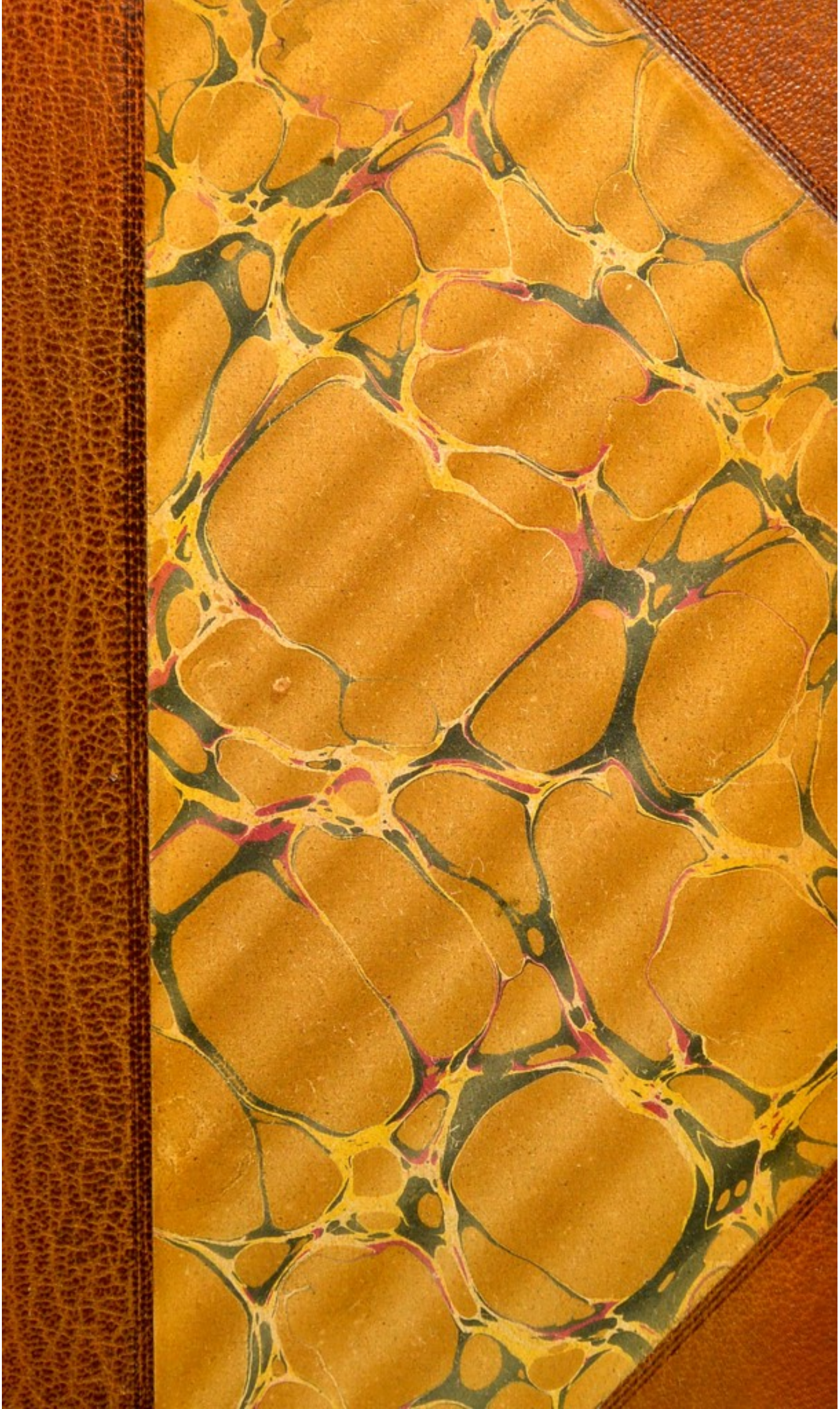
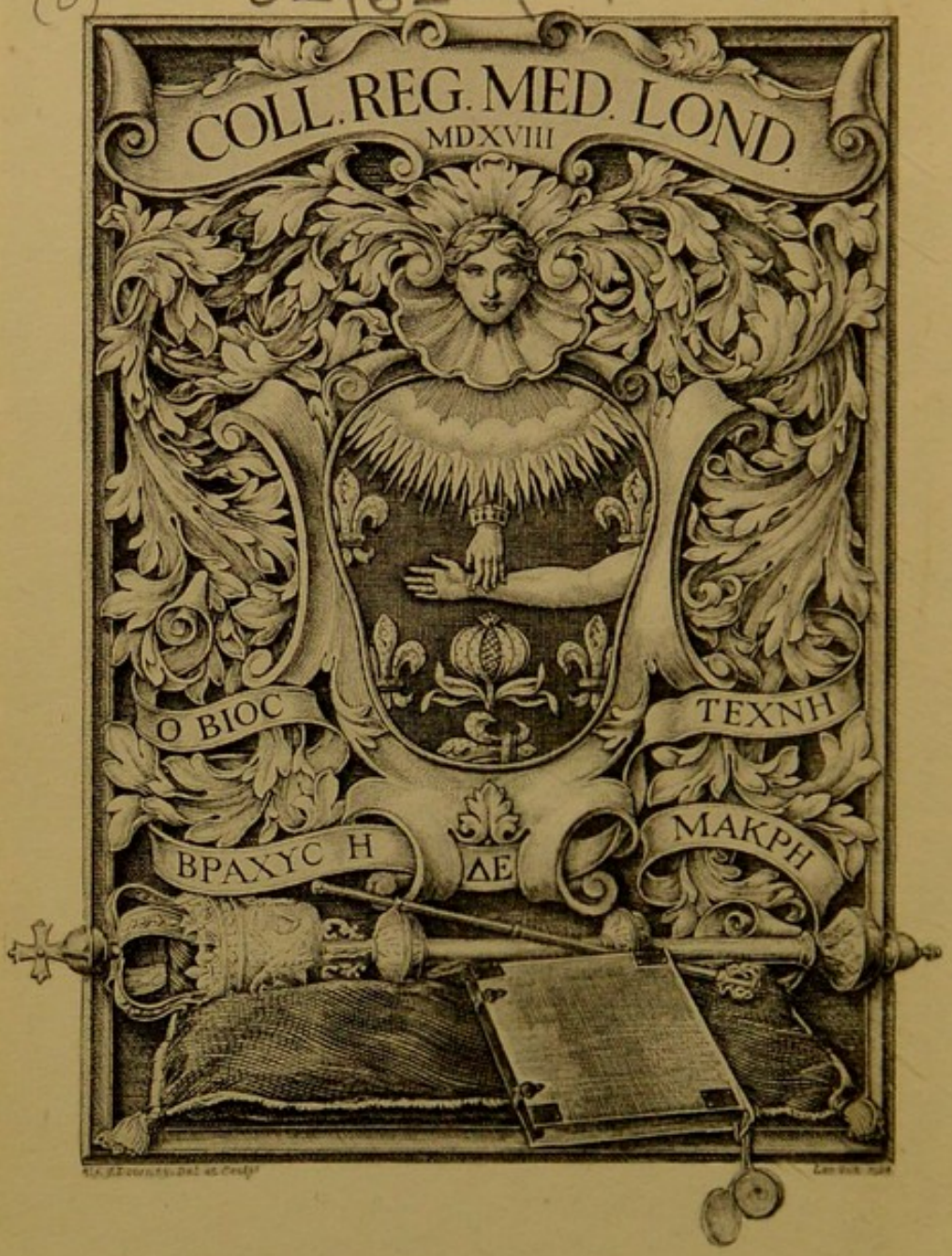
Essays on the most important diseases of women. Part 1, Puerperal fever; [and] On the method of induction and its results in medical science / by Robert Ferguson.





From the Author

ESSAYS

ON THE MOST IMPORTANT

DISEASES OF WOMEN.

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DISEASES OF WOMEN.

BY

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PART I.

PUERPERAL FEVER.

LONDON:
JOHN MURRAY, ALBEMARLE STREET.

MDCCCXXXIX.

LONDON:
PRINTED BY STEWART AND MURRAY,
OLD BAILEY.

TO

THOMAS GRAHAM,

SURGEON, TURNHAM GREEN,

IN

GRATEFUL REMEMBRANCE OF IMPORTANT BENEFITS,

AND OF

A LONG SERIES OF KINDNESSES;

AND

IN TESTIMONY OF HIS PUBLIC WORTH AND

PRIVATE VIRTUES,

THIS VOLUME IS DEDICATED.

PREFACE.

The malady which forms the subject of this Essay is the most fatal of those peculiar to women, as seven-eighths of the total mortality in child-birth are owing to it. Other important diseases, incident to the Puerperal state, as Phlegmasia Dolens and one form of Puerperal Mania, are modifications of that condition of body which gives rise to Puerperal Fever. A correct knowledge, therefore, of this disease, must necessarily throw great light on the whole of one important condition of the female constitution, namely, the Parturient State; and by so doing, afford the means by which we may hope to prevent, or at least to mitigate, some of the evils incident to it.

These reasons have induced me to commence a series of Essays descriptive of the diseases of women, with the subject of Puerperal Fever; the large

space devoted to the discussion of which, has originated no less in the extreme importance, than in the great difficulty of the topic. They who are unacquainted with the literature of this subject, are not aware what a chaotic conflict of opinions and practice, it exhibits. Insomuch that Tonellé, one of the latest and best describers of this malady, says, that our knowledge of the symptoms, the nature, and the treatment of Puerperal Fever, is uncertain; adding, that a comparison of its phenomena, as seen in various epidemics, and a fusion of separate opinions into one collective result, will alone permit us to understand and to alleviate this formidable disease. I have set this standard before me, and have endeavoured, to the best of my abilities and opportunities, to compare my own experience with that of others. The materials I have used are, almost without exception, cases which have occurred in the last twelve years, at the General Lying-in Hospital. They amount to 204; about four-fifths of which I have either treated myself, or seen others treat. These cases are registered by the various Resident House Surgeons, to whom in succession the active charge of the Hospital, under the superintendence of

the Physicians, is entrusted. They are for the most part students who have just finished their medical education, and are therefore fully qualified to note and compare the effects of disease. Their term of attendance expiring at the end of three months, others replace them in their duties, and record in their own way their own observations. I mention these particulars, as they tend to establish the authenticity of my facts, as well as to do away with the possibility of their being garbled; for it is highly probable that similar phenomena, observed and noted by different individuals at distant periods, are both true and complete. I have not felt at liberty, in compressing the subject-matter of the cases, to swerve from the general style and diction of the narrative which I found, lest, in the attempt to polish the phrase, I might alter the fact.

I fear that the number of cases I have inserted in the work disturbs the narrative, by breaking its continuity; but though disadvantageous in sustaining interest, I hope they will be found useful for practical reference. I felt compelled to ground assertions which might be deemed mere dogmas of my own, on a strong basis of facts. Those who prefer a continuous

narrative may obtain it, by passing over the cases to the summary appended to each section. With regard to the treatment of the 204 Cases, exhibited in my tabular view, I have only to say, that in some I simply carried out, as Assistant-Physician to the Institution, the views of the Physicians, while for others which were exclusively under my superintendence as Physician, I am wholly responsible.

To my colleagues I beg to offer my thanks for their zealous co-operation, and for the liberty allowed me, of using their notes. I have also to acknowledge my great obligations to Dr. Farre, for the permission granted me of making use of the MS. notes which I took of a valuable course of lectures given by him in 1826, in which his views of the use of mercury, in quelling inflammation, were developed. Several important communications, bearing either on the treatment or the nature of Puerperal Fever, will be found in the Appendix; they should have been embodied in the work had I received them in time. For one of these I am indebted to Dr. Watson, Physician to the Middlesex Hospital, and Professor of Medicine in King's College, London; and for another to Dr. Copland, Consulting Physician to the

Queen's Lying-in Hospital, and the learned Author of the Dictionary of Medicine. Mr. Gulliver's researches on Suppuration, were only made known to me after the greater part of this volume was printed, otherwise his experiments would have been very useful to me in the development of my argument.

I have been persuaded to print, in the Appendix, a Lecture which I was appointed to give at King's College, at the opening of the Medical Session in October, 1836, and which I then declined publishing. My friends, Dr. Latham and Dr. Watson, believe it may be of some use to students as an attempt to explain the method of study requisite in the pursuit of our profession, and as offering a summary of those less obvious truths on which medicine, in its largest sense, is based.

It is in deference to their wishes, rather than my own, that I have ventured to intrude it into this volume.

the lesions and symptoms of the other three, with this remarkable feature in addition, a tendency to fluid deposition in any or in every tissue. The fluids effused are blood, serum, pus and lymph. This last form has always excited the most attention, for it is the most frequent and the most fatal, and under circumstances of crowded hospitals, and misery and poverty, intractable to remedial measures.

These four forms—the peritoneal, the gastro-enteric, the nervous, and the complicated, spring, as I shall endeavour to shew, from one source and cause. There is no trenchant limit which bounds them in nature; and in every epidemic which I have witnessed, the characteristics peculiar to any one are readily assumed by another. In the peritoneal form, the peritonitis ceases, and the patient succumbs under fever and diarrhœa—or under a complication of local effusions and phlegmasiæ. In the gastro-enteric, sudden peritonitis will supervene, and carry off the patient in a few hours. Such also may occur in the third or nervous form, or it may (though it rarely does) terminate by a lengthened fever, or by deposit in the great cavities, or in the joints, the muscles or the eye-balls. It is the last form alone which is invariable, save in intensity. It may be looked on as a summary of the others, while these may be considered as fragments of it.

Although these various forms may and do run into each other, their tendency is to remain distinct;

and it is a remarkable fact, that the one or the other of these will give the character to a whole epidemic; the rest either totally disappearing, or appearing only rarely. It is this which has caused so much confusion and dispute in the history of opinions on puerperal fever. Each author has assumed the form he witnessed as the only one, to the exclusion of all the rest. Hence, too, the discrepancy in the treatment of this malady. Gordon, and Armstrong, and Hey, saw, for the most part, the peritoneal form. William Hunter, Lowder, and the elder Hey, observed chiefly the complicated form, where the whole constitution was sinking under numerous attacks, simultaneously made, on the most distant organs in every grade of intensity. Richter and Butter witnessed epidemics, in which the gastro-enteric form predominated, and in which the disordered secretions were remedied by ipecacuanha or alkalies, followed by stimulants.

Another source of dispute and confusion is traceable to another remarkable phenomenon of puerperal fever—the variation in intensity of any of the peculiar forms. In one epidemic the peritoneal affection is very readily removed, in another the same practice fails to remedy apparently similar evils. The French government, for example, rewarded Doulcet for his method of treating a most fatal epidemic puerperal fever, and ordered his plan to be circulated over the kingdom, which, being tried the following year,

proved signally unsuccessful. This fact of a varying intensity is common to all epidemic diseases, and is no less true of the measles and the small-pox, as noted by Sydenham, than of the puerperal fever.

The following table, I think, will prove that I have not assumed my division of puerperal fever arbitrarily; for on looking into the classifications of others, I find that where they have given more than four forms, the excess may conveniently for practical purposes be reduced under some one of those adopted by me; and where less, they are one or other of mine.

DOUGLAS has three forms.

1. The inflammatory.
2. The gastro-bilious.
3. The epidemic or contagious, (Typhoid.)

TONELLÉ. (Archiv. Generale.)

1. The inflammatory.
2. The adynamic.
3. The ataxic, (irregular or nervous.)

ED. MARTENS. (Neue. Zeitschrift, b. 2.)

1. The inflammatory, (where one organ is only affected.)
2. The nervous, (beginning with delirium.)
3. The putrid.

JOHN CLARK, (Hey, p. 3.)

1. Inflammation of the uterus and ovaria.
2. Inflammation of the peritoneum.
3. Inflammation of the uterus, fallopian tube, or of the peritoneum, connected with inflammatory affection of the system.
4. Low fever, connected with affection of the abdomen, which is sometimes epidemic.

These may be reduced to, 1. Local inflammations. 2. Idiopathic inflammatory fever, with local inflammations. 3. Idiopathic typhus, with local inflammations.

VIGAROUS. (Moor on Puerperal Fever.)

1. Gastro-bilious.
2. Putrid-bilious.
3. Pituitous, (vomiting of pituitous matter.)
4. Hysteritis, (Phlogistic.)
5. Sporadic, (arising from cold, passions, &c.)

GARDIEN.

1. Angiotenic-fever, strictly inflammatory.
2. Adeno-meningic, slow insidious fever, slimy tongue.
3. Meningo-gastric, bilious derangement, yellow skin, &c.
4. Adynamic.
5. Ataxic, or nervous.
6. Fever, with local phlegmasiæ.

GOOCH. DUGÉS. BOIVIN.

1. Inflammatory.
2. Typhoid.

BLUNDELL, (The Lancet.)

1. The mild epidemic, with little peritonitic tendency.
2. Malignant epidemic, with great.
3. Sporadic. Peritonitis confined.

BUSCH, (Gemeine Zeitschrift,)

Appears to have *abstracted* from the numerous varieties he has detailed, an entity, which he has termed puerperal fever. The cause of which is a hindrance in the actions of the puerperal functions, if I may be permitted the expression—preventing the organs from returning to their ordinary state.

VARIETIES IN THE LOCAL EFFECTS.

1. Fever with local inflammation of the Abdomen.
2. ..... of the Cranium.
3. ..... of the Thorax.
4. ..... of the Extremities.

VARIETIES IN THE CHARACTER OF THE FEVER.

1. Gastric fever.
2. Nervous fever.
3. Typhus fever.
4. Petechial fever.

This abstract from Busch's elaborate papers shews every species of fever and local inflammation, to enter into the composition of puerperal fever.

Ritgen has likewise overlaid the subject with minute and subtle divisions, with seven kinds of inflammation answering to seven kinds of fevers. His paper exhibits the same principles as that of Busch, but is more full in the physiological detail. His most general conclusions are—that the essence of puerperal fever is disturbance of puerperal function in its attempts to bring the organism back to its unimpregnated state;—that every tissue and organ of each of the three great cavities of the body may be inflamed;—that the best name for the malady is

"MALACOSPLANCHNITIS PUERPERALIS,"

since it is an inflammation which does not attack the peritoneum only, but any viscus, and has this peculiarity, that it is marked by a tendency to end in *very large* fluid effusions.

In this mass of encumbering aid, and subtle and fine-spun disquisition, the reader, nevertheless, will gather that the author has seen the malady he describes on a large scale, that his speculations have not altogether warped his observation, and that in a most soaring flight, he has not lost sight of terra-firma.

I avail myself of Busch and Ritgen's testimony, to point out to the reader "the extensive action of the malady termed puerperal fever." For this is a fact

fairly deducible from their attested experience, and it is one of great moment.

Dr. Robert Lee.

1. Inflammation of the uterine peritoneum and peritoneal sac.
2. Inflammation of the uterine appendages, ovaries, fallopian tubes, and broad ligaments.
3. Inflammation of the mucous, muscular or proper tissue of the uterus.
4. Inflammation and suppuration of the absorbents and veins of the uterine organs.

In another part of his essay another classification is offered, referring the symptoms to three forms of organic lesion:—

1. Inflammatory puerperal fever, dependent on inflammation of the peritoneum.
2. Congestive, dependent on inflammation of the uterine muscular tissue.
3. Typhoid, arising from venous inflammation.

Besides these classifications of a manifold disease, various authors have described puerperal fever in a single and isolated form.

It will be found, first, That these forms are reproductions of one or other of the four I have assumed; and, secondly, That traces of the other three will ap-

pear as exceptions to the mass constituting the general epidemic, thus singly described.

Stoll, Doulcet, and latterly Tricher, considered it as a bilious fever.

Gasc and Murat notice a pituitous fever. All these are varieties of my second form.

Gordon, Hey, Armstrong, &c. describe the first or peritoneal form.

Alphonse le Roy, John Clarke, William Hunter, the elder Hey, and others have noted the typhoid.

The ataxic or nervous is, as far as I know, never mentioned by the older authors, although examples of it may be culled from among their cases.

The fact, that even when puerperal fever is described as a single form without variety, yet that it will nevertheless be included in some of the four forms I have noted is readily proved.

Thus, Gordon seems frequently to have met with the complicated kind, with purulent deposit.

"A very frequent crisis," he says, "was by an external erysipelas, and one of the most favourable symptoms is an erysipelas in the extremities, or *abscesses* on different parts of the body, which are certain signs of a salutary crisis." p. 75.

Hey says he saw but one such case in the epidemic of Leeds—it is his seventh.

Campbell, who describes the inflammatory peritoneal fever, gives a good example of the ataxic form, and mentions erysipelas and *abscesses* as marking

another variety. (p. 40.) It is needless to adduce further proofs in favour of the existence of the four varieties of puerperal fever I have noted; equally so, I trust, to shew that these four include the more numerous classifications of authors, who have uselessly added to the number. I proceed, therefore, to describe these forms:—

FIRST FORM OF PUERPERAL FEVER, CHARACTERIZED BY ABDOMINAL PAIN.

