woman give rise to puerperal fever, and the last case as stated by Dr. Rigby tends also to favour the opinion that puerperal fever may originate typhus.

Another rather singular case is mentioned by Dr. Faddy, physician to the Birmingham lying-in hospital, where puerperal fever appears to have originated from the poison of scarlatina, an epidemic of which was prevalent at the time. A woman had several children affected by this disease, in a severe form, and two or three of them died of it. Her eldest daughter was confined in the same house of her first child, and in a few hours after the birth of the infant, the symptoms of puerperal fever appeared, complicated with an affection of the nose and fauces, similar to that observed in the children with the scarlatina. The fever made rapid progress, and death took place on the third day.
From all the above facts, and they might have been increased, I think we are warranted in concluding not only that puerperal fever may be produced in a new individual by contagion from one ill of the disease, but also that the malleus morbi capable of originating it, may be transmitted in the same way, from persons laboring under other contagious diseases. And the same facts would seem also to justify us in saying, that puerperal fever may give rise to other diseases of a typhoid and epidemic type, and which manifest themselves in an epidemic form in non-puerperal patients.

Seeing then that this fearful malady, is communicable from one patient to another, it becomes the imperative duty of practitioners to avoid being the unhappy medium of its conveyance, and also to see that every necessary precaution be adopted against such a misfortune occurring by others. The disastrous effects of non-attendance to such prophylactic measures have been most eloquently and forcibly shown by Dr. Holmes in a paper published in an American Journal. In concluding this able article, he says,
It is as a lesson, rather than as a reproach, that I call up the
memory of those irreparable 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 cast the helplessness of
infancy into the strangers arms, or bequeathed it, with
less cruelty, the death of its dying parent. This is no tone
deep enough for regret, and no voice loud enough for war-
ning. 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 whenever she
bears her tender burden, or stretches her aching limbs.
The very outcast of the streets has pity upon her piety in de-
gradation when the seal of promised maternity is impressed
upon her. The remorseless vengeance of the law is arrested in
its fall, at a word which reveals this transient claim for mon-
ey. 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
whom she trusts her life, doubly precious at that
eventful period, should hazard it negligently, un-
adviseably or selfishly.

The lesions observed after death in cases of pecu-
nal fever are various, no particular organ or tissue being in
variably found altered in its structure. The appearances
vary in different cases according to the type of the disease,
and probably the variaries are in some measure due to the mode
of infection. In the euthemic form of the disease the appear-
ances are more like those observed in uncomplicated inflammations, while
in the more asthemic form, the changes are much fewer and
not so well marked. In the malignant form the changes
consist chiefly of flabbiness and softness of the tissues of the
body generally. More or less turbid serous, or sero-pulent effusions
with very small flakes of lymph, in some cases, are found in the
various bursa cavities, especially the peritoneum. The fluid ef-
fused has frequently an offensive odour, often a puriform ap-
pearance. In thirty-five fatal cases by Dr. Collins, the chief
lesions were in the abdomen. In seven of the cases there was an
addition to the abdominal affection, thoracic effusion.
In all the cases, effusion, varying however in character and
quantity, was found to have taken place. In twelve it was of a straw-colour and porous; in eighteen two-palpable and impure. Composed of bloody serum of a glutinous character. In these four which had this peculiar effusion, there was no lymph found; although it was found with the others especially in the vicinity of the uterus. In some cases the intestines were glued together, and in almost all of them there was some degree of vascularity of the peritoneum. The uterus in the majority of instances, healthy in some soft and flabby, and in a few matter was found in the sinuses. The ovaries in most of the cases were more or less changed and softened so as to be easily broken down under pressure.