There are two forms of puerperal abdominal pain. The one is durable and dangerous, the other transient, and, *if uncomplicated* with other disease, easily removed. Of two patients attacked by abdominal pain, it will in the majority of cases, and at the commencement of an epidemic, be very difficult to ascertain which is the slighter and which the severer malady. In both, the intensity of anguish, the seat of the pain included between the pubes and a line drawn from the superior crest of one ilium to that of the other;—the precursory rigor followed by the hot fit;—the time of attack, from the first to the fifth day after parturition, are all the same, and neither the pulse, nor the degree of fever distinguish the one from the other. The action of remedies, however, shews their distinctive characters. The transitory form being readily relieved by such agents as lull pain, while the other requires such as are used to quell pure inflammatory action. The transient abdo-

minal pain passes into the second, or permanent kind; but in some epidemics it forms the principal character of the common malady, and I have never seen one, in which some of these cases did not occur. In the year 1827, and a part of 1828, this form of malady was very frequent, and I had repeated opportunities of pointing it out to the pupils of the General Lying-in Hospital, with whom it obtained the name of False Peritonitis. One of these, my friend Mr. Hingeston, subsequently published cases which he saw during the period of his residence at the hospital, which possess the double advantage of being well reported, and of authenticating the existence of a form of malady which has been denied by some. Mr. Hingeston has related six cases:—

"A woman thirty-three years of age, who, after the birth of a dead child, continuing well for two weeks, was seized with severe abdominal pain, increased by the slightest pressure; the skin was hot and moist, the pulse 130, full, but easily compressible, the tongue milky. These symptoms remitted; an aperient afforded some relief. The next morning, recurrence of symptoms, but they were subdued by two doses of Dover's powders, 10 grs. each; once and again they manifested themselves, and were each time suppressed by the same powder followed by an aperient. The pain in the abdomen was very severe—the patient could not extend her thighs, and flinched from the slightest pressure."

"Shortly afterwards four cases happened at the same time, each in middle-aged women of pale complexions and bluish conjunctivæ, lax fibre, and loose cellular tissue, and with habits apparently irritable; each occurred from four to six days after delivery. The pains were severe but remitting in duration and severity; the tongue milky, the pulse rapid, but without that character so infallible of true peritonitis. Each of these cases yielded to 10 grs. of Dover's powders, with 2 of calomel, repeated if necessary, and followed up the next morning by salts and senna."

In detailing another case, Mr. Hingeston says, "In the evening I found her tossing to and fro, exclaiming from pain, her countenance flushed, her skin hot and dry, her tongue milky, her pulse small and rapid. The bowels relaxed from the effects of senna and salts. By pressing the abdomen she suffered much acute pain: 5 grs. of calomel and 3 of hyoscyamus were given. At the expiration of two hours, the pain had increased, accompanied with mental distress and apprehension, when 10 grs. of Dover's powder were given in water—she shortly after vomited. In the course of another hour the pain vanished, and she fell asleep. The next morning there was no indication of the last night's disturbance."*

Tonellé has also described a very transitory, or as he terms it, an ephemeral form of puerperal peritonitis. He connects it with cases in which pus was

* Medical Gazette, vol. i. p. 308—311.

found in the veins, and characterises it as so fugitive, that it scarcely extended beyond a few hours or a single day, though in some cases, after lasting several days it suddenly disappeared. It is of great importance, therefore, to remark this fact, that the peritoneum may be the seat of a disease strongly resembling genuine inflammation; and which yet after a few hours or days of persistence, will as suddenly leave the tissue as if it were an attack of shifting erysipelas or rheumatism.

Lately Mr. Griffin has published a case in the Medical Gazette for Oct. 15th, 1836, illustrative of this form of malady.

"Mrs. M., a married woman aged twenty-six years, had very severe flooding in her lying-in. On the fifth day after, she was seized with pains in the abdomen, attended with excessive soreness to the touch, and fever. She got castor oil on the sixth day, which operated twice without giving much relief. In the evening she had a slight rigor, and felt very weak. The milk had left her from the first moment of the attack, and the lochia had nearly ceased. I saw her for the first time on the night of the seventh day from her delivery, and found her lying on her back with her knees up, complaining much, and incapable of the least motion, or turning to one side or the other without the greatest torture. The pain was constant, but was increased to an excessive degree at intervals; coughing was very distressing to her,

and the least pressure on any part of the abdomen made her scream. Slow, steady, cautious pressure with the flat of the hand was unbearable, but she could stretch down her limbs without increasing her sufferings. Her countenance, which was pale from the flooding, had an expression of distress, and the brows were knit as with pain. The skin was warm, the tongue moist and white, and the pulse weak at 112. There was excessive tenderness of all the lumbar vertebræ. The abdomen was fomented, and she got 2 grs. of calomel, and a grain of opium every third hour. After the second dose the pain abated, and she got a good deal of sleep; but in the morning the symptoms returned, and the pills were resumed with the same good effect as before. The tenderness of abdomen was now rather less, though the bowels appeared more full, not having been moved for the last forty-eight hours: she could turn from side to side with less suffering—the pulse still 112, and the skin warm and moist; she took castor oil, and afterwards pills of aloes and extract of henbane every two hours, which operated freely; she passed a tolerable night, and seemed easier, but got the pain more violently than ever on the following morning, when it was relieved by 40 drops of laudanum; it continued in the intervals of these paroxysms, but not severely. In the evening the paroxysm recurred, and was again relieved by the laudanum. Notwithstanding these recurrences, she felt herself on the whole

much better, could turn from side to side with more freedom, and wished for nourishment; she complained of some head-ache. She was now directed to take 3 grs. of sulphate of quinine three times a-day, and to repeat the laudanum if seized with the pain. I also allowed her to get a little chicken broth, or beef-tea. She passed a good night, and although the pain recurred at intervals on the following morning, it was much less severe: she threw up some aloetic and henbane pills which she had taken to free the bowels; the abdomen, though still painful on pressure, was much less tender, the soreness of the spine was already gone, and her milk was returning. As her bowels had not been moved for the last thirty-six hours, she got some castor oil; and the quinine and broth were continued;—she complained much of the head-ache.

"The pain recurred again violently in the night, soon after which the flooding returned for a short time, and then ceased. The pain was relieved by a grain of opium; felt much better through the day, and ate a little meat without permission; the soreness of the abdomen almost gone, and none whatsoever of the spine; her head-ache was better; she continued her quinine and nourishment, and was well in a few days."*

Here, then, are instances of a peritoneal affection,

* Medical Gazette, 15th Oct. 1836. pp. 78, 79.

observed at different times by different persons, bearing the usual characteristics of violent inflammation, and yet yielding to remedies deemed inefficient in true peritonitis.

In the epidemic of the winter of 1827-28, this form was so prevalent along the banks of the Thames, that, being worn out with the incessant calls to visit the patients at their own houses, I directed the matron of the hospital to send, in the first instance, to all complaining of abdominal pain, two doses of Dover's powders, each containing 10 grs.; one to be taken immediately and the other in four hours; when if, notwithstanding, the symptoms should persist, they were directed to send to me. After this I think I had no occasion to visit one in five of those afflicted, as they did not require any other treatment.

A mere perusal of such cases as I have related, might easily lead those, who know only the more fatal form of puerperal fever, to look on them as colics, or severe after-pains, or any thing but what they really are. Yet, a moment's reflection will suffice to show, that epidemic colics, and epidemic after-pains do not exist: that many competent observers have noticed this form of peritoneal pain; and that among the house surgeons of the Lying-in Hospital, I do not know a single one who either doubted its existence, or failed to note, with astonishment, its peculiarities.

If, with the clue I have afforded, the works of the

older authors be now examined, it will be seen that Doulcet, Richter, and Boer, for instance, have noted the readiness with which peritoneal pain will leave, not one, but a number of patients, on using some remedy which few would think sufficient for relieving peritonitis,—an emetic, a slight aperient, or only a few grains of antimonial powder,—patients, too, who were dying in frightful numbers under other modes of treatment.

The reader will find, in Gooch's "Diseases of Women," the anecdote of Boer's, Doulcet's, and Richter's success. In reading the last edition of Boer, 1834, I think there is every reason to believe that the antimonial preparation which, in his hands, did such wonders, was the "True James's Powder," and not the Kermes Mineral, as Gooch suspected. He obtained it, as he says, while in England, where it was vaunted, he adds, as a very efficacious febrifuge. Richter removed the malady by increasing the alvine secretion; Boer by acting on the skin; and Doulcet, by emetics. These men were all hospital physicians; each superintending the largest lying-in establishments of their respective cities of Paris, Vienna, and Gottingen. Accustomed, therefore, to see disease on a large scale, and to notice it with minds ripe in age and experience, it is impossible to doubt their competency, as observers, or their veracity, as men. The remarkable part of their several statements is, that the malady was very fatal under every other mode of treatment than the

simple one each adopted; and that the post mortem examinations proved it to have been genuine puerperal fever.

As to the nature of this form of puerperal fever, Mr. Hingeston looks on it as nervous, only in the sense in which a nervous impression precedes every inflammation; the peculiarity being its permanence in this early stage. Mr. Griffin regards it as nervous pain, dependent on spinal irritation; M. Tonellé, as connected with the circulation of pus in the veins.

I believe these opinions are not really different, except in each being only a part of the truth. M. Tonellé, I think, and shall prove hereafter, would have given the real cause had he generalized his proposition into a vitiated state of the blood, instead of limiting such vitiation to one cause, namely, the circulation of pus. In many instances we have the genuine marks of vitiated fluids, without being able to detect a particle of pus in them. Le Gallois mixed pus with blood, while it flowed from the arm, but could not, subsequently, detect in the compound any of the matter; hence, pus may exist in the circulation without our being able to discover it. But I shall, hereafter, show that other products of inflammation will vitiate the blood. I would, however, strongly impress the experiment of Le Gallois on the reader. He will, hereafter, find many cases exhibiting the genuine characters of phlebitis, in which no

lesion of the vein was discoverable, and which this experiment explains; and, as many other sources of vitiation exist, to select one, is exclusive, and may be erroneous.

Admitting, with Tonellé, that a vitiated blood is circulating in the system, the two opinions of Mr. Hingeston and Mr. Griffin are readily reconcileable; the latter tracing the peritoneal pain to an irritating cause, acting on the spine first, and thence on the peritoneum, the former merely delineating the disease as a nervous affection of the peritoneum, the commencement of true inflammation, without tracing the affection to the nervous centres themselves. In all, we must conclude, that the malady is a genuine puerperal fever, the peculiarity of which consists in its being limited to its very first stage, consequently in its being within the reach of such simple remedies as merely allay pain and subdue congestion, by promoting the secretions of the intestinal canal and the skin. My own experience, and the inferences derivable from the perusal of Doulcet, Richter and Boer, prove it is not a matter of indifference how such a malady should be treated. I believe that a severe bleeding will give to that which was transitory a permanent character; and what might have been easily removed by appropriate remedies, becomes now a formidable disease. Unfortunately, however, the diagnosis is by no means certain, and, when we consider that this is only one of the grades leading to the more for-

midable inflammation, we shall cease to wonder at the difficulty. Mr. Griffin has laid great stress on the inability to stretch the limbs, as distinguishing this peritoneal pain from peritonitis. But Mr. Hingeston has related a case, in which one of his patients was as unable to move her limbs as if labouring under the acutest inflammation. Mr. Hingeston has fixed on the pulse as infallibly distinguishing true peritonitis, an opinion which is at variance with the experience of Andral, who, while he admits that the small compressed pulse generally marks peritonitis, yet says this characteristic is often absent.

If the pain be very sudden in its onset; if there be *intermission;* we may fairly expect relief from opiates. If there be *remission,* well marked, we may resort, with much hope, to the same treatment.

If the pain be constant, we may, under the following limitation, resort to opiates in the first instance, namely; "if our previous experience of the reigning epidemic has proved that the peritoneal pain has in other cases easily shifted." Hence the *nature* of the epidemic is to be studied, and used as a guide.

Lastly, we may, in doubtful cases, resort to the opiate treatment, and, should it not have produced, in four hours and a-half, after two 10 grain doses of Dover's powder, a marked amelioration, we ought, forthwith, to resort to local or general depletion.

The routine of the hospital practice in cases of abdominal pain has been this. A hot linseed-meal

poultice, immediately on complaint of pain—and this as it induces perpsiration, is very often alone sufficient; then, an opiate with or without an aperient; and in the event of no amendment within four or six hours after the attack, a change of treatment according to the nature and grade of the disease.

Of the second or permanent form of peritoneal pain, I have nothing to say which will add to what is already known. It is a genuine and fully developed peritonitis, requiring the energetic use of all those means by which inflammation can be subdued. It has four distinct stages;—first, or preparatory, marked by a shivering, a hot and a sweating fit, lasting from one hour and a half to six hours, during which there is a sense of severe disease, and often much agitation of mind. The second stage is charactised by abdominal pain, fever, general turgor, hard, frequent, and compressed pulse, supine posture, and restrained breathing. The third stage is that of effusion, marked by apparent amelioration in all the symptoms. The fourth is that of collapse, in which the countenance is changed, the respiration laborious; the surface cool, clammy, and slightly livid; the abdomen swollen; the pulse too frequent to be counted; the mind usually perfectly clear. It should be remarked, however, that inflammation of the peritoneum only, is of comparatively rare occurrence in puerperal women. Tonellé found, in two hundred and twenty-two dissections, only twenty, or one in eleven, in

which the peritoneum exhibited the sole lesion. Other organs are generally implicated in puerperal fever, and in the estimate of the energy required in our remedial measures, therefore, we must take into consideration the actual powers of the constitution now labouring under complicated attacks. Yet, with every allowance made for this or other causes, there is abundant testimony to prove that lying-in women are subjected to attacks of peritonitis, which can only be subdued by the vigorous use of antiphlogistic remedies.

SECOND FORM OF PUERPERAL FEVER.—FEVER WITH GASTRO-ENTERIC IRRITATION.

This form of puerperal fever assumes the general characters of a mild typhus, accompanied with intestinal irritation. There is either no peritoneal affection, or it is very slight or transient, so as soon to be lost in the mass of constitutional symptoms which endure during the whole of the illness. The malady rarely lasts less than seven, or more than twenty days. It is ushered in by rigor succeeded by a hot fit, which frequently, though not always, gives place to peritoneal tenderness of a mild character and short duration.

From the very onset of the disease, there is some marked irritation of the mucous membrane of the intestinal canal—either vomiting, nausea, or diarrhœa, in which the evacuations exhibit every kind and grade of vitiated secretion, varying in colour, consistence,

offensiveness, and frequency. The tongue, at first loaded and white, soon becomes preternaturally red; as in those affected by chronic dysentery. The skin is dry, hot, and of a dusky yellow hue; the mind is unsettled, without being absolutely delirious, and the impressions on the eyes are unwontedly vivid; the debility is extreme, and the limbs very tremulous. There is a very marked remission during the day, and an equally marked exacerbation towards evening, and night, when the dreams of a troubled sleep are so vivid as to impress the mind with all the distinctness of reality. Even during waking, the patient sees objects flitting constantly before her eyes. In some instances there is watchfulness and mild delirium during the night, with perfect mental collectedness during the day. This grade and form of puerperal fever rarely or never terminates fatally without first becoming complicated with some acute inflammation of an important organ, as the peritoneum, or the thoracic viscera; or some deposition in the joints or limbs, followed by colliquative diarrhœa. Hence, the lesions found after death are chiefly of the organs last attacked, while the primary affection of the intestinal canal, is scarcely marked by any structural disorganisation. The uterus, however, will, as usual, be found either much congested and large, or its veins and lymphatics containing pus, or its inner mucous surface superficially softened. When there is extensive softening of this viscus, all the above

characteristics of this form of puerperal disease are merged in the broad and very obvious signs of an overwhelming, and from the very first, a fatal typhus. There is no peritoneal pain, but merely very deep-seated and obtuse sensibility to firm pressure. The mind and body are equally prostrate and enfeebled. The skin is of a deep-brown colour. The pulse small, weak, and very rapid. The abdomen soon becomes tympanitic, and the whole intestinal canal seems filled with dark fluid, which is vomited without effort in large gushes, or passed in unrestrainable diarrhœa. The less formidable of these two grades seems to have given the character to an epidemic, which was described by Dr. Butter in 1775, under the term of remittent puerperal fever.

He says, it began on the first to the third day after delivery, with rigor, head-ache, noise and throbbing in the ears, oppressed breathing, sickness, fainting, and great dejectedness; pain in the abdomen; heat and thirst; disturbed sleep; watchfulness; but rarely delirium. The urine deposited pink or grey sediment. The stools were darkish, slimy, clotted, very fœtid, frothy, fermented, and giving great relief, and were critical. The pulse small, sharp, frequent. Exacerbations once or twice a-day, terminating in sweats. The duration of the disease from one to six weeks. Dr. Butter never advises bleeding but where there are inflammatory complications, when, he says, three ounces will give relief. This quantity is to be

taken during every exacerbation till the pain is gone, which he adds, will subside after two or three such depletions, followed by fomentations applied to the abdomen. "A more free bleeding is required if the inflammation be more violent."

THIRD OR NERVOUS FORM.

This, in its pure and isolated form, is by far the most rare of all the various kinds of puerperal fever; although it is by no means unusual in the other forms of this malady, to witness a marked and sudden onset of anomalous nervous symptoms, which for several hours change the current of the former signs, and are characterised by terror of mind, great coldness of the skin, much agitation and by a sense of impending death, from faintness and extreme prostration. Those in whom the nervous character is the sole, or at least the most prominent part of the puerperal fever, exhibit all its symptoms in all their irregularity and inconstancy; there is painful and sudden abdominal tenderness which subsides with extreme rapidity; there is a rapid pulse, great restlessness, and mental uncertainty and agitation, together with shifting functional disturbance of various organs; sighings, tremors and cramps; sudden and death-like sinking, and as sudden re-appearance of strength; with these, there are nevertheless, from the beginning of the attack, unequivocal marks of deep injury to the nervous system. The faculties and feelings

are strangely disturbed, and the terror the patient expresses, or the furious delirium which often ushers in the attack, soon gives way to fatal coma, or sudden syncope.

FOURTH OR COMPLICATED FORM OF PUERPERAL FEVER.

This form is characterised by an appalling complication of symptoms, arising from the simultaneous or the rapidly successive attacks on distant organs and differing tissues. It begins on the first to the third day with shivering, which very often, though not always, is followed by abdominal pain. The debility soon amounts to complete prostration. The mind is calm and often wonderfully unconscious of danger. There is the rapid pulse and the dusky skin of the second form, and the crimson patches on the cheeks, which contrast so peculiarly with the dull glassy eye, encircled in lead-coloured lids. Sometimes the abdominal pain lasts during the whole of the brief period of the malady; sometimes it subsides in a few hours. Shortly after the abdominal attack, other organs begin to exhibit signs of disorder.

In the majority of cases the intestinal canal is the first of the secondary complications of disease, and then diarrhœa arises, which ends in dysentery, with tormina and bloody evacuations, or there is nausea terminating at last in coffee-coloured ejections.

The lungs are almost always either functionally or

structurally disordered. There is sighing, loud, incessant, and automatic, independent on mental or bodily anguish; or short interrupted breathing; or, if the substance of the lungs be attacked, the usual signs of pneumonia are sensible; though, unlike ordinary pneumonia, it fixes on any of the pulmonary lobes indiscriminately. In some cases the lungs become quite gangrenous.

The pleuræ are very often inflamed, and after death, unusually large quantities of serum and lymph are found in their cavities. At other times there is sero-purulent, or sero-sanguineous effusion without the slightest traces of vascularity of the pleura, or of any sign indicative of the event. I have found gangrene of the œsophagus, perforations of the stomach and intestines, softening of the heart, and inflammation and effusion into the pericardium. The ravages of the disease are not confined to the deep-seated and more important viscera; for soon after the attack of peritoneal pain has subsided, the cellular and muscular tissue, of one or more of the limbs, becomes affected in its whole extent, or partially, with what at first appears to be merely acute rheumatism.

In some instances the skin retains its natural colour, while in others the portion over the painful spot is red, tumefied, and very hot. Either this state gradually subsides, or a soft quaggy feel is communicated to the pressing finger, and then an effusion of pus serum, or blood, or a mixture of all, will have

taken place; after which there is usually complete relief to the limb, and a subsidence of febrile and other symptoms; nevertheless, these formations, regarded as critical by most observers, do not save the patient from dying of colliquative diarrhœa and perspirations, with their attendant exhaustion, except in the milder cases. Whenever these abscesses supervene, the result is very doubtful. When the effusion consists of pus, it is not contained in cysts, but lines the sheaths of the tendons, or is smeared over the muscular surfaces, or infiltrated between the fibres. The muscles of the back of the fore-arm, and those of the calves of the legs near a joint, are most frequently attacked.

These depositions of pus are often so sudden as to have led Dance to believe them not to have arisen from any inflammatory process; he describes them as occurring "à l'insçu du malade et du medecin."

The joints are nearly as often the seat of disease as the muscles, and the same fluid mixture of serum and lymph, or pus coloured with blood, is deposited in them largely. The only tissue which I have never seen primarily attacked is the osseous; wherever it has been diseased, the attack has succeeded inflammation of the synovial membrane and ulceration of the cartilage. Besides depositions of pus in certain portions of the frame, I have seen two other states of the limb which are connected with and traceable to the cause originating puerperal fever. In the

one, the malady looks like erysipelas, and the cellular membrane is infiltrated with serosity, and the muscles underneath the skin softened and rendered of a pale brown colour. Coulson has published some cases exemplifying this form of erysipelatous disorganization, in which no peritonitis, nor any disease of the venous coats could be detected after death. Of the connection between erysipelas and puerperal fever, I may say that these two maladies are generally coexistent in our hospital, and that when the mothers die of puerperal fever, their infants perish of erysipelas. Gordon, in the history of the Aberdeen epidemic, and Hey, in that witnessed at Leeds,—both observed the same connection. The inference is obvious, that those causes which produce the one, favour the other. In the other state of the limb, the leg (for I have never remarked it in the superior extremities) is attacked by a disease so exactly resembling phlegmasia alba dolens, as to leave no doubt in my mind that they are one and the same malady. I have so frequently known this affection arise out of puerperal fever, that I have no difficulty in subscribing to the opinion of Legallois and Professor Busch (of Berlin), that the malady is only puerperal fever modified by its locality. In most cases of swollen leg the vein is thickened. In some I have not been enabled to find this lesion, and believe that pus in the lymphatics will produce the same effects as when circulating in the vein. Lastly, much of the pain in

the limb arises, in cases where there is not much swelling, from inflammation of the nervous trunks, which are clustered over with minute vessels, and are redder in colour. I have not seen that which Campbell repeatedly asserts, that the nerves coursing over the peritoneum are likewise much enlarged in puerperal peritonitis.

The skin is in a certain number of cases only, attacked, and there is a shifting erythema; or, as Helm has lately remarked, a scarlatina puerperalis.

Besides these, this formidable malady may be accompanied by what has been termed the gangrenous diathesis. I have known the calf of the leg become black and gangrenous in four hours. The most favourite spots of gangrene, however, are the vagina, vulvæ, and sacral region.

The eye is not unfrequently the seat of this destructive disease; even they in whom the suffusion is slight, when it is accompanied by burning pain in the ball, will run much hazard of blindness. Purulent effusion into this organ, and its total destruction, are by no means uncommon.

In the thirteenth volume of the Medico-Chirurgical Transactions, Dr. M. Hall and Mr. Higginbottom have given five or six examples of this affection of the eye, which they seem to regard as "a singular and peculiar puerperal malady," not suspecting its identity with puerperal fever.

"In one case there were all the marks of intestinal irritation; in the second, protracted diarrhœa; in the others, derangement of the functions of the bowels. In one case the eye was affected but a day or two, and but slightly. In two there was great chemosis, the transparency of the cornea was destroyed, and the eye appeared collapsed during life. In the fourth the patient survived the ulceration and sloughing of the cornea, and the total destruction of the organ, and the subsequent healing of the part.

"There was, soon after the appearance of the disease, a local inflammation, situated in the integuments, first observed on the hands, but found on a careful examination at the same time, or shortly afterwards, on the inferior as well as the superior extremities. In one case only there was no such cutaneous inflammation, but the patient having been bled, there were inflammation and suppuration of the vein. In two cases the cutaneous inflammation was diffuse, little elevated, and extremely tender to the touch. In the fourth there were numerous patches of inflammation, which were very extensive, and led to equally numerous and extensive formations of pus."

The authors notice slight abdominal tenderness only in one case.

When this fourth form of puerperal fever is prevalent, and the characteristic of the epidemic, one in

three dies in the London hospitals, I believe, under any treatment; and if the complications be many, this mortality will be still increased; and the most judicious and the most humane act is to shut up these receptacles forthwith.

Such is the experience of William Hunter,—of those who have witnessed its plague-like ravages in the Continental hospitals,—and such is mine. Happily, however, this form of puerperal fever exists with such fatality in hospitals alone. I believe that the single chamber of the pauper is more wholesome than the spacious ward of the hospital patient; while in private practice, among the well-housed and well-nourished, the milder forms are the commonest.

In this form we find great variations of intensity of attack, as well as in the grouping of organs attacked. Different epidemics present singular diversities in these two particulars. In one year there are no muscular abscesses, in another no uterine softening, and yet the generic characters and the main features in both are the same. Tenon, and the elder French authors, give curious examples of the prevalence of certain symptoms in one year, and their omission in another. (Baudeloque.)

As to the organs attacked, taken isolatedly, my experience proves to me,—1. That each organ may undergo every grade of disease, from simple irritation which will not proceed further, to total destruction and softening of its tissues. 2. That

when many organs are attacked at once, or consecutively, they are not wrought up to one uniform pitch of malady; that while one is simply irritated, another is gangrenous. Thus I have seen co-existent, inflammation of the peritoneum, with painless and sudden perforation of the œsophagus. What are our indications for such a disease, and what our hopes of cure?

CHAPTER II.

MORBID ANATOMY OF PUERPERAL FEVER.

THE VALUE AND INFLUENCE OF CERTAIN SYMPTOMS, IN ESTIMATING THE RESULT.

PERITONEUM.

This membrane, after having been the seat of pain during life, is often quite pale after death. It is probable that vascularity really existed, and has only disappeared, as after fatal scarlet fever or erysipelas. The longer the duration of pain, the more intense will be the redness, and the greater the thickening of the peritoneum. It is much oftener partially than generally inflamed, and where generally, the inflammation is unequally diffused.

The portions most frequently attacked are, 1. The uterine peritoneum, and the ligamenta lata. 2. The peritoneum of parenchymatous organs. 3. The muscular peritoneum. The intensity of the inflammation follows this order.

The products of inflammation are,

1. Effusion of serum and lymph, in quantities

much greater than are found in peritonitis in the male. Dupuytren and Bayle have proved, however, that this effusion varies in none of its chemical constituents from the results of ordinary peritonitis.

2. Blood, which is discovered as ecchymosed, or as tinging the serosity.

3. Pus, which is usually found in largest quantities low in the pelvis, at the back of the uterus, and near the ovaries. It is often contained in a cyst, which apparently is merely a concretion of the outer surface of a globe of pus. Sometimes it is effused under the peritoneum of the uterus, but most frequently at the iliac fossa.

4. Coagulable lymph, varying in consistence from that of curd to the firmness of a perfectly transparent false membrane, binding adjacent parts together.

In some cases the peritoneum appears gangrenous; oftener, however, this appearance is owing to a putrescent layer of dark lymph.

INTESTINAL CANAL.

Although the seat of much disorder, few changes are discovered in the mucous membrane. Out of twenty-seven cases, collected from Ribes, Bouillaud, Velpeau, and Legallois, I find but six in which this membrane was altered, and twenty-one in which it was quite free from the marks of disease.

The principal changes are, 1. Inflamed patches. 2. Softening and perforation. 3. Ulceration.

The stomach is often softened, and its mucous

membrane easily scraping off; between this and the muscular coat, when there has been much vomiting, there is an effusion as transparent, as coloured, and as consistent as currant jelly.

This organ is often perforated after softening. Dugés has remarked that the brown viscid matter exuding from the perforated portion of the stomach, seems to act on the neighbouring organs, like a caustic, adducing as a proof of this surmise, the fact of his finding a continuous series of perforations of the diaphragm mediastinum, œsophagus, and lungs,—all in the immediate vicinity of a perforation of the large extremity of the stomach. Other parts of the intestines may be perforated and softened.

The intestines are usually distended with air, or filled with large quantities of a brownish green fluid, which often accumulates along the whole length of the canal, from the upper part of the œsophagus to the rectum.*

The liver is the oftenest affected of all the parenchymatous abdominal glands. Its peritoneal coat is not unfrequently covered with a layer of lymph when every other part of the peritoneum, except the envelope of the uterus, is sound. The substance of this organ is very frequently gorged, distended, and softened; occasionally, though rarely, it may con-

* Campbell had this fluid analysed by the celebrated chemist, Murray, of Edinburgh, who found it to be a modification of bile; being composed of resinous matter, mucus, gelatine, and small proportions of phosphate of lime and muriate of soda.—Campbell's Treatise on the Epidemic Puerperal Fever, p. 181.

tain abscesses. When there is much hepatic or uterine lesion, the spleen will be found quite broken up, and of the consistence and colour of treacle, entangled in a cellular web.

The kidneys present inflammation of their peritoneal coat, depositions of pus, and flakes of lymph, alterations in their veins, softening and great engorgement; both kidneys are rarely attacked at once.

The ureters and bladder are oftener the seat of pain and congestion than of disorganized structure.

UTERUS AND ITS APPENDAGES.

The peritoneal coat is very frequently injected, covered with lymph, or raised by a subjacent layer of pus or blood, or both.

Its substance is soft and flabby, and its contractile powers so thoroughly suspended as to permit no diminution of its volume. It is as large ten days after delivery, as it was immediately after the expulsion of the placenta. Small abscesses are found occupying various depths of the uterine walls. There are patches of thoroughly dissolved uterine matter, the softening almost always commencing in the inner surface of this viscus, and sinking towards its peritoneal coat.

This softening belongs to that class of lesions which cause perforations in the stomach, and dissolutions of the muscles, so common in this malady.

The inner surface of the uterus is often smeared with a thick layer of gelatinous blood, underneath

which, patches of reticulated lymph, tinged greenish brown, or modena colour, are found. Cruvelhier, Dugés, Seiler have all looked on this layer as a false membrane, and not the remains of the decidua. I have examined the uterus to verify this opinion, and I am, on the whole, satisfied of its correctness. For, 1st, The membrane has all the characters of a recent exudation. 2nd, The decidua vera, and reflexa become much attenuated in the last periods of pregnancy, and adhere so firmly to each other, and to the chorion, as to pass away, in a great measure, with this membrane. This exudation is similar, as Cruvelhier has asserted, to the false membrane which covers an amputated stump, the surface of which bears so great an analogy to the condition of the uterus after the removal of the placenta. These membranous flakes are often putrid and very offensive. The point of insertion of the placenta is the most ordinary seat of all uterine lesion, whether of abscess, softening, or phlebitis; the next point, the large and congested, lead-coloured cervix uteri.

The ovaria and fallopian tubes are softened, and deeply injected with blood, serum, lymph, or pus; affording, therefore, lesions depending for their variety of consistence, colour, and turgor on various combinations of these fluids.

CHEST.

There is very often a deposit of turbid serosity and lymph in one or both cavities of the pleura,

having the same characteristics as that found in the peritoneum, and equally remarkable for its copiousness. The lungs are found in every grade of partial disorganization, from simple engorgement to complete dissolution, having all the characteristics of gangrene, except, in many cases, its peculiar fœtor. A minute description is unnecessary.

THE VASCULAR SYSTEM.

The heart is often enlarged, softened, and friable; its inner membrane deeply stained; lymph and serum are also occasionally found in the pericardium. There are white patches on the outer covering of the heart.

I have never remarked any peculiar disorganization of the great arteries; they are often intensely stained.

THE VEINS.

The uterine veins, forming a mesh-work, like the structure of the corpora cavernosa penis, are chiefly affected. The lining membrane is very often quite pale, though covered with false membrane or with pus. Their coats are thickened and their cavities obliterated, or contracted from interval to interval, when the disease extends beyond the uterine substance. When the neighbouring veins are affected, the adjacent cellular membrane is hardened or infiltrated, or forms a bed for purulent matter. The uterine veins are often found perfectly healthy when the spermatic or renal and still more distant veins

are thoroughly disorganized. Besides the presence of pus and lymph in the veins, gritty and grey, or light brown coagula are found. The mass of blood not unfrequently retains its fluidity after death.

In a certain number of cases no lesion can be discovered in the vein, but the presence of some unnatural fluid. It is disputed whether it is absorbed or the product of venous inflammation. It is of little moment which of the two opinions be adopted; the disease depends not on how the matter is produced, but whether it enters the circulation. Whether this be by absorption or by inflammation, puerperal fever is the result. The prevailing opinion of secondary abscesses being, not metastases, but new inflammations, is, I believe, the true one.

In the ligamenta lata the presence of pus may be almost always detected; it is usually more frequently found in the lymphatics than in the veins,—and, Cruvelhier is of opinion, that phlebitis is rare, in comparison with pus in the lymphatics. It is collected in small pouches, which give the lymphatic a beaded appearance, and render it readily traceable.

Cruvelhier has attempted to define the effects produced by pus in the lymphatics, as distinguished from those of phlebitis; but, after proceeding with a few observations, he throws the matter aside, apparently as inexplicable. There may be, and probably are, some constitutional modifications whether, in the one case, the vessels of the red, or those of the white blood, be the seat of purulent infection; but they are

yet to be discovered; neither Breschet, in his late work (on Diseases of the Lymphatics), nor Cruvelhier, having any thing satisfactory on this head. It will be seen, however, that all the effects attributed to phlebitis, strictly so understood, take place equally when the lymphatics alone contain pus. For this reason, throughout this essay, I have not attempted to distinguish between infection of the fluids from the veins and from the lymphatics: the results being, in essentials, the same.

HEAD.

Even though there be delirium and cerebral disturbance, lesions in the brain are very rare in puerperal fever. It is occasionally softened (Dance), or there is arachnitis once in 266 times (Dugés.)

LIMBS.

They are subject to purulent deposits or effusions of serum and blood;—

1. In joints or in muscles. The following is the order of frequency of attack, according to Dugés:—

1. Hip. 2. Elbow. 3. Knee. 4. Foot. 5. Metacarpus. 6. Shoulder.

I have found the elbow and knee more frequently affected than the hip. But Dugés' is a larger experience.

2. Pus in the muscular substance, or in the cellular membrane, is rather infiltrated than contained in a cyst. The muscular fibre is rendered quite soft,

and sometimes pultaceous in circumscribed spots, around which the immediate structure is perfectly healthy.

3. When, instead of pus, serum or sero-sanguinolent fluid is infiltrated into the limb, it has the exact appearance of erysipelas—dusky on the skin, and swollen, and filled with fluid below it, the muscles being soft and of a pale brown colour. As to the extent of these infiltrations, they are circumscribed to a few inches, or extend between two joints, now and then, though rarely, along the whole arm.

The body is more rapidly decomposed after death from puerperal fever, than from any disease with which I am acquainted. Dugés asserts, that in summer carbonic acid and hydrogen gas are found in all the cavities in twenty-four hours after the patient's decease, and Martens, in twelve to eighteen hours. He also affirms, that, contrary to the usual course, the internal organs putrify before the external.

Such is a succinct history of the ravages produced by puerperal fever. M. Dugés and M. Tonellé have each attempted to reduce their results into a statistical form. The latter is chiefly to be relied on for his minute accuracy. Both, however, have accumulated a number of cases of dissections which can nowhere be obtained but in such large lying-in hospitals as those of Paris. The number of dissections I have made are sufficient to establish the existence of all the lesions I have detailed; but they are not sufficient to

establish their relative frequency, which it is obvious can be of value only when the basis of calculation is very large. Besides this, in my earlier investigations, I was not aware of the best mode of examining the uterus for the detection of diseases, with which I am now familiar. I have, therefore, merely appended to each case its morbid anatomy, without attempting here to tabulate the result.

M. Tonellé's results are taken from a sum total of 222 dissections. M. Dugés' of 341.

These conclusions I shall here reproduce, as permitting me to base some inferences of my own on a foundation less partial than my individual experience.

TONELLÉ.

Total number of cases 222.

I.

Peritonitis	193
Alterations of the uterus and its appendages	197
Combined lesions of the uterus and peritoneum	165
Peritoneum alone affected	28
Uterus alone	29

II.

Alterations of the uterus, &c.

Simple metritis	79
Superficial softening	29
Deep softening	20
Inflammation of the ovaries	58
Inflammation of the ovaries with abscess	4
	190

III.

Alterations of the vessels.

Pus in the veins	90
Pus in the lymphatics	32
Pus in the thoracic duct	3
With suppuration of the lumbar and inguinal glands	9
	134

Combinations.

I.

Suppuration of veins and uterus . . .	32
and putrescence of uterus	11
with metritis and softening	5
with peritonitis alone .	34
Suppuration of veins alone	8
	90

II.

Suppuration of lymphatics and veins . .	20
and uterus . .	13
with simple softening of the uterus .	6
with simple peritonitis . . .	3
Suppuration of lymphatics alone . . .	2
	44

III.

Inflammation of the ovaries with peritonitis alone	29
with various uterine lesions	27
with metritis alone	8
with uterine softening	7
with suppuration of vessels	12
with all the preceding lesions	6

From the foregoing tables M. Tonellé infers:— 1. That the uterus is more frequently attacked than the peritoneum, by a slight excess in the relative numbers. 2. That these two lesions are mostly combined. 3. That each may in turn fail. 4. That in 222 cases, pus was found in the vessels 134 times.

SECONDARY AFFECTIONS.

Chest.

Pleurisies	29
Effusion of blood	6
Effusion of serosity	8
	43

Alteration in the lungs.

Pneumonia	10
Tubercles	4
Abscess	8
Gangrene	3
Pulmonary apoplexy	2
	27

Heart.

Dilatation	4
Hypertrophy	3
Pericarditis	1
Hydropericarditis	6
	14

Abdomen.

Stomach softened	8
perforated	5
ulcerated	5
Gastro enteritis	1
enteritis	4
Entero-colitis	1
	24

Abscesses, &c.

Abscess of the liver	3
pancreas	2
muscles	14
Infiltration of blood in muscles	3
	22

Abscess of joints.

Pubes	2
Elbow	2
Knee	6
Alteration of the cellular membrane of the pelvis	6
sanguineous infiltration	2
	18

DUGÉS.

The total number of deaths was 341.

In these peritonitis occurred 266 times.

Of the 266 peritonitic cases the womb was affected 3 cases in 4.

If cases in which there was pus in the veins were abstracted,—cases, according to Dugés, not proving phlebitis, but mere absorptions of the purulent matter, then the ratio of metritis was much lowered, being 29 in 266, or 1 in 9.

Ovaria affected	1 in 7
Perforation of the stomach	10 „ 266
Inflammation of stomach and intestines	4 „ 266
Pleuritis (single or double)	40 „ 266
Pericarditis	6 „ 266
Arachnitis	1 „ 266
Purulent deposit in muscles	8 „ 266

The conclusions from Tonellé receive confirmation

from Dr. Robert Lee, who has given us the result of forty-five dissections:—

Peritoneum and its appendages were inflamed in	32
Uterine phlebitis in	24
Softening of muscular coat of uterus . .	10
Pus in the absorbents	4
	70

As the number of lesions is greater than the number of cases, several lesions must have occurred in the same example.

Out of forty-five cases, the peritoneum was unaffected it would seem in thirteen, and there was no phlebitis in seventeen.

If the reader have considered the ample and minute table before him, I will at this stage ask, in what consists the essence of puerperal fever? and request he will expend some thought on the question, before he turns to the chapter in which it is attempted to be discussed.

I will now merely add a few remarks as to the value of symptoms. It will be seen from my tables, that peritoneal pain must be abandoned as a pathognomic and characteristic sign of puerperal fever, since in nineteen cases, no such pain was there. In the thirty-three cases detailed at length by Dr. Robert Lee, eight exhibited no peritoneal pain at all. Of the

nineteen I have noted, eleven died. Hence the most mortal cases are precisely those where peritoneal pain is absent. By comparing the duration of the attack of pain with the duration of the whole disease, we shall see that peritoneal affection is often of very little value as a mark and sign of danger, or even of the probable length and course of the malady. Where the peritoneal pain is great, and sustained, it marks a less dangerous attack; but on this head nothing certain can be inferred, since we cannot measure the action of the complications accompanying it.

The number of patients who had no pain, was			19
ditto	who had pain for	1 day	51
ditto	ditto	2 days	48
ditto	ditto	3 days	22
ditto	ditto	4 days	18
ditto	ditto	5 days	6
ditto	ditto	7 days	5
ditto	ditto	8 days	4

The others had either successive attacks and remissions, or constant tenderness of the abdomen when pressed — showing the existence of morbid action.

HEAD AFFECTIONS.

Of two hundred and four cases of the tables, ninety-eight had some head affection, and of these thirty-nine died. Of the one hundred and six who had no head affection, twenty-seven died; hence any cerebral disturbance diminishes the chances of recovery. If

the graver kinds of cerebral oppression be taken, we find that of the ninety-eight above alluded to, forty-three were delirious, and of these forty-three, thirty-nine died; hence the presence of delirium in any case is almost always followed by a fatal result.