In the ovarian form of the disease, where some effects of reaction have taken place, and where there is more of an inflammatory character presented by it, the structural changes are much more numerous. On opening the abdomen the peritoneum is found to contain, besides considerable quantity of serum, large masses of lymph, which sometimes unite the opposed surfaces together. The effusion has in
Some instances a very offensive odour, and is very irritating.
The peritoneal membrane in this as also in the other type is
often coated with dark streaks and patches, and is also very
easily torn—these changes are most marked in the pelvic pa-
tion—gangrene if it has sometimes been observed.
The uterus is often not only flabby and soft, but also its sub-
stance occasionally infiltrated with purulent matter, and
in some cases abscesses are found in its walls. And in other cases
the veins and sinususes contain a puriform fluid—The in-
ner surface of the organ is most changed in appearance at
the part to which the placenta had been previously at-
tached—in some cases it presents a gangrenous aspect com-
 mencing at the cervix, and from thence spreading over
the entire surface, as observed in the great epidemic at
Vienna in 1819—The fallopian tubes, broad ligaments,
and ovaries are also much altered in structure, in many
cases the ovaries are in several instances considerably en-
larged, and in other cases puriform matter is deposited
in their substance—One ovary is more frequently attacked
than both. The cellular of the pelvis has in some cases
of this disease, been found infiltrated with purulent matter in considerable quantity. The intestines sometimes present few changes, at other inflamed patches, ulcerations, and even erosions and perforations have taken place as noticed by Ducis and others. The changes in the intestinal canal are most marked, where there had been diarrhea during life.

The liver, kidneys, and spleen, are in many cases softened, in some lymph is found effused on their surface, in some also purulent deposits have taken place in the substance of these organs. In many cases the spleen has been found much enlarged. One kidney is more frequently attacked than both, and the one that partakes of the changes is that which is on the same side as the affected ovary.

The changes in the thorax are analogous to those observed in the abdomen. Effusions into the pleurae and pericardium of a whey-like appearance. In some cases the lungs are congested more or less, in others purulent matter is found in their substance. The heart partakes of
the softness of the tissues generally.

The brain and membranes are partly much changed. In some cases however there has been observed effusion in the ventricles, and slight softening of the cerebral substance. In addition to these changes there has in a number of cases been found effusion in the joints, the hip, knee, shoulder, and elbow; effusion also into the muscles especially of the extremities, and in various parts infiltrations of fluid into the cellular tissue. In those cases where these secondary depositions have taken place, similar depositions are found in the uterus, and generally in corpuscles with phlegm.

Destructive inflammation of the eye has also been observed in some cases. Dr. Lecord mentions four cases. Dr. H. Hall five such cases, and in the whole nine, it was the left eye that suffered. Dr. R. Lee relates two cases in which both eyes suffered. These affections of the eyes are found in those cases where unnatural depositions have taken place in other parts of the body.

After death from this disease the body is said to putrefy very rapidly, and it has been affirmed that de-
Composition of the internal parts takes place before the external. It has also been asserted by Drugis that in summer Carboxic acid and hydrogen gas are found in all the different cavities twenty four hours after death.

The symptoms which indicate an attack of purpurial fever are varied in their character, and must be viewed collectively and not individually, as no single one of them, by itself, is sufficient to constitute the disease. The disease may commence a few hours after delivery or it may not then exist for a fortnight after delivery, and the earlier it makes its attack the more formidable in general it is. One of the earliest and often the only symptom that leads the practitioners to suspect the approach of a serious malady, is the unusual rapidity of the pulse, never having been below 100 per minute since the time of delivery. With this quickness of pulse, there will in a short time succeed rigor sometimes pretty smart, at others only amounting to a chilliness. This shivering is soon followed by depression, often complete prostration; thirst, flushed face, pain of head, nausea and vomiting. The intellect is usually clear at first and in some cases remains so, but
in others as the disease advances coma and delirium show them-
selves. In some cases from an early period there is great ir-
ritability of the stomach, and vomiting is apt to form a-
sign of the presence of the disease in such cases. The bowels are
generally constipated at first, but in a few days diarrhea is apt
to come on. The tongue is pale or white at first, but soon be-
comes red and dry, and in some cases it has been observed of
a peculiar scarlet colour, "approaching a purple shade, as if
painted with ink." The urine is passed with pain and
frequently scanty, and has a dark colour. The cerebral and
lachrymal secretions are in some cases unaffected, in others either
diminished or entirely suppressed. In addition to these
general and constitutional signs of the disease, we almost al-
ways find local symptoms indicating the various local
affect ions which are so common in this disorder. Of these
local symptoms pain is perhaps the most common. When
the peritoneum is the seat of the local affection, the pain is of-
ten most excruciating, and the patient lies on her back with
the knees drawn up, to relax the abdominal muscles, and
if possible thereby mitigate her sufferings. The intensity
of the pain or even its presence or absence, bears no proportion to the extent of local change taking place in the tissue or organ affected. As showing the uncertainty of pain as a sign of the extent to which structural change has advanced, two cases may be mentioned as stated by Dr. Decock.