In one hundred cases of Dr. R. Lee, we find thirty-seven had some cerebral disturbance; eighteen were absolutely delirious, and of these fifteen died.

INTESTINAL CANAL.

Of two hundred and four cases, a hundred and twenty exhibited symptoms of disorder in the intestinal canal; of whom fifty died. Hence about three-fifths of any number of puerperal fevers, are characterised by intestinal disorder. The presence, therefore, of this complication is not very unfavourable. In epidemics, where it is the principal, or the most urgent symptom, the mortality is very slight.

AFFECTIONS OF THE CHEST.

In two hundred and four, forty-nine exhibited chest affection, and thirty died.

DEPOSIT.

In two hundred and four, in forty-four there was some deposit in the external parts, and of these twenty-one died.

LOCHIA.

Noted only in eighty cases with any accuracy, of which forty-six exhibited some disorder in the secre-

tion; which was either offensive, scanty, or suppressed.

In one hundred cases, I collect from Dr. R. Lee's tables, that the lochia were suppressed in forty-four, and offensive or scanty in seven; so that his results and mine agree in making one-half of the cases complicated with obvious lochial disorder.

With regard to the value of particular symptoms in estimating danger, I have only to remark, that as neither peritoneal pain, nor thoracic affection, nor lochial or intestinal disorder existed separately, so the positive value cannot be determined; but the above point out the general influence of these complications pretty accurately.

CHAPTER III.

NATURE OF PUERPERAL FEVER.

An ophthalmia, an ulcerated joint, an acute peritonitis, may co-exist with gangrene in various parts of the body, and be accompanied by fevers of varying character; or these evils may follow each other in rapid succession. How are such phenomena to be accounted for? Are there as many specific causes as there are diseased actions in the attacked organs? or is there but one source for these manifold affections, and if so, what is it, and by what law is the march of the malady regulated?

Such are the questions which arise in viewing this complicated and most difficult subject. It is impossible to set them aside, nor is it advisable; for unless we endeavour to group particulars, and sift out the secret link of truth which binds them, they soon become useless, overwhelming the mind by their multiplicity and confusion.

The three following propositions embody my views of the source and nature of puerperal fever.

I. The phenomena of puerperal fever originate in a vitiation of the fluids.

II. The causes which are capable of vitiating the fluids are particularly rife after child-birth.

III. The various forms of puerperal fever depend on this one cause, and may readily be deduced from it.

By the first proposition, I shall endeavour to shew that the cause assigned will account for the phenomena of puerperal fever. By the second, I shall prove that the assigned cause really exists; and by the third, I shall endeavour to trace the various forms of puerperal fever to the one source from whence all of them proceed.

Proposition I.

THE PHENOMENA OF PUERPERAL FEVER ORIGINATE IN A VITIATION OF THE FLUIDS.

There are two series of facts which shew the effects of the circulation of vitiated fluids in the animal frame; viz. the vitiation of the blood by the artificial introduction of various substances into the blood vessels; and its vitiation from certain diseases, such as scurvy, purpura, icterus, &c. The general results common to both these classes are, 1. The tendency of the blood to escape either in the form of pure

hæmorrhage or ecchymosis, or mixed with mucus or serum; and 2. The existence of a variety of local affections in different parts of the body at the same time.

If the vitiating substance be introduced artificially into the circulation, its great effects almost always, though certainly not invariably, are seen in organs and tissues in the immediate neighbourhood of the point of insertion. Hence, in experiments in which the vessels of the neck have been injected with certain substances, the head and chest are chiefly involved. If those of the lower extremity be taken, the abdomen will become most affected.

With these general remarks I proceed to analyze the experiments of Gaspard* and Cruvelhier,† which shew the effects of the circulation of a vitiated blood.

If pus be injected into the veins in small quantities, it causes considerable functional disturbance, but does not kill. If introduced in larger quantities it causes death, by producing various phlegmasiæ.

Exp. 1.—Two drachms of fœtid pus were injected into the jugular of a dog. It caused instant agitation, gulping; then great prostration, moaning; repeated vomiting during the day; towards evening the respiration was scarcely perceptible, the pulse feeble, and the paws extended. In ten hours after the injection, there were black, liquid, and extremely fœtid motions, which gave immediate relief, so that

* Journál de Physiologie, par Magendie, tomes i. ii. iv. v.

† Nouvelle Bibl. Med. t. 4.

the animal completely recovered on the following day, when it was subjected to a repetition of the experiment. Three drachms of the same pus being now injected into the same vein, similar symptoms were produced, but death took place in twenty-four hours, preceded by frequent white motions. On dissection, no appreciable change of structure was discoverable.

These two experiments were reiterated on a greyhound. The first injection caused fever, vomiting, great prostration, and diarrhœa, which relieved the malady. The second injection killed, as in the former instance; and, on dissection, nothing but hepatisation of the lower lobe of one lung was found.

In these four experiments we remark, that an increase in the quantity of the poison increases the danger; that the injection gave rise to fever, accompanied by gastro-intestinal irritation, exhibiting a group of symptoms similar to those which mark my second form of puerperal affection; that while there was intestinal irritation, there was inflammation of the lung.

Exp. 5.—Three drachms of recent pus were injected into the jugular of a small thin scorbutic dog. In three minutes there was abundant secretion of urine; then reiterated vomiting and attempts to empty the bowels; to this succeeded stiffness and emprosthotonos, followed by renewed vomiting; very fœtid evacuations, which, however, relieved the animal; after which, harassing tenesmus and death

in five hours. On dissection, the intestines were found thickened, and the rectum and colon especially much inflamed.

Exp. 6.—Half-an-ounce of putrid pus injected into the jugular of a healthy dog, caused first, violent vomiting, and then the most frightful nervous symptoms: exalted sensibility, bewildered vision, involuntary jerkings of the whole frame; convulsive fits, followed by great prostration, hiccup, short and painful howling, tottering and objectless walk, ardent thirst, dyspnœa, violent palpitation, and death, preceded by frightful convulsion. The venous blood was found to be very coagulable; the pericardium contained a little serosity; the left ventricle was thickened and inflamed, and petechiæ formed on it by a kind of concretion; all other organs were healthy.

These two examples, but especially the latter, bear a striking resemblance to those cases of puerperal fever, which Tonellé has termed the ataxic, and which answers to my nervous form. Dr. Robert Lee has remarked, that these nervous symptoms were caused by the circulation of pus in the veins. And Tonellé relates five cases of puerperal fever—all of which terminated fatally, resulting, as he believes, solely from great functional disturbance, caused by the absorption of pus; for the organs of the body were all healthy, or but slightly touched, the chief lesions being pus in the veins, or lymphatics. In the

first there was delirium, great prostration, and fever; in the second, the same; in the third, delirium, intense fever, and nausea; in the fourth, the nervous system was still more deeply affected, for the delirium and prostration were preceded by sleeplessness, dulness of vision, vomiting; and in the fifth, there was headache, ringing in the ears, delirium, vomiting, agitation, and depression;—in all there was more or less of abdominal pain. It is remarkable that Tonellé, in the fourth case, should find slight hypertrophy of the left ventricle, while Gaspard also sees, in his sixth experiment, inflammation of this part produced by the direct injection of pus.

Great and sudden functional disturbance often arises in the midst of any of the other forms of puerperal fever, and it is no uncommon circumstance to find a patient, who has hitherto exhibited no irregularity of symptoms, rapidly become agitated or delirious, and then sink to so low a state as to require instant and copious supply of stimulants to prevent impending death. This condition may last several hours, when a reaction takes place, and the malady once again resumes its common and usual course.

From these six experiments of Gaspard, we may conclude that the vitiation of the fluids will produce general fever, with local irritation or inflammation of different organs at the same time; that in the first four this fever was accompanied with gastro-enteric disorder; in the other two, by general func-

tional disturbance, resembling the nervous form of puerperal fever.

In these experiments, however, although there were some coincidences, as that of inflamed heart, in Tonellé, 4th case, and Gaspard, 6th experiment; still it remains to be proved, that a vitiation of the fluids will produce the other phenomena of puerperal fever,—the peritoneal pain and effusion; the abscesses in the muscles; the suppuration of the eye; inflammation of the lung; and gangrene.

I have stated, that the organs nearest the vessels injected by the vitiating substance, are first and most violently attacked, but that this is not always the case. In order, however, to re-produce the symptoms of puerperal lesions by experiment, the arterial or venous trunks near, or in the abdomen, should be chosen for the introduction of the vitiating substance.

Exp. 14. p. 22.—Half an ounce of putrilage, made up of dogs' blood and beef gravy, was injected into the jugular of a dog. There was instant gulping, dyspnœa, evacuation of fæces. In an hour great prostration, frequent gelatinous and bloody alvine evacuations. A *red conjunctiva;* painful chest; death preceded by bilious, gelatinous, and then bloody vomiting.

The lungs were gorged, violet in colour, and covered with ecchymoses; so also were the left ventricle, gall-bladder, spleen, and even the sub-cutaneous tissues.

The *peritoneum* contained serosity. The chief violence of the disease was expended on the mucous membrane of the intestines, the rectum and duodenum being quite livid, and covered with matter like lees of wine.

Here we have a slight affection of the peritoneum, when the jugular was injected.

In Exp. 19 and 20, the putrilage was allowed to be absorbed into the circulation, by being merely insinuated into the cellular membrane of the *groin*. There was immediate pain; copious evacuation of urine, which Gaspard considers as a critical secretion; vomiting; tenesmus; abdomen tender to pressure; frequent vomiting and dejection.

On dissection, a quart of bloody serosity was found, in a violet-coloured and ecchymosed peritoneum. A universal inflammation of the mucous membrane of the intestine; ecchymosis on the spleen and lungs; and serous effusion into the left pleura.

In these examples we have the general effects of a morbific matter in the circulation, produced as readily by absorption as if it had been directly injected into a vein; while the special action on the peritoneum, which was slight in the former, is severe in this case.

Exp. 7.—Two drachms of pus were injected into the tunica vaginalis of a small dog. There was little or no pain; vomiting; extreme efforts to void urine;

fever; dyspnœa. In three hours swelled and tense abdomen, very painful to pressure. Death, preceded by fresh vomiting.

Dissection. — Peritoneum reddish; slightly inflamed, containing inodorous sanguinolent serosity; mucous membrane of the intestine a little red and inflamed.

Exp. 8.—The experiment was repeated on a still smaller dog, with the same results: vomiting; fever; tense and painful belly; liquid and fetid evacuation; and on dissection, there was peritonitis, with effusion of albuminous flocculi, and reddish serosity; inflammation of the mucous membranes.

Exp. 15, vol. iv. p. 45.—Some putrilage, diluted with weak vinegar and water, was injected into the jugular of a dog. There was immediate vomiting, followed by painful respiration, tender belly, shivering, fever, black dejection, and death in eighteen hours.

Dissection.—Much very red serosity in the peritoneum, which was otherwise healthy; black granules of blood over the mesentery and omentum. Stomach contained black liquid, like soot and water. The mucous membrane of the intestines every where healthy, except at the rectum, where the rugæ were violet, and at the duodenum, which was of the colour of pale lees of wine. The muscular tissue of the intestines, the gall-bladder, the spleen, mesenteric glands and diaphragm, the lungs, mediastinum, and pericardium, were all ecchymosed. The wall of the

right ventricle was gangrenous and perforated, like a rotten sponge, through the sieve-like holes of which the blood had escaped, and distended the pericardium. There was an erosion at the apex of the heart.

In Exp. 19 and 20, vol. iv. where a similar injection had been used, besides producing the usual effects on the intestinal canal, the conjunctiva became red, then discharged a puriform matter, and ultimately, in both the examples, the cornea became opaque, and remained so.

In Exp. 8, p. 3, half an ounce of mercury was injected into the left carotid of a sheep. All the organs of the left side were found inflamed, and the left eye in suppuration. These experiments are sufficient to shew that vitiation of the blood will produce many of the peculiarities of puerperal fever, viz. local affections of the peritoneum and eyeball.

Gaspard's attention having been principally addressed to the effect of his experiments on the internal organs, he has only a few and unimportant remarks on the injuries which the muscles suffer from a circulation of vitiated blood; but Cruvelhier, who instituted similar experiments, but with a view of determining the effect on the capillaries, has given us ample means of proving, that precisely the same lesions which we find in the muscles and joints in puerperal fever, may be artificially produced by vitiating the blood.

Exp. 6, p. 19.—Some ink and water was injected into the femoral vein from the trunk towards the extremities. The same quantity was injected into the artery of the opposite limb. The arterial limb suffered little, while the venous became enormously distended, and the animal died in twenty-four hours.

In the venous limb, there was a large quantity of red serosity infiltrated into the cellular tissue, which was traversed in every direction by dilated venous capillaries. There were deposits of blood in the substance of the muscles; other muscles were of a deep red colour, and in these the muscular fibre seemed replaced by coagulated blood. These portions were readily tearable, yet the healthiest fibre was in immediate contact with them. The arterial limb was little affected, exhibiting nothing but an increase of flaccidity.

In six other experiments, in which ink and water, or alcohol, was injected into the femoral vein only, the ink always caused more pain than the alcohol. In four cases death took place in twenty-four to forty-eight hours.

The limb, on dissection, was found infiltrated with blood and serum. The lymphatics, and the glands of the groin, were swollen, and the latter softened. The muscles, both in their substance, and in the interstices of the fibre were filled with black blood.

Exp. 10.—Tincture of Campechy wood and water being injected into the femoral vein, the whole inferior extremity was burrowed out with pus.

Exp. 11.—Mercury was injected into the crural vein without causing pain during the operation. The tumefaction of the limb was not great. Death occurred in thirty-six hours. The mercury was found in all the veinules and veins of the injected extremity, especially in those of the muscles.

The crural and iliac veins, cava, the vena and the pulmonic artery, contained mercury. The blood was concrete in the crural, iliac, and cava.

Exp. 13.—A thin piece of wood was introduced into the femoral vein as far as the ham, and another into the external iliac vein, which was thrust up as far as the ascending cava.

The object being to ascertain, whether the inner membrane of veins were sensible; the most violent friction was used, but it did not produce any sign of pain. Considerable tumefaction of the limb ensued. The animal was much oppressed, and died on the sixth day. The whole extremity was infiltrated, and the infiltration extended to the thorax of the same side.

Dissection.—The subcutaneous capillaries were much developed. The skin adhered to the aponeurosis, at the ham and along the femoral vein. On dividing the muscles, pus flowed out evidently from the small veins, for, from these, it could be squeezed. The muscular tissue was fragile and penetrated with blood—in a word, in that state of red induration which precedes suppuration; and by the side of these diseased portions, the muscular fibre was perfectly healthy.

There was pus in the femoral vein, but branches perfectly healthy were given off by the side of others filled with pus, without Cruvelhier being able to say what caused the different states of vessel.

The venous suppuration ceased near the knee; and none but the superior muscles of the leg contained the inflammatory centres.

The synovial capsule of the knee contained pus, and its veins were admirably injected. The piece of wood buried in the external iliac had reached the second lumbar vertebra. The epigastric vein was filled with pus, and was the only collateral vein inflamed, and its inflammation was confined to its trunk. The pus contained in the iliac was reddish and viscous; false membranes lined the veins; and clots indicated the limits of inflammation; the surrounding tissue was dense and fragile; the inner surface of the vein was neither red nor vascular.

From these and other experiments, Cruvelhier concluded, by believing that in inflammation the veins are chiefly affected; that the redness is venous, that the pus effused is from a simple rupture of veinules; that in inflammations of degenerate tissues, it is the veins which are developed, as in soft cancer and cephaloid tumor. Without entering into this hypothesis, we see that there are two sources from which the blood may be vitiated—either by the primary injection, or absorption of injurious substances; or by direct injury to the solid coats of the

veins, which in consequence inflame and *secrete a fluid or fluids, which mingling with the torrent of the circulation,* act as if they had been primarily injected.

The term phlebitis, as applied to the whole train of symptoms arising from mechanical injury to a vein, appears to me to be erroneous; for inflammation of the coats of the vein certainly is not the essential, but merely the remote cause of this formidable malady. A very large space of an important vein may be obliterated by inflammation, and yet the symptoms shall vary greatly from those of puerperal fever; and again, in the fatal cases of phlebitis, how often is there no visible injury in the vein; and how often, when visible, is it merely confined to a few inches, or even half an inch. In the elaborate Paper on Phlebitis, published by Mr. Arnott, that gentleman concludes, that death is not occasioned in these cases by extension of inflammation of the vein to the heart, as was supposed: for in phlebitis occurring after bleeding, the inflammation did not reach even the axillary vein, in one-half of the whole number of cases; and in not one was the superior cava affected. The cause of death must therefore, in these examples, be sought for in something beyond the injury sustained by the venous coats. Hence pus circulating in the blood, the result of the local venous injury, has been assumed to be the cause of the fatal secondary effects of phlebitis. But

Mr. Arnott has shewn, that though this is the principal, yet it is not the sole cause; for though pus was found in the vessels in fourteen out of seventeen fatal cases, in two lymph alone was detected, and in one there was neither pus nor lymph.

Gaspard's and Cruvelhier's experiments prove, that many substances will produce the same fatal effects, and by the same disorganising process; that mercury, thick unctuous substances, acrid fluids, gritty powders, and bits of stick when placed within the vessels, all produce the same essential train of symptoms; while saliva, milk, urine, bile, cause little disturbance. Many of the deleterious substances produce no action on the coats of the large vein, and yet the symptoms resulting are precisely those which a wound and inflammation of the vessel will give rise to.

In the first case we are certain the cause of death is to be sought in the action of these substances, not on the injured vein, but on the blood. And in the second, we are equally certain that those very fluids are poured out by the inflammation of the vein, which if injected into an uninflamed vein of a healthy animal, would produce death. We should conclude, therefore, that it is the vitiation of the blood, and not the inflammation of the coats of the vein, which produces the disease.

It may be said, that though it be granted that the phenomena consecutive of artificial vitiation of the

blood strongly resemble those of puerperal fever, yet that this identity of cause may after all be only a probable surmise, and that no certain conclusion ought to be drawn, unless it could be proved that putrid substances absorbed by the uterine vessels produce puerperal fever.

Such an experiment has unfortunately too often been made; and Gordon, Campbell, and Kirkland, have most distinctly acknowledged, that retained and putrid placenta or coagula will produce a genuine puerperal fever, not to be distinguished from that they have each described.

Their testimony is the more valuable, since it establishes a point beyond that for which I am now contending — namely, that this cause will also produce a purely inflammatory disease, requiring free depletion.

The following cases and opinions confirm these observations:—

CASE FROM GORDON.

"The cause of the fever in this case was the application of putrid matter to the uterus, from a fœtus which had been retained for a considerable time after death, and was in a very corrupted state. The patient was seized with a shivering fit the third day after delivery, to which succeeded a violent pain in the abdomen, with a pulse of 140 in a minute.

She was bled, and purged, and cured on the fifth day."*

RETAINED PLACENTA.

"I am equally of opinion that fever arising from retention and putrefaction of the secundines, is identically the same with the noted puerperal fever; for it is accompanied with the same symptoms—intolerable head-ache from the commencement, prostration of strength, soreness of the abdomen, fœtid breath, and ultimately diarrhœa, with black vomiting. The appearances on dissection are also the same, exhibiting undeniable proofs of inflammation throughout the whole abdominal viscera, especially in the uterine system."†

"There are some other causes besides inflammation which bring on a puerperal fever, for it sometimes happens that coagulated blood lodges in the uterus after delivery, and putrifying from access of air, forms a most active poison, is in part absorbed, and brings on a putrid fever."‡

CASE I. §

"A middle aged woman, of a weak constitution,

* Gordon, p. 215. (Ed. 1795.)

† Campbell, p. 204.

‡ Kirkland apud Campbell, p. 204.

§ Baudeloque de la Peritonite Puerperale.

had a portion of the placenta adhering, which could not be extracted. The third day after her delivery strong pains came on in the hypogastrium; the fourth, her breasts were slightly swollen, and the pain in the hypogastrium increased. She lost pure blood. On the fifth, the loss continued, but the blood was black and fetid. Her tongue was yellow, her mouth bitter; there was much thirst and a feverish heat throughout the body. On the sixth, part of the placenta came away in a putrid state, and the loss ceased. The bitter taste in the mouth increased, she felt a weight in the epigastrium; diarrhœa came on, and the tongue became brown. The pain in the hypogastrium continued. The seventh, 25 grs. of ipecacuanha were given, fomentations of the abdomen, and aromatic injections were administered. The ipecacuanha had very little effect. The eighth, the hypogastric pain continued severe, the pulse was small, the tongue black, and the diarrhœa frequent and fetid; the countenance singularly altered. She remained lying on her back, her limbs in complete supination. Her skin was hot and dry all night—she had no sleep. The ninth, she took 30 grs. of ipecacuanha, and vomited yellow, bitter matter. The diarrhœa stopped. The pain in the hypogastrium increased. There was a loss of blackish blood, and a short time after there came away a portion of the placenta, and some extremely fetid clots of blood. The hypogastric pain was immediately relieved. The 10th, she

lay on one side. The 11th, the pain in the hypogastrium returned. A lavement of water was ordered, which caused an evacuation of very fetid bilious matter, and the pain abated. The 12th, the skin of the tongue pealed off. The 14th, she had a refreshing sleep; the pulse improved, and she felt hungry. The following days she had diarrhœa. The 21st, she went out cured, but weak. The fomentations and injections were continued up to the 10th. She drank alternately a vinous lemonade, and a tisane of acidulated gruel."

Case II.

"On the 8th May, 1701, the wife of an officer in a royal residence, living about four leagues off, having been delivered three days before, sent for me by the diligence. I found her with fever, the abdomen hard, tense, and so painful that she could not bear any thing over it, not even her chemise. The lochia had ceased for two days, and instead of them there exuded a serous matter, reddish, and inclining to black, of insupportable odour, with very violent darting pains, which occasioned my calling the mid-wife, who assured me that the after-birth was quite entire. But as circumstances seemed to indicate the contrary, I placed the patient in a position as if to deliver her, after which I introduced without difficulty my finger into the interior orifice of the uterus, where I found a small membranous substance. I

put another finger, and between them drew away this small substance. I then brought away several clots of blood. These were all most offensive, and several other similar ones came away during part of the night; but the lochia resumed their ordinary course, and in the morning I left the patient free from all the accidents with which on arriving I had found her seized, because by removing the cause, the effect was destroyed, and she became quite well."*

Hence, then, whether the blood be vitiated by primary introduction of certain extraneous substances, or by the secondary effects of previous inflammation of the vein, a series of morbid actions will arise, which reproduce all the injuries of puerperal fever.

The views I have advanced as to the real nature of this malady, may be farther supported by an analysis of three other series of facts, in all of which, there is a great resemblance to each other, and to the effects seen in puerperal fever. I mean,—1, The effects of wounds from dissections; 2, The viper bite;† and, 3, The effects of some acknowledged diseases of the fluid, &c. In all these, with very considerable differences, referable to differing causes, we have striking similarities; and in all, the solids are only secondarily affected.

* Delamotte Traité des Accouchements, p. 1176. edit. in 8vo.

† Fontana, sur le Venin de la Vipère.

But I trust, that what I have advanced, will be sufficiently pertinent to my conclusions, to permit me merely to indicate these sources of additional support. If the reader will compare these with the lesions of puerperal fever, and with those produced by injuries and wounds, after surgical operations,* with those produced by injections into the blood-vessels, he will find, that they all agree in disposing the body to effuse its fluids; to set up inflammations, of the most varying kind, in most distant and least connected parts of the body: that the anatomical characters of the lesions of puerperal fever, those following injections into the vessels, and those occasioned by injuries of veins, arising after surgical operations, and those from punctures in dissecting, are extremely alike, and that the variations are dependent, much more on the point at which the circulation has begun to be injured, than on any essential distinction in the nature of the maladies produced. In puerperal fever the injury is, almost invariably, in the uterus or its appendages; hence the frequent circumscribed peritonitis, metro-peritonitis, and ovarian disorganization.

In punctures, from dissection, the chest is first affected; in injuries of the head, the head and the liver, with which it is so intimately connected. In eight out of ten cases of phlebitis, following bleeding,

* Vide a Tabular Analysis of Mr. Arnott's Paper. Appendix.

the head and chest were the seats of inflammation, and in none was the abdomen affected.* In all, there is purulent or fluid deposit, in muscles, cellular membrane, the joints, eye, and in the centre of organs generally.

There is great accordance, even in their exceptions from this law; for, in all, it occasionally happens, that the commencing point of injury is not the most injured, but that it is passed over while the poison falls on some other part.

There are some peculiarities deserving attention, in the effects of injections of the arteries. In both Gaspard's and Cruvelhier's experiments, the operation was almost always intensely painful, unlike the effect of venous injections, which were painless.

It was found that gross substances, such as mercury, oil, extract of opium, did not readily permeate the arterial capillaries; and thus producing a mechanical impediment to the circulation, gave rise to rapid gangrene, or serous infiltration, or inflammation. Cruvelhier's experiments tend to show that substances injected into the arteries will produce varying effects, according to the greater or less facility with which they pass from the arterial into the venous circulation. If they are arrested in the former, there is gangrene; if they pass into the latter, we have all the complications of the so-called phlebitis,—abscesses in muscles,

* Arnott, Med. Ch. Tr. vol. xv.

in the eye, the joints, the liver, softening of the various tissues, inflammations of distant organs, and depositions of pus, blood, lymph, or serum.

Both experimenters agree in stating, that in the living body, the transmission from arterial capillary to venous, is extremely difficult.

The quantity of injection, whether in vein or artery, and the vigour of the animal, modified the result, says Cruvelhier, in the most singular way; a small quantity being eliminated by intestinal or urinary secretions, while a larger dose killed.

The quality of the substance also influenced the result. Alcohol produced less pain than ink (Cruvelhier). Many substances were innocuous, while others were extremely deleterious.

In whatever point of the venous system, except in the system of the vena portæ, foreign substances are introduced, they will ultimately be found in the lung, and there cause inflammation and tubercle.

It is by these two systems of the vena portæ, and of the pulmonary capillaries, that all substances transported in the circulating vessels are at last arrested or eliminated. And the late experiments of Tiedemann and those of Magendie prove, the one for the liver and the other for the lung, that these two organs are the great emunctories of the frame; and it is owing, perhaps, to this, that they, of all the organs of the body, are the seats of the greatest number of maladies.

Proposition II.

THE CAUSES VITIATING THE BLOOD ARE PARTICULARLY RIFE IN THE PUERPERAL STATE.

We have seen, that all the accidents of puerperal fevers may be produced artificially by vitiating the blood; and that the blood may be vitiated in at least two ways—by direct insertion of noxious matter into the blood-vessels, as in inoculation, injections, poisonous bites; or it may be vitiated by injuring the solid vessels mechanically, thus creating inflammation, which inflammation furnishes the matter that is conveyed into the torrent of circulation to infect the blood. We have also seen, that putrid animal substances are among the most noxious poisons to the blood; that besides these, there are many animal fluids, which, though not putrid, still are extremely injurious—as pus, lymph, and especially the recent exudations caused by inflammation of the serous membranes.

We may ask, therefore, whether these two conditions of danger are present in the puerperal state:—1. Are the vessels mechanically injured? 2. Are they in contact with any noxious matter?

It will at once, I think, be acknowledged, that the uterus after child-birth combines both these conditions. All the uterine veins and arteries have been torn from the placenta, and they form a part of a

large wound, and are, therefore, bathed in all the secretions which necessarily take place while this wound is healing. In this respect, the uterus presents an exact analogy to the surface of an amputated stump; and it is, therefore, not surprising, that the secondary evils of amputation should be so similar to those of the puerperal state. Cruvelhier has seized this analogy in its minutest detail; and as I have verified his results, I shall not hesitate in extracting his opinions.*

He says, that "puerperal diseases are derived from the changes induced by parturition, and are dependent on—

"1. The organic changes induced by pregnancy;

"2. Those induced by the act of labour;

"3. Those consecutive of labour.

"1. Pregnancy.

"The hypertrophy of the uterus; the enlargement of the ligamenta lata; the traction on the peritoneum of the neighbouring organs; the extraordinary development of the arteries, veins, and lymphatics.

"2. Changes induced by labour.

"Bruising of all the soft parts; they appear raw.

"3. Changes after labour.

"The woman presents the faithful picture of one who has undergone a serious surgical operation. The internal surface of the womb may be compared to a

* Fasc. xiii. of his Patholog. Anatomy.

vast solution of continuity. The whole of the mucous membrane has been altered by the inflammation, of which it has been the seat. The gaping veins are like the open-mouthed vessels of an amputated limb.

"Except just at the inner surface of the cervix uteri, there is no mucous membrane at all; but the muscular tissue of the uterus is every where exposed. This, therefore, like the stump, is to be covered by a new membrane.

"This process of reparation is accompanied by a traumatic fever, called milk-fever. Like the fever from wounds, it has its period of incubation, varying in various individuals; it lasts about twenty-four hours, and vanishes on the third day.

"As in amputation a false membrane covers the stump, and precedes cicatrisation, so the inner surface of the womb is first covered with a false membrane before it is cicatrised. If there be no lochial discharge, there is union by the first intention, as in the stump when there is no discharge: this is the rarest of all cases.

"Ordinarily this false membrane is thrown off, with a purulent discharge, which is the lochia. At first it is sanious, i. e. mixed with blood, and fetid: then less fetid, and more purulent; then thin and serous. The quality and quantity of the discharge are as in amputations, an index of the state of the wound.

"The new skin is formed in six weeks or two months; but traces of the cotyledons are still visible.

"All the injuries observable in amputations may follow the uterine wound, viz. phlebitis, pus in the lymphatics; pleurisy; inflamed synovial membrane; inflammation of the muscles; œdema dolorosum; erysipelas; besides those which are derivable from the changes undergoing in the peritoneum and the bulb of the uterus."

I have ascertained, that all the chief points of this description are correctly made out. I would, however, say with Dugés,* (p. 203, vol. ii.) that this description of Cruvelhier, supported as it is by the authority of Dubois, is somewhat overcharged. There is, in the first place, a preparation for the separation long before it absolutely takes place between fœtus and mother, which consists in the gradual thinning of the decidua, and, perhaps, in the greater friability of the walls of the maternal deciduous vessels. Then the denuded surface of the uterus, where the placenta is attached, presents no solution of continuity of the muscular substance of the uterus, only of its mucous tunic; so that, as compared with an amputated stump, the uterine wound is superficial and slight; but, on the other hand, the injury done to the blood-vessels cannot be considered small, if we look to the size and number of arteries and veins suddenly torn by the removal of the placenta.

In several dissections of the rabbit, I have always found that the portion of the uterus, from which the

* Journal Hebdomadaire.

placenta has been detached, is left perfectly denuded, the muscular fibres being distinctly exposed. The rest of the mucous membrane, however, was entire, and this makes me doubtful whether more than the spot, from which the placenta had been torn away, had a new covering.

These dissections were shewn to Professor Partridge, and some of them made by Mr. Bower, Prosector in King's College. In examining the human uterus, in an instance in which the patient had died from disease, unconnected with that organ, I found the placental spot denuded of mucous membrane, which, though it covered the rest of the womb, presented a very different surface from that of an unimpregnated uterus. Its fibres were hypertrophied, so as to look like a fine net-work, covering the cavity of the womb. If it is not shed, or cast off, it must undergo great changes, before it can re-assume the smooth glassy aspect of the mucous lining of the unimpregnated uterus. (The preparation is in the museum of King's College.)

In two other instances, in which the patients died of puerperal fever, I found only slight vestiges of this membrane, the inner surface of the uterus being denuded and covered with pendulous flocculi, the effect of disease originating in this membrane. These preparations are also in the College; and drawings made of the three in their fresh state, by the late Mr. Kane, are in my possession.

Seiler, previous to the publication of Cruvelhier's observations, had shewn that the mucous membrane of the uterus is deciduous after child-birth; and M. Raspail has, subsequent to both these authors, uttered the same opinion.

Whether, then, I turn to the analogies afforded by comparative anatomy; or to the direct evidence afforded by inspecting the human uterus, in a healthy state, soon after delivery; or whether I look to the authorities of competent anatomists,—I find, that after child-birth the womb is like an amputated stump, and that it has a reparative process to perform, which, being disturbed, permits the large gaping vessels to spread in the blood noxious secretions which they have imbibed.

It is not necessary that these secretions be purulent, for we have observed in experiments, that many other of the animal fluids are poisonous; and Tonellé has distinctly acknowledged that though the blood be vitiated, it is by other causes than pus. Mr. Travers believes that pus, circulating, produces hectic fever; and lymph, phlebitis. The former is seldom, the latter always, fatal.*

Neither does the malady depend solely on primary inflammation of the uterine veins, for these are, in a great number of cases, perfectly healthy. The cause, therefore, of puerperal fevers is, I think, sim-

* Arnott.

ply a vitiation of the blood, which cause is demonstrably sufficient to produce all their phenomena; that phlebitis, or peritonitis, or metro-peritonitis, are only secondary effects of this one cause. For if any one or more of these be assumed as constituting the essence of puerperal fever, abundant examples may be found of puerperal fever, in which the cause fixed on is absent. Thus, to the believers in the identity of peritonitis and puerperal fever, we can shew puerperal fever with a perfectly healthy peritoneum. To those who insist on inflammation of the uterine veins, as constituting puerperal fever, we can shew the genuine disease without this condition.

Proposition III.

THE VARIOUS FORMS OF PUERPERAL FEVER DEPEND ON THIS ONE CAUSE OF VITIATED BLOOD, AND ARE READILY DEDUCIBLE FROM IT.

The reader must have already come to this conclusion, as the legitimate inference from Cruvelhier's and Gaspard's experiments.

We there see, that from the one cause of vitiated blood, sometimes one, sometimes another, group of lesions and their symptoms takes place; and the variation is not only of place or organ, but of intensity. Every grade of disease, from painfulness without visible structural alteration, to complete disorganisation, has been produced by these experimenters,

as completely as we find them in our experience of puerperal fever.

Supposing the blood to be vitiated, we readily conceive that the noxious matter has a tendency to diffuse itself over the whole system, and to raise disease, of varying character, in distant parts, at the same time. Here the hypothesis, which would rest on the mere phenomena of circulation, we find is substantiated by experiments, which experiments reproduce the lesions of puerperal fever.

There are two great systems of venous capillaries: the one of the lung, the ultimate receptacle of all the blood of the body; and the other, in the liver, through which the great mass of blood, which is gathered on the mucous membranes of the intestines, is transmitted. In both of these the blood is subjected to the most important and vital changes; and to effect this, it is largely accumulated in these spots. If the blood were vitiated, we should expect, *a priori*, that the liver and intestinal canal, and the lung, would exhibit the most frequent points of disease; and such we have found to be the case in puerperal fever, and in the experiments of Cruvelhier and Gaspard.

But how, it will be asked, are we to account for this partitioning off of so diffuse a malady, as that induced by vitiation of the blood? why is it not always spread wherever there is blood? and why are puerperal fevers, now peritonitic alone, now metro-

peritonitic, now gastro-enteric, and now falling on the nervous centres?

We know that the blood-vessels, like every other part of the body, are in their nature capable, of themselves, of repairing injury, and stemming the actions of disease. The experiments of Gaspard and Cruvelhier, permit us to infer that there is always an endeavour to hem in the noxious cause as near to the spot first injured as possible; and Mr. Arnott has remarked,—what Cruvelhier had stated in 1820—that coagula form, to prevent the spread of inflammation of a venous trunk; while the former gentleman, more minute in his investigation, has always found that the injured vessel is obliterated only up to the first branch it gives off: as if nature, while endeavouring to pen up the exciting cause of malady in as small a compass as possible, wished to use whatever she could of the other channels of circulation.

It is from this law, that we find the injuries of puerperal fever so often confined to the uterus and its appendages, to the lower portion of the peritoneum, and to the adjoining intestinal canal; for we have seen that the point of departure for the noxious matter, is in this disease from the veins of the uterus.

Looking at their innumerable open-mouthed orifices, bathed in secretions, which we know to be often offensive, and undergoing decomposition, the

possibility of infection of the circulation must be admitted; as also that the nearest organs would be those in which the undiluted virulence of such infecting matter would expend itself. As for the attempt to trace the paths by which distant organs are affected, it is obvious that this could be done, were it possible to know which of the uterine veins became first infected, and along which of its branches the infecting matter passed into the circulation; or to ascertain the quantity and quality of the fluid absorbed. As, however, this cannot be done, we must be content with the same degree of knowledge which we possess with regard to the action of other poisons affecting the circulation. No one doubts that the effusions into the chest, abdomen, and cellular membrane, and the local inflammations which succeed the injection of the viper poison into the current of the blood, are caused by the bite of the animal, or by the insertion of the experimenter, although he may not be able to trace an unbroken track of disease between the point of inlet, and the disordered organ. In the one and the other case, we ought to be satisfied that the conditions capable of accounting for these effects are there, and that the difficulties arise, in the first place, out of these very conditions of anatomical structure, which are too minutely complicated for tracking every step of the march of disease, and in the second, from the state of the poison, which, varying in strength or quantity,

may, by a varying dilution in the blood, produce every grade of disordered function, without disorder of structure. Thus, then, there is an accordance and a keeping between the strangeness of the phenomena of puerperal fever, and the intricacy of the conditions under which they arise, which affords a strong presumption in favour of the truth of the explanation offered.

In conclusion, then, I deduce the first, or peritoneal form of puerperal fever, from the action of the poison being more or less confined to this membrane.

The second form, or the gastro-enteric; from the action on the liver, the organ through which, as the experiments of Gaspard and Fontana, and the admission of all physiologists shew, most poisons received into the system endeavour to escape. Whether the mucous membranes of the intestines are affected directly by the vitiated fluids, or secondarily through the acrid secretions of the liver, or in both ways as I believe; the group of symptoms constituting my second form of puerperal fever remains the same.

The third, or nervous form, I conceive to result from an impression on the nervous centres, not necessarily inflammatory, though it sometimes leads to inflammation. John Hunter speaks of this condition of the nervous system, under the metaphorical expression of "alarm." The first impressions of the most virulent poisons, are very commonly accompanied with panic

and extreme agitations. Fontana found this to be the case with dogs, after inoculation with the viper poison. The symptoms produced by the poison of cholera, of small-pox, and of vegetable miasmata, are in a certain number of cases so characterised. The impression on the nervous system, which is transitory in other cases, and soon veiled by the specific symptoms of some organ or organs labouring under the attack, remains in this as the permanent feature of the disorder; but violent perturbations of the nerves are, under such circumstances, speedily fatal. Where death does not take place from nervous perturbation alone, the membranes of the brain, and the cerebral substance, are found altered by the same process as is seen in other parts.

The fourth, or complicated form, is the result of a poison not confined to certain structures, as the peritoneum or uterus, where its violence is pent up and exhausted, but diffused by the circulation over many organs, causing each to re-act after its own laws, and giving to the disease it produces a character of inextricable confusion, and almost hopeless fatality.

CHAPTER IV.

OPINIONS OF AUTHORS ON THE NATURE OF PUERPERAL FEVER.

Having stated what I consider to be the cause, and what the nature and seat of puerperal fevers, I proceed to examine the opinions of others on these important topics.

At the period in which Dr. Gooch wrote his essay on this malady, English practitioners discussed the question of the nature of puerperal fever with very imperfect references to morbid anatomy. Some thought the malady exclusively inflammatory; others exclusively typhoid. The former recommended nothing but vigorous depletions by the lancet and by cathartics; the latter, nothing but stimuli and corroborants. It was Dr. Gooch's great merit to have set this question at rest, by proving, in an able analysis of the conflicting statements of different authors, that both these forms of puerperal fever existed. He was further confirmed in this conclusion by the study

of the effects of remedies. If to perceive truth amid a conflict of errors, and to be alone in such perception, be a mark of genius, to Gooch the award must be made. The effect on action is immense. It reconciled jarring principles, and made all that mass of cases and opinions, which had vexed the inquirer, instantly intelligible and available. Whether he knew or not the first cause of the malady he has delineated, it is impossible to read his masterly essay on this subject, without being convinced that not a word can be added to his principles of treatment, so sagaciously deduced from a cautious empiricism.

Looking wholly to practice, Dr. Gooch classed puerperal fever under the two heads of inflammatory and typhoid, and the division is eminently practical; for though it throws but little light on the nature of the malady, it is a most definite guide to its treatment. Even for practical purposes, however, this arrangement is limited. A certain number of cases of puerperal fever require a mixed treatment, and others the use of remedial measures, which soothe or alter the symptoms, without being strictly stimulant or the reverse. I have said that the division of puerperal fevers into sthenic and asthenic, throws little or no light on their nature. We neither know how this want of vital power arises, nor in what organic alterations it is based. Is it the poison that is more virulent? or is it the constitution which

is less vigorous? Then again, these very terms of virulence and vigour are merely metaphorical expressions, under which we assume the existence, and denote the result, of two powers in conflict, the one striving to conquer, the other to repel.