The first was a case where the usual symptoms of the disease appeared on the second day after delivery, and in three days death took place. On dissection there was found "general peritoneal inflammation, disorganization of both ovaries, particularly the left, and a collection of pusulent matter in the folds of the broad ligament near its connection with the uterus." In the second case the disease terminated fatally in twenty-four hours, and on examination there was found slight effusion in the abdomen, complete disorganization of the ovaries, with sloughing of the inner membrane of the uterus. Now the lesions in both these cases are very much alike and yet it is stated by Dr. Decock, that while the latter experienced considerable pain in the uterine region the former complained of none even under pressure.
so that pain must be looked on as rather a doubtful criterion of the local changes that are taking place.

In addition to pain, there is in most cases where the local affection is in the peritoneum, tympanitis, which increases in intensity, till at length, in many cases, the abdomen is as large as before delivery. As the peritoneal inflammation extends towards the diaphragm, the breathing becomes more and more embarrassed, and the respiration is carried on chiefly by the intercostal muscles, from the pain the patient has in using the abdominal.

It is rare however that we find the peritoneal affection, the only complication, as it is generally associated with changes in one or more of the pelvic viscera. When the local disease is confined to any of these organs, the pain is more limited in extent and more deeply seated. If the uterus is the affected organ, on examination it is found to be large, hard, and painful—unless the general peritoneal surface is affected, the abdominal parietes is lax, and the uterus is easily felt through them. If the inner membrane is affected, the lochial discharge is suppressed, and in a short time there is a puru-
lent discharge from the vagina. In some cases this is than-
gery, which is very distressing to the patient; in others there is
a total suppression of urine.

When the uterine appendages are the seat of the local disease
it is often a matter of difficulty to diagnose it. We may often
find in such cases that, in addition to the local symptoms al-
ready mentioned, as indicating inflammation of the uter-
us, we can ascertain the uterus is in its natural situation and of its
normal size, and not painful on pressure, but that laterly
there is what appears a tumour, and this points out that prob-
bly one of the ovaries is affected.

When the veins of the uterus are affected the local symptoms
will be the same as those observed when the substance of the
organ is the seat of the disease. In these cases that commence
and advance gradually, the disease very liable to be mistaken
for after-pains, till an aggravation takes place, such as to leave
no doubt of its true nature. After the symptoms have lasted
for some time it is not unusual to find such a change as
to lead to the hope that recovery is about to take place, but
in a short time this remission is often followed by collapse.
great prostration of strength, abscesses in different parts of the body, more especially in the joints, and all the signs of approaching dissolution make their appearance.