On this very obscure question it may be remarked, however, that there are many reasons for supposing that that state, which is sometimes called asthenic, from a perceptible want of vital resistance to disease, sometimes "typhoid," from a tendency to putridity, as well as that state which is termed inflammatory, sthenic, &c. is independent on the poison, and dependent on the constitution; for it is well known that the poison of small-pox, and other exanthemata, will produce an epidemic at one time requiring depletion; at another, support; and that the ordinary fevers of this metropolis, while they exhibit very similar ravages in the frame, require at different periods very different treatment. Medical writers have acknowledged many causes, which, acting generally on the constitution of a population, modify the action of one and the same fever. Thus, unwholesome locality, misery, depressing passions, famine, render epidemic disease asthenic; while the reverse of these seem to produce an opposite type of malady. Generally, however, there is no obvious cause modifying and imposing a specific character on the malady; and here it has not been considered unphilosophical to attribute the known effect to an un-

known agent, termed "epidemic constitution" of the air. Granting that the change is dependent on the atmosphere, we may ask how it acts. Does it produce, for example, a more virulent variolous poison? or does it simply alter the organism, and render it more or less capable of resisting the same poison? Of the two theories, the last is most probable, which assumes, that in every instance the organism is first altered by the unknown atmospheric cause, and rendered more or less susceptible of re-action. That a more virulent virus may be subsequently produced, is not unlikely, but it may be supposed to be the result of a previous alteration in the constitution; the *divinum quid* of the air not changing the nature of the virus, by imparting any noxious quality to it, but depressing, or bracing, the constitution destined to receive it.

If the inflammatory and putrid forms of puerperal and other fevers depend much more on the changes induced in the general health of the mass of a population, than on any modification in the morbific matter itself,—the same poison producing at one time a typhoid, at another, an inflammatory type,—it follows that there will be the same general kind of re-action, cæteris paribus, exhibited at the same time by a population labouring under any disease characterised by fever;—that whether it be measles, or small-pox, or puerperal fever, there will be a general similarity as to strength or weakness between

the power of bearing depletion, or the necessity of stimuli. Hence, then, this practical deduction, that *general indications* of the treatment which puerperal fever requires, may be deduced by knowing what the ordinary fevers of any place at that period demand. In confirmation of this, an odd coincidence may be observed between the disputes of medical controversialists on any one malady, and the general practice of the day in other diseases.

Thus, from the latter end of the last century to about 1815, large depletions were in vogue in almost every disease; and there is scarcely a monograph on any one that does not enjoin bleeding as the panacea. It was precisely at this era that we had the doctrines of Gordon, Campbell, Hey, as to the inflammatory nature of puerperal fevers, and Armstrong and Clutterbuck's views of treatment of ordinary fevers. Those physicians who, formerly, in febrile disease, resorted to the lancet, have for the last fifteen years had recourse to stimuli; and it is precisely during this period that the typhoid form of puerperal fever has been rife, and bleeding fallen into comparative desuetude. The account I have given of the state of medical opinion on this head will shew that the distinction of puerperal fevers into typhoid and inflammatory, is only to be regarded as a guide for practice, throwing no more light on the cause and seat of the disease than on that of small-pox or measles, or any other malady which may assume the one or the other of these two forms.

Most authors, from the visible ravages of the malady as ascertained by dissection, have fixed on inflammation of one or more organs, as constituting the essence of puerperal fever. But which of all those detailed in the vast table of disordered structure which I have given, shall we fix on as originating this formidable malady? If we say it is a peritonitis, then we have twenty-nine cases among Tonellé's two hundred and twenty-two, where no such lesion was found. Or, is it a metritis, or a metro-peritonitis? If the former, we have twenty-eight cases, and if the latter, fifty-seven in two hundred and twenty-two, without the supposed essential. If pus in the veins constitutes the essence of puerperal fever, then, according to the same author, in eighty-eight cases, no such fluid existed.*

If we endeavour to construct puerperal fevers, by combining morbid lesions into groups, what is that essential combination which Tonellé's tables do not prove to be absent in cases of genuine puerperal fever?

The legitimate inference is, that as none of these lesions is constant, so none can be assumed as the essence of the malady; and as all may exist, they may each and all be regarded as the results of a cause capable of producing them singly or conjointly.

* It should not be forgotten, however, that pus may exist suspended in the blood without our being able to detect it. Tonellé is exclusive in confining morbid effects to the presence of one fluid only.

Here I cannot avoid quoting a passage from the very able work of Mr. Moore, who, apparently without much individual experience, has, from the perusal of the works of others, given us the most sagacious and enlarged analysis of this very difficult subject, with which I am acquainted.

"Phlebitis, or any other local inflammation, cannot be considered as the cause of that malignancy which puerperal fever evinces, since that character is exhibited with nearly equal precision when associated with either of the various conditions before-mentioned, proving that structural derangement is but an accident in its course. If, indeed, occasional differences in the seat, or consequences of that inflammatory action which accompanies the fever, be sufficient to constitute a distinct affection, it might with equal propriety, under certain circumstances, be denominated puerperal pleuritis, or epiploitis, or metroperitonitis; for the pleura, lungs, and omentum sometimes manifest the pre-existence of inflammation under the general symptoms, as much as either uterus, or that part of the peritoneum which covers it. That these different forms of disease may arise in the puerperal state, without begetting the exact symptoms of puerperal fever, is generally acknowledged; so that something more than the existence of either of those inflammations seems necessary to constitute the malady."*

* Moore on Puerperal Fever, p. 79.

It is in reference to Dr. Robert Lee's views of puerperal fever that the above criticism is hazarded. That gentleman, it will be remembered, has four varieties of the malady.

1. Inflammation of the uterine peritoneum and the peritoneal sac.

2. Inflammation of the uterine appendages, ovaria, fallopian tubes, and broad ligaments.

3. Inflammation of the mucous, muscular, or proper tissue, of the uterus.

4. Inflammation and suppuration of the absorbents and veins of the uterine organs.

In another place of the same essay, Dr. Lee has given another classification, referring the symptoms to three forms of organic lesion:—

1. An inflammatory puerperal fever, dependent on inflammation of the peritoneum.

2. A congestive, dependent on inflammation of the uterine muscular tissue.

3. A typhoid, arising from venous inflammation.

These two views are scarcely congruent, especially as the doctor regards the first of these classifications as detailing mere varieties of one malady, viz. inflammation.

The latter of the two classifications of Dr. Lee rests on this single assumption, that the sole modifier of disease is the organ affected, which I believe to be a physiological error. The organ or tissue is only one of at least four causes, giving a specific character to

any malady. A disease is, first, modified by its producing cause, as in the example of various poisons producing various kinds of action on the same tissue. Then either the quantity of that cause, or its virulence, will give rise to other modifications. Thirdly, the organ on which any morbific cause acts is the next modifier; and, lastly, cæteris paribus, the state of the constitution, as to feebleness or strength, will again alter the case.

Tonellé's classification is much more general than that of Dr. Lee, but at the same time more artificial. It is too trenchant and systematic. His inflammatory form is traced to inflammation of the peritoneum; his typhoid, as concomitant with putrescence and softening—dependent on alteration of the fluids; his ataxic on a lesion of the nerves. "Une forme inflammatoire, une forme typhoide, une forme ataxique, qui correspondent aux diverses lésions des solides, des liquides et de l'innervation." T. xxii. Arch. Gen. p. 489.

This is obviously not a classification, but an enumeration of three different diseases, having each as distinct a course as any inflammation, ramollisement, or epilepsy. In his detached observations, however, Tonellé is by no means so inconsequent; he has included the ataxic form under the same cause as the typhoid, viz. vitiated blood, so that the inflammatory is the only one of the three which is modified into sthenic action by virtue of the organ attacked. As, however, he has given instances of peritoneal in-

flammation, as occurring both in his ataxic and the typhoid varieties, we are warranted in rejecting his view, that the inflammatory type of puerperal fever is dependent on peritonitis.

Believing then that this malady is not a primary local inflammation, followed by symptomatic fever, are we inclined to class it with the elder authors, as idiopathic fever, sui generis? or, as a variety of some of those entities which they have been pleased to call into existence, under the terms of synochus, typhus, bilious, nervous fevers.

The cause originating these groups of symptoms (for they are nothing more) is still and will probably long remain a desideratum; but the tendencies of the most recent opinions on this head are, to prove that the local affections of fevers are too many and too inconstant to be considered as causes of fevers. The very same reasoning, which in my opinion is conclusive against a peritonitis being the cause of puerperal fever, is equally cogent against ordinary fevers originating from gastro-enteritis, or from cerebral inflammation. In the one or the other the lesions of structure must be traced to a more general cause, which is capable of grasping, in its diffused action, the numerous tissues and organs which we find simultaneously attacked in fevers.

There are but two systems which can be considered as conveying the morbific influence over the frame,—the nervous and the vascular; and it will be

in the conjoint action of the two, when such action shall have been rigorously investigated, that I venture to predict that a rational theory of fevers will hereafter be founded. In the interim, Gaspard's experiments have induced many in France to revert to and revive that part of humoral pathology, which is divested of its absurdities, and to shew that the fluids are as capable of morbid affection as the solids, and that poisons, whether vegetable or animal, diffused in the blood, give rise to all the varieties of fevers which nosologists have named.*

* The disputes, with regard to the essence of fever, have hinged, like most medical disputes, on a partial view of the phenomena. Those who saw the folly of considering fever as an occult something acting independently of organic lesion, and who knew that local injury produced febrile action, and febrile action reproduced local injury, gave a local habitation and a name to the febrile cause, or rather made the habitation the cause. Others seeing so many tissues altered by fever, objected to the selection of one, and asserted that fever is based in that element which governs all these alterations, viz. the vital principle, the which, being heightened or depressed, &c., formed their machinery of hypothesis. The first generalization, or the localization of fever, is as much too limited as the last is vague and unintelligible.

Again, those who saw that a cause must act on something, and who wished to find a seat for the febrile action, which should at once combine local effects with a capacity of diffusive influence, selected, the one party the blood, the other the nerves, as the machinery of their hypotheses; and as both these tissues pervaded every organ, the dispute turned on which of the two was especially the seat of the vital principle, and the conflicting opinions of humoral pathologists and solidists was the result. The

PUERPERAL CONSTITUTION.

The Germans have in general placed the essence of puerperal fever in the disturbance of those processes by which the organs, tissues, and fluids, altered by pregnancy, are once more brought back to

study of morbid anatomy reduced this vexed question to a more definite form, by shewing that fever terminated in distinct morbid lesions. Broussais selected those incident to the mucous membrane of the intestines as the point of departure of the febrile cause, and with the imagination of a man of genius with great acquirements and singular powers of persuasion, accounted, by means of the nervous system and the doctrine of sympathies, for the diffusive action of fevers. His exclusiveness, and the corrections of time, have brought his system into disrepute; but his merits deserve to be remembered longer than his errors, for his views form a most important epoch in our knowledge of fevers, and afford conclusive evidence that the traces of their action are stamped on the organization; that some, at least of the latent processes of febrile disease, are unveiled; and that all occult causes must henceforth be for ever banished.

In this state of knowledge we rest at present, with the certainty that the local theory, or, more correctly speaking, "the theory of the origin of fever from any single organ" is untenable, while a better interpretation of the phenomena may be expected to be founded on the vascular or the nervous systems.

It appears to me that the discoveries of physiology point not to either the one or the other of these two systems as solely capable of affording a foundation to a just theory of fever, but to their conjoint action; for all febrile disturbances are disturbances of such vital actions as are the *joint* product of these two great and main factors of vital phenomena; for example—

The primary phenomena of all fevers are, 1. Disturbance in the

the usual state. It is well known that the changes in the quantity and quality of the blood, in innervation, and in the condition of the peritoneum and uterus, are very great during gestation, and that the return to the ordinary state after it, is rapid. Wherever there is rapid action, there the tendency to disease is increased. The acknowledged susceptibility of the nervous system in the puerperal state facilitates morbific impression, the increase in the fluids, and the disturbance of the process of lactification, account for the quantity of effusion so remarkable in puerperal fever, on the supposition of a modified theory of metastasis, by which not the milk, but the blood necessary to form it, is diverted from the mammæ to the peritoneum,—while the hypertrophied, distended and congested condition of this membrane and the uterus

formation of animal heat; 2. Disturbance in all the secerning functions; 3. Disturbance in the process of nutrition. But the formation of animal heat, secretion, and the nutritive process, are all dependent on the conjoint action of the nerves and blood-vessels. Either of these two systems may receive the first morbific impression, but the one soon participates in the changes of the other.

There are very valuable materials, both in the German and the French authors, for him to use, whose powers and opportunities induce him to cope with this gigantic subject: much and deserved honour will be awarded to him who shall succeed in unravelling the web which has been entangled chiefly by human ingenuity, and in presenting such an analysis of the various forms of fever as will enable us to trace each to its first source, and so account for all its phenomena.

explains why these parts, rather than others, are most readily attacked. Such are the leading points of the very elaborate and abstruse developments of Ritgen, which appear to be a summary of the theory which is more or less the basis of all the German works on puerperal fever.

Valuable as these views are, yet, as an interpretation of the facts of this malady, they are obviously defective; for this puerperal state can never be regarded as the efficient, but merely as the predisposing cause. The changes and conditions enumerated undoubtedly exist, but they exist in every puerperal woman in every season; and yet, nevertheless, all are not attacked with puerperal fever. And, as to the metastasis, in a great number of genuine cases of the disease, the secretion of milk is quite perfect, and no diversion of the blood from the mammæ to the peritoneum can be proved.

INTESTINAL IRRITATION.

Dr. M. Hall has connected puerperal fever with intestinal irritation as effect and cause. I have shown, in my tabular view of symptoms, that in three-fifths of those attacked, there is morbid intestinal action; but a careful review of these cases has proved to me, that this irritation is almost always secondary to the metro-peritonitic attack; that in many instances of genuine puerperal fever no such irritation can be proved to exist; and, lastly, that fever, accompanied with in-

testinal irritation (gastro-enterite) produces no such lesions as are found in puerperal fevers. I have, elsewhere, endeavoured to show that, where the blood is vitiated, one of the commonest secondary disturbances is that of the liver and intestinal canal in all its length. Admitting the very general existence of this complication, I cannot, nevertheless, look on it as the proximate cause of puerperal fever. I find it almost always a consecutive phenomenon,—but occasionally, like cold, protracted labour, or mechanical uterine injury, it becomes an exciting cause of this formidable malady. So invariably, for example, does a dose of the House medicine (or senna and salts), after causing violent pain and purging, bring on metro-peritonitis, that I have long forborne the use of this drastic irritant, as the routine dose, given on the third day after parturition.

INFLUENCE OF SEASONS.

This must also be reckoned a predisposing cause. The Tables, in the Appendix, show that the coldest and dampest portions of the year are the most fatal, and that the month of May is not favourable, while July is so singularly exempt, that not a case of death had taken place in this month during the twelve years included in the tabular view. It will be seen, too, that the effect of this influence is constant, so that the most fatal month of any one year is also the most fatal in all the others. As, however, there are years in

which no puerperal fevers exist, so we cannot assume the regular alternations of the seasons as their cause. They only modify that cause which, described as the epidemic constitution of the air, favours morbific action, in large sections of the European population. With regard to puerperal fever, it will be found, that taking the whole of any year in which the malady is epidemic in any hospital here, it is generally epidemic also in analogous institutions, over the neighbouring European countries. Habits, customs, local influences, as compared with the extensive and diffused atmospheric power, seem annulled by, or absorbed into, this widely acting cause.

The following facts, taken in connection with those already detailed, will show, that an epidemic year, or any year in which the malady is fatal here, is also fatal in most parts of Europe; but, that the intensity of mortality in any part of that year varies in various countries, according as their seasons are earlier or later, and according to other partial causes.

In 1819, for example, puerperal fever was very fatal in Paris (Dugés); in Austria (Carus); in Ireland (Douglas, who characterises it as the most fatal ever known in Great Britain). I can refer to no works as to its fatality in London.

In 1821, it was epidemic in France, Holland, Scotland, and London; and in Paris and London in 1825.

An accurate analysis of this important point can only be made by a careful collation of the various

notices of puerperal fever, in periodicals and monographs; but the above facts will show that the atmospheric influence is, perhaps, simultaneous in its action over great sections of Europe; and it must be very powerful, since the disease induced is not much modified by local habits, customs, and manners.

INFLUENCE OF HOSPITAL AIR.

On this head we have abundant evidence of the disease being most fatal in hospitals, as these receptacles are now managed. Neither the skill, the comfort, the careful dieting, and even the assiduous nursing which are lavished on its inmates, diminish the mortality to a level with that attendant on the out-door population. In her own home, the patient is generally better placed, with regard to ventilation, than in most hospitals, and in no malady is pure air, quickly changed, so requisite as in the puerperal state. It is, in fact, the chief prophylactic. A lying-in hospital should consist, either of a series of cottages, or its spacious wards should contain very few patients. Under the old system, in France, two and three used to be put into one bed; the frightful mortality which ensued, was diminished by abandoning this pernicious custom. If the condition of the puerperal patient be considered,—the load of secretions, some of which readily become putrid, the effluvia generated, the susceptibility to nervous impression, the nervous exhaustion,—the vital importance of affording more

space than any hospital now offers, I think, will be apparent. Whatever, says Cruvelhier, favours the production of hospital gangrene, favours that of uterine phlebitis; and, I will add, that both, in their severest forms, are only to be seen in hospitals. With regard to the General Lying-in Hospital,—its locality, rather below the level of the river, and surrounded by a mesh-work of open sewers, fifteen hundred feet in extent, receiving the filth of Lambeth, and some not thirty feet from the wards of the institution, may account for its unhealthiness. It is only after repeated remonstrances that these sources of pollution have, in part, now begun to be obliterated. In the absence of a medical police, nothing but a catastrophe, known under the gloss of a "strong case," has the slightest chance of remedy. Public bodies, like the commissioners of sewers, are hampered by their rigid customs, and by the penalties of the law, from coming forward, while individuals have little inclination, and less influence, in making the appeal.

UTERINE INJURY.

I have stated that there are two sources of the morbid secretion, which enters into the blood and vitiates it, giving rise to the phenomena of puerperal fever.*

* There is a third channel for the introduction of noxious matter—viz., through the lungs. In exanthematous maladies, where the fluids are found chemically changed, and in most fevers termed infectious, this is the general, if not the sole path of ingress into the circulation. The modifications in disease de-

1st, The secretion from the uterine wound; 2nd, Injury to any one or more of the uterine sinuses.

We have seen that the former source is analogous

pendent *on the mode of introduction* of the morbific cause, is, however, a subject too difficult for me to grapple with, and the observations are too few to offer any precise result. Cruvelhier, in the article Phlebitis, Dict. de.Med. et Chir. Prac., points out the increased intensity of effect when pus is introduced into the circulation at once, and as compared with that caused by gradual absorption from an abscess. The modification which small-pox undergoes by inoculation, as compared with that malady acquired by inhalation, is very remarkable. I do not know whether the effluvia of the crowded wards of a lying-in hospital would communicate puerperal fever, by acting through the lungs. There are many facts, however, to prove that those who attend on these patients are seized with erysipelas. I have elsewhere stated that the infants of those who die of puerperal fever perish from erysipelas.

In the Medical Gazette for 1838, a course of lectures by Dr. Graves, and a paper by Dr. Wilson, of the Middlesex Hospital, may be consulted. The former gives a curious case of idiopathic malady, which to me appears to be very similar to puerperal fever, dependent on change in the fluids. The latter has related several examples of phlebitis, spontaneously generated, and has expressed the belief that it, and several febrile diseases, as influenza, erysipelas, &c., have a common source.

These speculations, if they serve no other purpose, stimulate inquiry as to the analogies of diseases, assumed at present as distinct. The swelled leg, arising equally in common continued and in puerperal fever, would point to a common element in these two diseases.

The puerperal scarlatina and other affections of the skin would also indicate how the exanthemata are originated.

to the direct insertion of virus into healthy vessels, as after the viper bite, or after punctures in dissection where no phlebitis exists primarily. In the second, the source of injury is precisely similar to that arising from venesection—where the solid walls of the vein first inflame, and the matter exuded is afterwards circulated. We should expect, *à priori*, that forcible disruption of the uterine veins by manual separation of the placenta—or that long-continued action of the uterus, compressing and irritating the large uterine wound, as in strong and long-continued after-pains, —that instrumental operations, and all such causes as directly bruise or disturb the wound,—would create diseased secretions from the traumatic surface, or irritate its large pendulous lacerated vessels, and so give rise to the phenomena of puerperal fever. These deductions, *à priori*, appear confirmed by facts.

It is well known that the first labour is generally

There is so strong a belief in the profession, that puerperal fever may be communicated from patient to patient by the practitioner, that no one would be justified in a practical point of view in not acting on it, and taking the requisite measures for avoiding the propagation of so fatal a malady. I do not, however, regard this malady as intensely contagious, except where the materials transporting morbific matter have been much and long exposed to the atmosphere of disease — as in the instance, for example, of the bedding on which a puerperal patient has lain. This never hould be used without complete purification, both by fire and water.

much longer than any subsequent one; consequently we may assume that in first labours there is more mechanical injury to the uterus than in any other, and, therefore, a more unfavourable state for the healing of the traumatic uterine surface. Out of two hundred and four cases of our puerperal fever tables, more than eighty were first labours.