The prognosis in regard to the result of a case of periperal fever will depend in great measure on the form it has assumed, the extent and variety of the local affections, and the effect produced on it by medicines. In those cases which present an inflammatory character, and especially if the disease is not epidemic, the result will, in general, be more favourable than in those of an opposite type. The gradual subsidence of the local affection, the return of the various ecchymoses to their normal condition, and the pulse becoming less frequent and fuller may be looked on as favourable. In most cases however, the prognosis is generally unfavourable, unless relief of the symptoms takes place in a few hours after the employments of remedial measures. If, however after the use of these measures, the vomiting and retching are subdued or alleviated, the pain of the abdomen disappears, the pulse regains its wonted strength and fulness, and the heat of the body returns, hopes may entertained of the patient's ultimate recovery.
In no disease more than in putrid fever has a greater
discrepancy of opinion among medical men prevailed than
in regard to the best mode of treatment to be adopted
in order to arrest its progress, and to diminish the fa-
tal ravages which are so often witnessed.
When we look to the results of the remedial measures
employed by some of the greatest physicians that ever
adorned the profession, when we see such masters as
Hunter lose thirty-one out of thirty-two who all the
care and the different methods of treatment followed
we must acknowledge the truth of the remark made by
Dr. Cooch, that, "It may appear presumptuous to re-
commend any course of treatment in a disease which,
as far as we know, has always been fatal."
The uncertainties in the result of practice that have so
frequently been observed are chiefly attributable to the
empirical methods of treatment that have in former
times, been followed, so that before considering the various
remedial measures that have been proposed, and the ef-
ficacy of these measures, it is necessary to state some
general principles which may serve as a guide, in some measure, to the treatment of the disease on rational principles. In tracing the history of different epidemics of puerperal fever, it has always been found that these assume the type and character of other epidemic diseases prevailing at the same time and in the same place, and further, that the method of treatment which is serviceable in one is also found to be most suitable in the other. So that by knowing what the fevers that ordinarily prevail in any place may demand, we have some general indications that may serve as guides in the employment of remedies in cases of puerperal fever. As illustrating the importance of the above observation it may be worth while stating the singular coincidence of the similar line of practice that prevailed, in the beginning of the present century, to the treatment of ordinary fevers and the puerperal fever. It was precisely at this period that we find Gordon, Hy, and others maintaining the inflammatory nature of puerperal fever, and recommending large and
repeated bleeding as the only means of cure, and strange as it may appear, it was just at this time that the doctrines of Blattberg and Armstrong of the antiphlogistine treatment of our ordinary fevers, held the first place in the minds of medical men.

Two other observations are necessary to be attended to in the treatment of this disease, as they serve as landmarks to guide us in discriminating the line of practice to be pursued in each particular case that may present itself.

The first indication is, to attend to the local disease which may present itself in the course of the disease, and endeavour to remove it by the use of appropriate means. The second and by far the most important indication is, that while our attention is directed to the local malady, we are never to forget, that the local affections are not either the cause of the disease, or the disease itself, but merely complications of various kinds which are associated with, and dependent upon the same specific cause, as that which produced the general fever.
With these observations of a general nature before us we are now better prepared to consider the various remedial means that have been proposed and employed in the prevention and cure of the disease.

The treatment of the disease has been of two kinds either prophylactic, or curative, according as the remedies are intended to prevent or cure the disease. Of the preventive means that have been used the principal are the following. By many the alkalies and the alkaline carbonates are supposed to possess the power of preventing the disease. The salts of potash, especially the sulphate and carbonate, have been employed by Dever and others with this view. In a like purpose the liberal exhibition of soda has been used and thought beneficial in some cases. Nitric acid in combination with Betti's water has been given for some time previous to labour with the hope that it may act as a preventative, but if any good effects follow this practice it is probable that more may be due to the saline ingredients in the Betti's water, that to the acid with which it is mixed. Mr. Baly gave as a prophylactic, from five to ten
grains of calomel, conjoined with opium, so as to affect the
mouth, by the third day after delivery, and he says, from the
time plan, though the same facilities still existed for the spread
of the contagion, not a single case of any importance afterwards
occurred. Notwithstanding this great power which Mr. Godby,
asserted to Mercury, we are perhaps not fully warranted in
assigning so much value to this mode of treatment, as the above
statements might appear to demand, and even if the ef-
ficacy of Mercury were fully demonstrated, it is more than
questionable whether we would be justified in giving such a
powerful drug for such an object, and which is always sure to
injure the constitution of the patient, if it do not produce cur-
vative effects, or if there is no tolerance of it in the patient's
system. The next prophylactic agent that has been made trial of is
the Sulphate of Quinine. A sufficient number of trials have
not yet been made of its efficacy to enable us to speak of it
with confidence, but from those that have been made, it
would seem that it at least deserves more attention, than
it has heretofore obtained. Such are the principal medi-
cinal remedies that have been employed as prophylactics
in this disease, and although the employment of such
means has been very limited in extent, yet it is a line of
practice which deserves more attention from the good re-
results observed especially in surgery, from its employment
One class of prophylactic measures, which has not yet been stated, and of the benefit of which every one is becoming more and more satisfied ever since its adoption, is those means which have for their object the prevention of the spread of the disease by contagion being conveyed either directly from one puerperal patient to another, or indirectly by the medical attendant, or nurses and attendants. While nothing certain in regard to the good effects of the former measures spoken of, the experience of all testifies to the good effects produced by the latter. Although we are in doubt of the contagious nature of the disease yet we are bound to give our patients the benefit of that doubt and to act as if we firmly believed in the communicability of the disease.