Again, of the total number of deaths, (amounting to sixty-eight) one-half were patients confined for the first time. These facts prove that the severity of a first labour, or mechanical injury, is a strong predisponent to puerperal disease. Of four hundred and fifty-six cases, Dugés finds that one-third more first labours than second are attacked; and Campbell, that of eighty-five attacked, twenty-nine were primiparæ.*

After instrumental labours, in which mechanical injury must necessarily be inflicted, thirty-two cases occurred.†

Now, as on an average artificial aid is not required more than once in fifty cases, the fact of thirty-two women being seized after instrumental delivery out of four hundred and fifty-six, clearly shews the influence of mechanical injury in producing puerperal fever. In these cases the injury is not the direct effect of the instruments, for that is known to be very slight and mostly none—but of that state of things which necessitates artificial aid.

* Campbell, p. 205. † Dugés. Jour. Hebd. vol. iii.

The influence of dead children long contained in utero is also very unfavourable.

In nine cases out of four hundred and fifty-six, the children were putrid.

Hæmorrhage and abortions, which are cases compounded of hæmorrhage and premature dislocation, or forced and premature separation, are no less exciting causes. It is known that large hæmorrhages favour absorption. Magendie proved that if the full veins were distended with water, poisons had little effect; if on the contrary, the vessels were emptied, the absorption was very rapid. And this explanation of Legallois* is, perhaps, the just one of the fact of so many women being attacked with puerperal fever, after flooding.

Depressing passions of the mind.—It has been observed by almost every writer on puerperal fever, that single women are very frequently and fatally attacked: a result completely borne out by the experience in our hospital. Campbell says, in proof of this, that of eight unmarried mothers attacked by the disease, six died, and follows up the remark by quotations to the same effect from the works of Home, Leake, John Clarke, and Armstrong.

In addition to depression of mind, I may say that poverty, insufficient food, and any similar causes exhausting the body, predispose strongly to the infection.

* Journal Hebdomadaire.

In my tabular view, I find that the state of the lochia has been noted only eighty times. In forty-six of which they were scanty or suppressed, or were offensive.

Out of eighty-nine cases, Dugés states, that in twenty-five there was suppression from the commencement. In twenty-seven, suppression from the second or third day. In thirty-seven, no suppression, or only slight. Most of the ancient authors had a theory by which they referred the diseases of childbirth to metastasis of the lochia, or of its acrid action on the blood. White, especially, believed in the deleterious influence of diseased lochia.

Most of the modern authors have admitted the infection of the blood by pus, but have made it consecutive, like Dr. Robert Lee, to an inflammation of the vein. Others, like Velpeau and Dance, have been engaged in considering whether the purulent deposits are simple transports of pus from phlebitic abscess, or whether they are new inflammations. M. Dance, concludes that phlebitis or inflammation of the veins, must precede the vitiation of the fluids by the secretion of the vitiating matter. Tonellé has distinctly assumed a vitiated state of the blood as essential to account for the phenomena of some species of puerperal fever, but has no where attempted to demonstrate the same, or to explain the law of their actions, nor has he shewn the connection between his various forms. Legallois has furnished the most distinct enunciation,

that plegmasia dolens, puerperal fever, and many other puerperal ailments, are solely dependent on the absorption of pus from the uterine surface.

Cruvelhier has compared the uterus after delivery to an amputated stump, and thence hinted at the great similarity in the diseases which follow each lesion. Legallois had done this before him, and he himself had been preceded by Boyer.

I have availed myself of the valuable hints and developments contained in these various sources of information, and have endeavoured to probe the views, to compare the facts with each other and with my own, and having arrived at general principles, to see whether these were in their turn capable of serving as an interpretation of the facts of puerperal fever. What I have done, I do not consider as new, but look on as an attempt to demonstrate what has been hitherto a matter of pure conjecture and mere opinion; and so to arrive at that great desideratum, a just theory of this most fatal and most complex malady.

I have, in conclusion, to protest against this my attempt being considered as a revival of the follies and errors of humoral pathologists with their four fluid constituents of blood, phlegm, bile, and atrabile; and their cosmic elements, fire, water, earth, and air, their occult causes, and their facile explanations. It has taken nearly 3000 years to convince physiologists that the whole of a living body is alive, and consequently subject to all the impressions and re-actions

of the vital power. At first the fluids were the sole seat of life, and then the solids became exclusively gifted; and each hypothesis furnished the root of a branching nosological tree. Latterly, the best modern observers have traced much of disease and morbid formation to disorder in the fluids.

The danger is not from a rational humoral pathology, but from a retrogression to the old irrational one: not from the cautious limitations of Andral and Cruvelhier, but from the very able though somewhat exclusive doctrines of Stevens.

Another objection may be further urged against my views as to all the varieties of local lesion being consecutive of a vitiated circulation. As peritonitis, enteritis, or metritis may occur in the unimpregnated woman primarily, why are we to believe that in the impregnated alone they are mere secondary derivatives. To this I would answer, that I by no means deny that any tissue or organ may be primarily attacked in both states of the female system. That there may be a peritonitis which is not the result of a puerperal fever, as there may be a pneumonia or congested brain, not the effect of a typhus. But I am quite certain, these purely local inflammations with symptomatic fevers, are very rare after childbirth, and that no one can fail to see a vast difference in the formidable accompaniments of the local inflammation after childbirth, and those which occur before it.

CHAPTER V.

TREATMENT OF PUERPERAL FEVER.

Before proceeding to a detail of remedial measures, I shall request the reader's attention to a few remarks on what may be termed the strength of this fatal malady. I do this the rather, that very vague notions of the antagonism of malady and remedy as to this disease exist in the profession; some believing the power of arresting the malady to be as much too little, as others are inclined to rate it too highly. Now the only test for resolving this question, is the numerical one, and accordingly, if we take the results of treatment adopted in various puerperal epidemics by various practitioners, we shall find that on a large scale one in every three will die, with all the resources which medicine at present offers. To save two out of three then may be termed good practice in an epidemic season. Gordon of Aberdeen lost twenty-eight in seventy-seven, or about one in two and three-fourths. Campbell twenty-two in seventy-nine, or one in three and three-fifths. Armstrong one in eleven,

or four in forty-four. Dr. Robert Lee's tables give a loss of forty in one hundred, or one in two and a half; my tables give a loss of sixty-eight in two hundred and four, or one in three. Wm. Hunter in one epidemic lost thirty-one in thirty-two. Leake lost thirteen in nineteen. Taking then the average strength of the malady, and the average power of the remedies brought against it, we may say that two out of three will be saved in a mass of cases. Or in other words, the cases in which the practitioner may be said to exercise any control are two-thirds of the whole, the other third being the necessary victims to the power of the disease under any known mode of treatment. The saving of less than two out of three, therefore, becomes in some measure a test either of very untoward circumstances, or of inefficient practice. The remedies used by Dr. Armstrong were simply those recommended and adopted by Gordon, Campbell, and Hey; and I can only account for the great difference in the results of Dr. Armstrong's practice, by supposing his cases to have been of a much milder type than those of the other physicians above named. It would be as unfair to found our estimates of the power of remedies over this formidable malady from the very favourable account he has published, as it would be irrational to give up all medication, because in the epidemic of 1746, of those attacked in one of the Paris hospitals, not one recovered; or to adopt only a languid action, because such a

master as Hunter lost thirty-one out of thirty-two, in some one pestilential year.

With these observations, which, I trust, afford a definite notion of the power of remedies over the poison of puerperal fever, as established by the experience of those who have treated the malady on a large scale, both in its inflammatory and its typhoid type, I shall proceed to give a succinct account of the treatment of the various forms of puerperal fever, each considered as a whole, and then analyse the effects of some of those remedies which are supposed to act on the very root of the malady, in the nature nearly of specifics: these are, venesection, opium, calomel, turpentine, and emetics.

TREATMENT OF THE PERITONEAL FORM.

In every case of peritoneal pain, the experience of the hospital has proved that a large linseed-meal poultice, applied over the whole abdomen, affords great comfort, and not unfrequently decided and prompt relief. It should be made sufficiently thick to retain warmth for four hours, which it readily does, and sufficiently large to extend from sternum to pubes, and from side to side. It is not unfrequently tolerated, when the pressure of the bedclothes is intolerable. I do not pretend to account for its action; but I know the fact, that it soothes pain, and generally induces copious perspiration, and a tendency to sleep. Where there are no obvious

nducements for general bleeding, and nothing, on he other hand, to mark the case as eminently ty- hoid, 10 grs. of Dover's powders may be given as oon as the poultice is applied.

A second visit should be made in four hours, when, if the symptoms have been alleviated, 10 grs. more of the Dover's powder, and a fresh poultice, should be prescribed. If within four hours after the second medication, the practitioner is not satisfied that the malady is yielding, he must at once resort to depletion.

The efficacy of this plan of treatment depends on its early application. As soon as the pain has commenced, or even during the rigor which mostly precedes it, the nurse should have orders to apply the poultice, and to send for the medical attendant. Even if the plan is not successful (it having been tried, be it remembered, in cases in which the necessity of venesection is not *obviously* apparent), the loss of six hours is not injurious; nor am I inclined, after again and again having made the experiment, to participate in the fears of those who proscribe the early use of opiates. As long as inflammation is made up of vascular and nervous action, of the afflux of blood to a spot, and of pain, so long I do not think it irrational to act on both the elements of the malady at the same time, or in periods shortly consecutive of each other. The chief danger of the use of opium, in cases of local vascularity, consists

in the diminution it causes of the secretions. But with regard to the malady in question, this may be obviated by using the Dover's powder, and combining it with an aperient, especially the mercurial preparations. In this way, while pain is soothed, the skin, liver, and bowels, are acted on.

Where the malady is not immediately ameliorated, or arrested, it runs into one or other of the various forms I have described, and requires a mixed treatment. On inspecting my tables, it will be seen that forty cases, or one-fifth, were treated without any bleeding or leeching, or without any attempt to induce the constitutional effects of mercury, and of these two only died.

I might cite authorities in favour of the use of opiates in puerperal fevers, but I shall content myself with instancing Chaussier, and quoting the fifth case of Gordon of Aberdeen, who despairing of cure, gave to a patient, writhing with the agony of a swollen and painful abdomen, a full opiate as a palliative; it proved, to his astonishment, a cure. This example is the more valuable, as it comes from one whose sole axiom, in treating this malady, was a full bleeding, followed by a full purge.

Case I.

Elizabeth Durie, æt. 29, delivered of a boy, 28th January, 1828; third child.

Natural presentation.

This woman, whose labour was natural in every respect, three days after delivery complained of violent pain in the region of the uterus, which was increased upon pressure, the rest of the abdomen was painful in a slighter degree; the pulse was 105, full and incompressible; tongue moist, not clean; bowels well open; secretions in general in proper quantity and quality—took pulv. opii, gr.i, pulv. ipecac. co. gr.x, in gruel. The pain was slightly relieved, but she did not rest well during the night; the following morning she complained of having had a shivering fit; that her head ached, and that her milk was diminished, although she had quite enough for her child; pulse 105, soft; tongue moist, not clean; belly swollen and extremely tender upon pressure; lochia present, not the slightest sickness—℞. calomel, gr.ij, pulv. antim. gr.v, pulv. opii. gr.i; sexta quaque hora. She slept well during the night, and the next morning was quite free from pain, and her milk became more plentiful. During this day she had slight pains at times, for which, at bed-time, she took pulv. opii, gr.ij, pulv. antim. gr.v, hydr. submur. gr.ij, and was completely cured.

Case II.

Elizabeth Sabin, æt. 36, *delivered of a girl,* 30*th January,* 1828; *fourth child.*

Natural presentation.

This woman, four days after delivery, complained of having had a shivering fit, that she was thirsty, and had violent pain in the belly, which I found was increased on pressure, more especially over the uterine region; pulse 80, soft; tongue moist, not quite clean —℞. pulv. opii. gr.i, pulv. antim. gr.v; statim et in horis tribus; was relieved slightly, and slept, at intervals, during the night. The next morning the pain was still great, and more so upon pressure; pulse and tongue as yesterday; bowels well open, from the House medicine. In the evening, finding her no better at that time, I gave pulv. opii. gr.ij, pulv. antim. vi, hydr. submur. gr.iv, from which she found instant relief, and got completely well.

Case III.

Maria Lakin, æt. 23, *delivered of a girl,* 3*rd February,* 1828; *first child.*

This woman, a week after delivery, by being disturbed at night by her child, who could not draw out her nipples, caught a slight cold, whereby she had a shivering fit and pain in the abdomen, (more espe-

cially in the uterine region), which was increased by pressure; pulse natural; tongue moist; bowels regular; secretions in general natural—℞. pulv. Doveri gr.x; statim. Was slightly relieved, but the pain recurring, she had House medicine, which operated four times without benefit. In the evening, finding her rather worse than in the morning, I gave pulv. Doveri gr.xv, by which she got instant relief, and slept well during the night, and next morning complained of no pain.

REMARKS.

These three cases, copied verbatim from the entries of Mr. Oriel,* the then resident house surgeon, exemplify the transient form of peritoneal pain, which I have described as so prevalent in 1827 and 28. In the two last the constitutional affection appears to have been little or none, merely a shivering fit. In the first, there was a deeper injury exhibited by the accelerated pulse and the diminished secretion of milk. This case differs from the more fatal form of puerperal fever, only in degree. In both, the peritoneal pain is often very transient, but, in the latter, followed by an overwhelming typhus and multiplied local lesions.

* I have appended the name of each House surgeon to his notes of the case.

THE OPIATE TREATMENT.

Case IV.

April, 1836.

Two days after a natural labour, Caroline Cooper, æt. 25, complained of pain of the head and belly; the pulse was 140; tongue moist; the bowels constipated —gr.v of calomel, and eight of Dover's powder ordered to be taken immediately, and ʒvi of castor oil in two hours after, which moved the bowels. The next day she was quite free from pain, but felt very faint, and the pulse was very rapid. On the second day, as there was still some tenderness over the uterus, and the pulse 120, and weak, she took gr.iij of calomel and gr.xx rhubarb, and, as she slept but little, half a grain of morphia at bed-time. In three subsequent days she became gradually convalescent with tonics and opiates.

E. H. Thorpe.

REMARKS.

This malady lasted six days; the active pain was relieved immediately by calomel and Dover's powder; but the recurrence of tenderness over the uterine region, and its relief by opiates and gentle aperients proves, that the malady had located itself in the ordinary seat of puerperal fever, and was, nevertheless, cured by opiated purgatives.

Case V.

Ellen Allen; twelfth child; December, 1828.

The child of this strong, healthy woman, was *enormous.* The after-pains were severe. On the morning of the second day after her delivery, she was attacked by pain over the whole abdomen, which was remittent, but leaving soreness. A few hours after, the pains were constant, and extended from the ninth rib to the pubes. Mr. Cathcart never saw such suffering. The slightest touch on this surface nearly produced vomiting; but if the touch was gradually applied, then the pain caused, was not so violent. The pulse was weak, 126; the bowels had not been opened since her delivery. A senna aperient was ordered, and the linseed meal poultice applied to the abdomen. Four hours after, she fell into convulsions. The poultice had relieved the pain, but not having been renewed, it had returned. The milk and lochia were deficient—gr.v of calomel and five of Dover's powders were given; and, two hours after, a dose of castor oil. The poultice was re-applied. The bowels were opened once, two hours after the oil; pulse was then 120, weak; the pain less. On the second day of the attack, there was simple soreness, which was increased to positive pain, by motion or pressure; the milk and lochia returned; the pulse 100, and fuller. The improvement attributed, by her, to the poultice and

Dover's powder. On the evening of this day the pain gradually subsided, and on the third day she was convalescent.

REMARKS.

This is an example of simple peritoneal pain, more severe than the last, yielding to opiates and purgatives.

MR. CATHCART.

CASE VI.

Mary Binegar, æt. 20, an out-patient, of corpulent habit of body, was attacked, on the 11th January, 1829, three days after her confinement, with rigor, followed by general abdominal pain, which was increased by pressure. The pulse was 80, and weak; the milk and lochia scanty—gr.x of Dover's powder were given every four hours.

12th. The next day pain had subsided into soreness, but the pulse, though weak, had risen ten beats, and was 90, and there was incipient pleurisy. Bleeding being determined on, and adopted, she bore only the loss of eight ounces; the abstraction of the last three being attended with such exceeding sense of weakness and fainting, that it compelled the house-surgeon to remain with her more than half an hour. When she revived, she said that she had lost all pain, and that the "stitches" in the side were gone. On examining the abdomen it was still found sore, and was, moreover, tympanitic. The case having been related to

Dr. Locock, he advised the continuance of the Dover's powder. This, however, was omitted by a mistake, and a small quantity of senna and salts, with a dose of tincture of hyoscyamus substituted.

13th. On the following day, when Mr. Cathcart, the house-surgeon, called, expecting to find his patient dead, she was convalescent, being thoroughly relieved of every symptom of pain.

The blood abstracted contained a small spongy crassamentum, perhaps two ounces, which floated in six ounces of serum.

REMARKS.

This case is selected to show how readily a very formidable group of symptoms will disappear by what seems very inefficient practice. A slight change was made in the nature of the symptoms by the Dover's powder. A very strong nervous impression was induced by the small bleeding and soothing aperient, immediately after which, the symptoms of danger, peritonitis, pleurisy, and tympanitis, all vanish. The effects of loss of blood, in this instance, are very remarkable: a full habit of body, with such slight tolerance of venesection, proves the depressing character of the malady. There are, in the hospital books, instances of a few leeches producing great prostration and even death; and one, in which the same quantity of blood abstracted as in this case, was followed by collapse and death in a few hours.

Case VII.

Anne Brinton, æt. 21; *first child;* 30*th April,* 1829.

On the 2nd of May she was seized (at two p.m.) with shivering, succeeded by heat and sweating, and accompanied with head-ache.

The head-ache abating, there succeeded unremitting pain in the left groin, which soon became intolerant of pressure. [Dover's powder and poultice;] took only one dose in four hours; there was no pain since the poulticing; the bowels opened; no headache.

These pains soon, however, returned, and now extended from umbilicus to pubes, and from side to side. Dover's powders every four hours; poultice cannot bear the slightest pressure.

3rd. A tolerable night. The pain ceased after she had taken three powders. She can bear the firmest pressure; functions natural; pulse 100.

REMARKS.

This is an instance of simple peritoneal pain, in which the intensity of pain is no criterion of the danger of the disease.

Case VIII.

Susan Rogers; second child; February 1, 1829.

Continued well from the 20th January, the day of her confinement, to the 31st, when she had a violent shivering fit, succeeded by hot fits, which ushered in

abdominal pain extending from umbilicus to pubes, but most severe on the right side: it was constant and aggravated by pressure; pulse 100; bowels open. Dover's powder and a poultice relieved the pain in eight hours. But now (February 2), the bowels were relaxed. One drachm of laudanum did not relieve this purging. The tongue was creamed all over, except at the tip, which was unusually red; the pulse 90, weak; no secretion of milk. For the next four days she complained only of extreme debility; and, now, the bladder became the seat of pain. The water scalded her; pulse 120; tongue clean. The pain in the bladder felt like a fire within her, and it intermitted. The urine was brick-red. Twenty-four leeches and fomentations were applied, the effect of which was first to allay the pain generally, then to lengthen the interval between the paroxysms, and ultimately to remove it.

On the 7th the pain subsided; in twenty-four hours the urine became limpid, and she was left weakened only with a pulse of 110.

MR. CATHCART.

REMARKS.

This case exhibits the connection of peritoneal pain, with intestinal irritation as in the complicated form of puerperal fever. The intermittence of the pain in the bladder is remarkable. I thought that this intermission depended on the action of a hollow muscle, like the uterus and bladder, until I remarked the same cha-

racter in a limb in which, what I have termed local deposit, had taken place. This case is a transition between the first and the fourth forms, combining characters of both. Here leeches were required in addition to opiates.

Case IX.

Julia Halls, æt. 25, January 28th, 1829.

She was confined of her third child on the 28th January; the after-pains were very severe, but relieved on the 29th, by repeated doses of laudanum.

On the 30th, she awoke with a violent pain in the uterine and right lumbar regions, which intermitted, returning every quarter of an hour, leaving at first no soreness. This state totally subsided for two hours, after which the pains returned, were constant, and increased on pressure.

On the night of the 30th, a copious flow of the lochia took place, immediately after which the pains were totally relieved by a few grains of Dover's powder. The pulse was 90.

Mr. Cathcart.

REMARKS.

N. B. Order of painfulness:—1, Severe after-pain. 2, Then intermitting pain without soreness. Then constant pain with tenderness. This case is remarkable, as shewing the transition of after-pains into inflammatory action, and the relief on the re-appearance of the suppressed lochia. They who have seen

cases of suppressed menstruation occurring during the period which ends in the unimpregnated state in genuine phlebitis, will remark the resemblance between them and the above example. It not unfrequently happens in an epidemic season, that the irritation of after-pains gives rise to the genuine and fatal puerperal fever; the uterine wound being disturbed by the unwonted irritability of that organ.