With this cursory notice of the prophylactic treatment, I proceed with equal brevity to mention some of those curative measures that have been proposed as proper for the removal of the disease when it has once made its appearance—first bloodletting. This plan of treatment was formerly carried to a much greater length than has been customary in latter times. Gordon and Hey asserted that we ought to bleed in every case, and that this was the only means of subduing the disease, but this somewhat rash and exclusive practice has long since been abandoned.
by the best and most experienced practitioners. The cases now which are suited for general bloodletting are very few if any. Those in whom it is likely to be of service are such as have originally been of healthy constitution and in whom the disease approaches very much to the uncomplicated inflammatory fever, and especially if the chief seat of the disease is limited to one organ. In addition to these indications for general bleeding, if the case has occurred apathetically and if the character of other fevers at the same time requires bloodletting, it is most that the personal malady will require a similar method of treatment.

A much more frequent mode of abstracting blood is locally and this is much oftener necessary than a general bleeding, in order to relieve some local affection, and if we remember that it was for this object that those who have advocated general depletion, have chiefly used it, and if in addition we remember what has been already stated that the local lesion is not the disease, we must be lead to conclude that the less depression we produce, the better in all probability will the result be, so that general bloodletting should never be employed where we can attain the desired end by the local application of leeches. The abstraction of blood for local disease has been practised in two ways either externally or internally. Either on the abdominal
parites over the affected part or to the inner surface of the uterus as some have recommended and it is stated with success.

The next remedy with which the disease has been treated is Emetics. The origin of this method of treatment and its efficacy was with a physician in France in the year 1762, and by these means he saved two hundred. The good effects of Emetics have been spoken of by many French physicians and among others by Tonellé, who states that many were cured by them with Emetics, as if by magic. Although this method of cure has not been quite so successful in this country, yet there is no doubt that if we could discriminate those cases in which it is applicable great benefit would result from the employment of this method. The indications for the use of Emetics are the following as stated by Dr. Ferguson; he says, "Where there is an obvious struggle in nature to cast off the poison, through the liver and intestinal canal, and where that effort is marked by nausea, bilious vomiting, bilious suffusion, or bilious diarrhoea, it will be requisite to resort to Doulet's treatment."

Another remedy which has been employed is purgatives. The benefit to be derived from this class of remedies has been variously stated by different authorities, some re-
probating their use altogether, and others as Derrin, Sidney Hoy & relate instances of their great utility. There is no doubt that in many cases they act injuriously, causing pain and an aggravation of the local symptoms, and that in the great majority where it is necessary to un-load the bowels that Enemata are far preferable, but still these may be some cases in which the use of gentle laxatives of great device, and when em-ployed it is always beneficial to combine them with an anodyne.

The next remedy which may be mentioned is one which is supposed to act as a Specific in the cure of the disease. Mercury has been chiefly employed in Britain for the cure of this affection. By some it has been given merely as a purge, by others in order to produce its specific effect. By some it has been entirely condemned as hurtful, while others assert that it is the nobilissimum remedium.

The indications for employing it seem chiefly to be in those cases where there is no contra-indication to its use, and where the other means employed either appear to be going to fail, or have already entirely failed, and the only hope of success that remains is in its speedy administration so as to produce as quickly as possible its physiological effects on the system. Where after its use for some time
irritative and an aggravation of the symptoms take place, it must be immediately suspended, lest the means we are employing to arrest the disease, may only tend the faster, to hurry it on to a fatal termination. When we wish to put the system under the influence of mercury, calomel is perhaps the best form in which to give it, and if it produces disturbance of the bowels it will be advisable to combine it with opium or Dover's powder.

Another remedy is turpentine, the action of which is supposed to be of a specific nature. This remedy was first introduced into practice by Dr. Brennan, and its efficacy afterwards was praised by Dr. Douglas and many others since. The cases in which it is most likely to be of use, are those in which the disease has lasted for some time, and the abdomen is becoming tympanitic. As to its good effects in many cases when applied externally, there can be no doubt. It is much better to use this than apply a blister as it produces its effects sooner, and the integuments returns to their natural condition much sooner. When given in the form of enemas it is sometimes of considerable benefit.

The last general remedy, which deserves to be mentioned for two reasons—first, it is one of very common use in pur-
palpable fever, and second, it is one which possesses great efficacy in the cure of the disease - this remedy is Opium. In all cases where the various other remedial means have been tried, this drug has been given either after their use, or in conjunction with them. Whether bloodletting, or purgatives, or emetics, or turpentine, or mercury, or camphor or any other remedy has been given, opium has also occupied a prominent place in treatment. Many cases have been cured by it alone and in some it has succeeded when other remedies have failed, as in a case by Dr. Gordon where after bloodletting and other means had failed the disease subsided under the use of opium. The beneficial effects of opium in large doses have been well shown by Dr. Stokes in the "Dublin Medical Journal." There can be no doubt of its good results, where there is irritating, peritoneal inflammation, or distressing diarrhea, it tranquillizes the system, it soothes pain, which is often severe, it produces sleep, and we know also that in some cases it subsides inflammation. In many cases it will be preferable way to give in combination with ipecacuanha in the form of dose's powder or with some other remedy.

Having thus briefly stated these remedies generally employed for the purpose of curing the fever, some local means may be stated which possess the power of checking the local affects. These remedies have either been applied externally or internally.
I have already mentioned the local application of leeches externally, and also internally, as practiced by Dr. Fergus and others. The external application of cold to the abdomen as recommended by Dr. Sutton has also been employed. Mr. Berly applied cold evaporating lotions to the loins, back, and abdomen, and helped alleviate pain, repressed tympanites, and agreed better with the patient than hot applications. Dr. Michaelis has recommended the external and internal use of ice, and the effects are said to be that sleep is procured, pulse diminished in frequency, vomiting is suppressed, and that it is very grateful to the patient. Dr. Michaelis also believes that it causes absorption of the abdominal effusions. Blistering has also been used, but with comparatively little benefit. Turpentine applications externally has also been of service, in some cases, as likewise hot fomentations, in alleviating pain and subduing the local disease.

Various internal local applications in the form of injection have been used. Some have used for this purpose a decoction of Conium, others an infusion of Valerian and Linseed. Many have thought the chlorides useful as an injection, and where the discharge is of a fetid nature, they may be of service. It has also been a practice with many to use injections composed of equal parts of milk and water, and some have added sugar, for what purpose it is not easy to say, unless it has some specific effect on the parts with which it comes in contact.
Such are the principal medicated injections that have been employed, and yet perhaps after all none of them has any superiority over simple tepid water, unless where the chlorides are found to be of service.

When all other means, whether local or constitutional, fail, or where the disease has been of a low typhoid character from the beginning, recourse must be had to stimulants. In many cases, wine, brandy, ammoniac, and the strongest and most powerful stimulants will be insufficient to support the sinking system, and death will be the issue notwithstanding our most vigorous and well-timed efforts to save the patient. In other cases, however, when we may have given up all hopes of recovery, the patient becoming cold and covered with a clammy sweat, with all the signs of approaching dissolution, under the use of stimulants these symptoms may abate, and ultimate recovery take place even under the most adverse auspices.