Case X.

Elizabeth Cowe, æt. 30; *2nd child;* 1829,

Was delivered on the 6th February, and continued well till the evening of the 9th, when she was attacked with such an agony of pain in the hypogastric region, the back, and half down the thighs, as to make her scream. The least pressure was intolerable. At first the pains intermitted, returning only every quarter of an hour, and leaving no soreness. Then every five minutes, leaving sorenes. The lochia stopped; milk copious; the pulse 120; other functions were natural. The soreness was relieved by the application of a mustard poultice, but returned the next day (10th) at the same spot, and now, though less in degree than yesterday, it is constant. Pulse 100, weak. A poultice was applied and calomel given; and on the next day (11th) the lochia returned, and the pain left her very weak.

In this state she remained for two days, when

(13th) she was attacked with violent pain in the right groin; firm pressure aggravated it. The poultice not giving relief, eight leeches were applied; when the pain shifted to the other side, but left her free from it on the 14th. The pulse continuing at 130.

Mr. Cathcart.

REMARKS.

This case shews how long and how pertinaciously the pain lingers near the uterine peritoneum. It is a good example of the lengthened action of the first stage. Viewed as to treatment, it is to be regarded as a transition case, between such as require bleeding and such as are relieved without it:—eight leeches were sufficient to arrest the tendency to inflammatory action. The two following examples of E. Brady and M. Foy, exhibit the pertinacity of attack on the peritoneum, and are very instructive as to the application of remedies.

Case XI.

E. Brady, æt. 21; *December,* 1828.

Two days after her confinement a dose of house-medicine caused much griping, and which was soon followed by excruciating pain in the hypogastrium, increased by pressure and motion. The pulse was 90. A poultice relieved the suffering. The next day she complained of a stitch in the chest, and return of abdominal pain, which occupied the whole surface from

the umbilicus to the pubis, and from illium to illium. She was ordered to be bled, but could not tolerate more than the abstraction of three ounces, which, together with a poultice, again afforded complete relief, and the pulse sunk to 85. For the next two days the whole belly was sore but not painful, except at intervals of half an hour, when darts of pain spread all over the abdomen—these might be brought on by motion of any kind. There was also head-ache: twelve leeches were applied, and one grain of calomel given every hour, after which the soreness gradually subsided, and she became convalescent on the 9th day after the attack.

The slight tolerance of bleeding, and the lengthened morbid action on the peritoneum are to be remarked as well as the use of mercurials.

MR. CATHCART.

CASE XII.

Mary Foy, æt. 20; 1*st child*; *July* 1828.

On the night of the 2nd day after her labour, this strong robust woman was seized with rigor, which lasted half an hour, and then was succeeded by constant abdominal pain, with occasional increase of shooting pain. Pulse 100, and full. She was bled to faintness, and the bowels well opened. The blood was not buffed.

4th. Lochia and milk suppressed. The tenderness was relieved.

5th. The uterus was large, hard, and tender to the touch; and the darting pain was distinctly referred to that organ; 12 leeches were applied to it. In this state, in spite of nauseating doses of tart. emetic, she continued for two days—

8th. When the abdominal pain increased, and the pulse again rose from 90 to 100, and the lochia and milk, which had re-appeared, were again suppressed.

9th. ℥xii. of blood were taken from the arm, when she fainted; and in the course of the day 18 leeches, and ℥xiv. more of blood from the arm were taken.

10th. The pain not being materially relieved, 18 more leeches were applied, and aperients and calomel given every two hours. The blood was firmly contracted. The pain was not constant, and there was a slight return of lochia and milk.

11th. The pain quite gone, pulse 80, weak and soft. She has vomited several times.

12th to 14th. The pain returned but only in spasms, and on the 15th she appeared convalescent, but had a relapse on the following day, which was relieved by Dover's powder.

19th. Cured. MR. WELTON.

REMARKS.

I have selected this case as marking the lengthened action of the malady on the peritoneum and uterus. The whole force nearly of morbific action seems to

have been expended on these parts. The relief by vomiting is especially deserving of notice. It is also to be viewed as a case in which the toleration of depletion was great, and any other treatment would have been out of place.

Case XIII.

Ann Dingle, æt. 28; *5th child; October 2nd,* 1828.

The only deviation from the course of a natural labour in this woman was flooding. On the day following, she took a dose of castor oil, which procured one copious motion, immediately after which the abdomen was so painful that slight pressure on it became intolerable; and with this *constant* pain there was a quick pulse, a dry skin, a furred tongue, and suppressed lochia. 10 grs. of Dover's powder were given immediately, and 5 grs. were to be taken every 6 hours. A poultice to be applied over the abdomen.

3rd. The pain is abated so much that she can bear pressure every where but over the uterine region, which however is simply sore; the pulse has fallen from 108 to 96.

4th. After passing a good night she awoke at 5 A.M., in pain, which extended over every part of a tympanitic abdomen. She had taken yesterday a dose of castor oil. At 11 o'clock the weight of the hand could not be borne on the abdomen. The pain, though constant, was at times much increased; she

took 10 grs. of Dover's powder; and 16 leeches and a poultice were applied to the abdomen, which in eight hours relieved the pain, though she says she still feels occasional darting and pricking pain in the abdomen. Pulse has again fallen from 140 to 98.

5th. A large enema caused the discharge of much flatus, which removed the tympanitic distension. Pressure on the uterine region causes pain; pulse 100, and feeble. Feels much better.

Mr. C. Gaselee.

6th and 7th. Convalescent.

REMARKS.

The abdominal pain in this instance was twice brought on by the painful action of the bowels, caused by a dose of castor oil. In the first attack the alleviation was produced by the Dover's powder and the poultice alone. In the second, it was necessary to resort to local depletion, as the Dover's powder did not diminish the pain. In both, the degree of suffering seemed to warrant more energetic means than were necessary for the cure of the patient.

Case XIV.

Ann Murray, æt. 26.

On the night of the 24th September, 1828, this woman complained of severe abdominal pain, which was intermittent. 25th. On the following morning

she could not bear any pressure on the uterine region. The pulse was 120, full, and jerking. The lochia diminished and offensive. The tongue moist, but somewhat loaded at the base. Towards the evening the abdominal pain extended over a larger surface, and ceased to be remittent. Leeches were applied.

26th. During the whole of the next day, there was abdominal pain, most severe, however, over the uterine region. Her bowels were well opened; the lochia were scanty and offensive. Poultice;—calomel gr. i, Dover's powder gr. x, every four hours.

27th. The pain has subsided into mere soreness. The lochia more copious and less offensive: Dover's powder only.

28th. She can bear firm pressure.

29th. Having imprudently sat up too long, the pain has returned with all the severity of the first attack; 20 leeches were applied; the poultice was ordered, and grs. v, Dover's powder, sextis horis.

30th. The pain materially relieved.

Oct. 1st. The pain has once more recurred; the pulse 108, of good strength; 12 leeches.

3—6. Convalescent, but weak. There is an affection of the lungs like common catarrh.

Mr. Cathcart.

REMARKS.

The pain formed in this case the principal feature of this malady. The rise, progress, and subsidence

of which is instructive. First it was intermittent, though severe. Then in the intervals there was soreness of the abdomen. Then there was constant abdominal pain extending gradually beyond the uterine region. Lastly, in subsiding, the pain resolved itself into simple soreness, and the last spots in which it lingered, were in the ovarian and uterine regions. The affection of the lungs is to be noted, as well as the state of the lochial discharge. The remittent or intermittent character of the pain is in most instances dependent on uterine contractions. It always occurs at the onset of the malady. I imagine that the weaker degree of inflammation is favourable as an irritant to the uterine contraction, while a more intense inflammatory action obliterating irritability, annuls this action. Whatever may be the theory, the fact is certain, that remittent or even intermittent pain of the hypogastrium in childbed, can consist with a disorganising inflammatory process. I would strongly impress this fact on the young student, who might otherwise be disposed to confound this dangerous state with simple colic, and infer the absence of genuine inflammation from the absence of constant painfulness. I have said that the remittance of pain depends in most instances on uterine contractions. In the complicated form of puerperal fever, a case will be found where inflammation of the calf of the leg took place, and here the pain was also remittent. I do not pretend to account for it.

Case XV.

Emma Whitaker, æt. 23, *February* 19, 1836.

On the day after her confinement, she complained of pain and tenderness in the uterine region. 20th. The pulse was frequent and small. The tongue brown, and the respiration hurried.

21st. A dose of castor oil, which she had taken yesterday, griped her and gave rise to diarrhœa. The abdomen was still tender, but her extreme debility seemed to forbid the use of any depletion, and the treatment consisted in the administration of opiates and stimulants, together with the application of the poultice to the abdomen; (22nd) under which all pain subsided; but now the diarrhœa, which had yielded, returned, and the motions were dark. After a good night, (23rd) the abdomen was once more tender over its whole surface, and once more the diarrhœa ceased. There was in addition a troublesome cough, and difficulty of breathing, (to which she had been previously subject). All her symptoms became worse; the abdomen was more generally painful and distended, and the dyspnœa more urgent. She died on the 24th at 11 A.M.

EXAMINATION FIFTEEN HOURS AFTER DEATH.

19th. On examination fifteen hours after death, we first observed the bowels to be enormously dis-

tended with air. In this case there had been most extensive peritoneal inflammation, for the whole of the peritoneum lining the muscles, the bowels, the liver, spleen, and uterus, was covered with numerous flakes of lymph, and so gluing one viscus to another. On scraping this from the surface, the membrane was not found loaded with blood, but of a pale colour, and the vessels evidently empty. The liver and spleen were healthy, but empty of blood. There was also a large quantity of effusion into the cavity of the abdomen. The uterus was very large, and projected some distance out of the pelvis. The whole of it was taken out, and the veins carefully examined; they were perfectly healthy. The womb was then cut into; its walls were much thicker than natural, but the natural structure not altered, the inner membrane was of a dark purple colour, almost amounting to black; very soft, and having the same kind of fleshy masses hanging from it, where the placenta had been attached. This was considered by gentlemen present almost to amount to gangrene. The ovaries were soft and disorganised. The bladder presented no symptoms of disease. All the viscera of the thorax were perfectly healthy. The blood in the heart and large vessels was coagulated."

REMARKS.

In this instance the prominent feature was extreme

debility. The patient expressed herself overwhelmed. Even the peritoneal affection was rather a soreness and tenderness than a severe pain. The pulse was throughout feeble and frequent; and stimuli, and a nourishing diet freely given had little effect on the patient, acting on the pain neither injuriously nor beneficially.

They who have classified puerperal fevers according to the structure affected, would have difficulty in explaining why, with such extensive inflammation of the peritoneum, the disease should assume the typhoid character.

The absence of what is termed phlebitis or inflammation of the solid parts of the vein, as well as of any purulent matter in them, coupled with the gangrenous state of the inner surface of the uterus, elucidate the remarks I have made on the real cause of puerperal fever. The notes of the dissection are taken verbatim from the report of the house surgeon, Mr. E. Thorpe.

Case XVI.

Mary Poole, æt. 24, *delivered* 29*th December*, 1837.

The second day after her delivery, (January 1,) this patient was much purged by a dose of castor oil; the motions were dark and offensive; she complained of slight pains in the ankles, the knees, and

the stomach, and was nauseated. There was shifting abdominal tenderness relieved by the passage of flatus, and not increased by pressure. A poultice, a little soda, and Dover's powder gave her complete relief. On the following day she was extremely feeble. On the third day, the abdomen became tympanitic, and the dyspnœa very distressing. On the fourth day these symptoms were accompanied with increased restlessness, difficulty of breathing, a cold surface, blue lips, an unimpaired intellect up to the moment of her death.

POST-MORTEM EXAMINATION.

A small aperture being made into the cavity of the abdomen, a considerable quantity of gas escaped, which, on the application of a candle, did not ignite. The whole cavity of the abdomen being next laid open, there was found in it about ℔iß of serum mixed with flakes of lymph, so as to give a curdy appearance. The peritoneal surface of the liver, and also the peritoneum throughout its whole extent, was more or less covered by coagulated lymph. The liver itself was perfectly healthy; the intestines, kidneys, spleen, and pancreas, were also free from disease. The gall bladder contained perhaps rather more bile than usual.

On opening the stomach, its internal mucous

surface appeared vascular, and towards its cardiac extremity, several large flakes of lymph were to be seen.

There seemed no solid food, neither was there anything more than a little fluid of the consistence and colour of yeast in the intestines, similar to the matter passed before death per anum. The uterus was contracted to its natural size, and its peritoneal covering contained lymph. The internal surface was perfectly healthy. The place of attachment for the placenta was marked by the abrupt termination of vessels filled with coagula. The os uteri and upper part of the vagina, a little more vascular than is generally the case. The ovaria were much diseased, particularly that on the left side, which was quite disorganised, and in almost a fluid state; in it no trace of vesicle or corpus luteum could be discovered. The other was not so much changed; it was much firmer; on its surface a small cyst had formed, about the size of a common marble.

On the external surface of the fundus of the uterus, close to the part at which the fallopian tube enters its cavity, an abscess had formed as large as a small walnut, which contained about ʒi of healthy pus, it appeared to be situated between the folds of the ligamentum latum. The illiac artery being opened, blood escaped, which, on examination, was found to be thin and dark—that in the aorta even more so than in these vessels. The coats, both of the

arteries and veins, retained their natural appearance. Heart and lungs perfectly free from disease.

MR. WESTON.

REMARKS.

This is one of those cases which, judging merely from external signs, would have been classed as the low, or erysipelatous, or typhoid form of peritonitis. If the patient had recovered, and the case been instanced as one of genuine puerperal fever, many would have denied that any peritoneal affection could have existed where there was so little pain, and that even relieved by the passage of flatus, and not increased by pressure. The remark made by Dance, and reiterated by Cruvelhier, that large depositions of the products of inflammation are found to have taken place in the parenchymatous organs and elsewhere, *a l'insu du malade et du medicin*, applies to effusions into the peritoneum. The quantity effused, or even its effusion, cannot, in many instances, be augured by any symptom. The treatment consisted of mercurials, Stevens' mixture, stimuli.

The symptoms of this case should be compared with those of the next, (Clymer) and then the morbid appearances.

Case XVII.

Henrietta Clymer, æt. 29; fourth child; February 8, 1829.

The morning after confinement she felt the after pains severe, but they left no soreness in the interval; this, however, soon was felt, as the pains returned in a shorter time—she could not bear pressure. Pulse 90, strong; milk and lochia natural. Poultice and Dover's powder relieved this in six hours, but when the poultice was taken off the pain returned. A mustard poultice being applied, removed, to use her own expression, the inner pain, so that the next day—

9th. She was quite free, and could bear pressure. The pulse 90. During the day she complained of head-ache; a black dose caused severe purging; and, (10th) now the pains returned. They are constant, and her inside, she says, is on fire. She cannot bear the slightest pressure; pulse 128, interrupted from pain and the long inspirations these cause her to take. There is pain at the pit of the stomach; milk and lochia abundant. Twenty-four leeches were applied to the belly, grs.ij of calomel every two hours. In twelve hours after, there was soreness but no pain; the pulse 140 and weak, the bowels twice opened, stools liquid and green.

11th. As she attributed the relief to the leeching, twenty-four more were applied, and the calomel continued. In spite of these the soreness continued.

The pulse was 140, breathing difficult, but weaker than yesterday; it intermitted; the bowels were irritable from the calomel, and the motions green. She slept during the night.

On the 12th, whenever she was not awakened by purging, the pulse intermitted; opium was given to stop it. Lochia and milk diminished.

13th. Chest stuffed; sighs much; very weak; the inside of the belly feels raw; bears no pressure; pulse 124, stronger.

14th. Purged; stomach very sick; wine.

15th. Little or no soreness on pressure; but she felt sinking, and the vomiting nothing allayed; the pulse was feeble and intermittent; she sighed heavily; the eye was bright, the mind clear; in this state she continued; and though the pulse could not be felt at the wrist, the mind was clear up to the very moment of her death.

DISSECTION THIRTY HOURS AFTER DEATH.

Abdomen.—Peritoneal cavity contained three pints of serum mixed with coagulable lymph, which was largely poured out; it covered intestines, large and small, the stomach, the liver, and the spleen. Omentum appeared inflamed. The vessels on the peritoneum very large, both over the intestines and the parietes; uterus was externally healthy. Internally, spots of coagulated lymph were poured on its surface; when pressed, no pus or animal fluid exuded from it.

The other abdominal organs healthy. The chest not opened.

MR. CATHCART.

CASE XVIII.

Mary Jordan, æt. 30, *was delivered naturally of her second child, on the* 1*st September*, 1828.

On the 9th there was constant abdominal pain, with a quick though easily compressible pulse and a furred tongue. Her child having died during the day, she became much affected.

10th. The abdomen was not so painful, but more tumid. There were irregular perspirations. In the course of this day the tenderness yielded, and she could bear deep pressure every where but over the pubis and at the pit of the stomach. The pulse rose to 140; she was pale, drowsy, and depressed. At one in the morning all abdominal pain had left; the pulse was 160 and weak. The head felt, as she said, stupid; she was very restless, and sank in about eight hours after.

EXAMINATION TWENTY-THREE HOURS AFTER DEATH.

The body was deformed by lateral curvature. She had formerly been tapped for dropsy.

Chest.—Heart displaced; pericardium adherent to the pleura; the left pleura contained ℔ß. of straw-coloured serosity; and the corresponding lung was compressed.

Abdomen.—Some old adhesions near the umbilicus; liver pale, but otherwise natural; as also the spleen and kidneys. A pint or more of opaque purulent fluid was contained in the peritoneum. This membrane was blanched over the intestine; natural where it lined the muscles, but injected near the left ovary, and over the fundus, and back of the uterus.

The mucous membrane of the stomach was of a natural consistence, but patched with arborescent vessels. Nothing remarkable in other parts of the intestinal canal.

Uterus.—A small lobule of placenta, of the size of half a walnut, adhered to the fundus; but there was no putrid odour. There was no other morbid alteration in that viscus, which had been shewn by Mr. Gaselee to Drs. Farre and Hodgkin.

MR. GASELEE.

REMARKS.

This may serve as an example of the low kind of the peritoneal form of puerperal fever. The death took place very rapidly after mental depression.

CASE XIX.

Williamson, ætat 22, *March* 13, 1829.

On the morning of the 16th, three days after her confinement, she had an attack of pain in the uterine region, which was relieved immediately by the application of a poultice, and the administration of Dover's powder.

For two days she continued well, bearing firm pressure on the uterine region, without pain; but on the morning of the 18th she awoke in excruciating agony, the seat of which was the hypogastric region, from the umbilicus downwards, and from side to side. At first the pain was intermittent, it is now constant, and she cannot bear the slightest pressure. Pulse 120, milk copious. The pain soon extended to the pit of the stomach, though twelve leeches had been applied. An attempt to bleed her had been followed by instant faintness. Twelve more leeches were applied with relief, and the pulse became fuller; 130. Head-ache.

19th. The pain being abated, calomel and opium were given every four hours. The pain returned, and was constant; she was, therefore, bled to ℥vi, but without relief. There were paroxysms every ten minutes; twelve more leeches were applied, and grs.x of calomel given.

20th. The pain and soreness are gone, and she only feels them on any exertion. Bowels opened; pulse 105, weak; tongue black. The opium and calomel were continued during the day, and six more leeches applied. She was much agitated by the bed-clothes catching fire, which caused an immediate return of the pain.

21st. The pain subsided, attacking her only on motion. The gums became spongy, and diarrhœa

coming on was quelled by Dover's powder; says, she feels well.

24th. Was convalescent, but very weak.

REMARKS.

This case exhibits the effects of mercurial treatment, where there is intolerance of venesection.

Case XX.

Charlotte Crisby, ætat. 18, *February* 12, 1829.

13th. On the evening of the first day, after a tedious labour, abdominal pain, extending from the umbilicus downwards, attacked her; the pain was constant, increased by pressure; the pulse full; the whole appearance that of a plethoric person; venæsectio ad deliq., about ℥xx were taken away, she did not faint, but the pulse at the wrist ceased for ten minutes. The blood was flat, sizy, and not at all buffed. The crassamentum was firmish; grs.x, Dover's powder every four hours.

14th. In twelve hours from her attack she was free from all pain, but after a few hours it returned in the right groin, extending all over the belly, up to the very pit of the stomach. It was increased by the slightest pressure, and was attended with painful paroxysms recurring every half hour. Milk and lochia copious; head-ache; pulse 130, feeble; twenty-four

leeches. In six hours after this all pain had subsided. Two grs. calomel every two hours; fomentation and poultices.

15th. There was a little soreness; the gums were just touched, otherwise well.

16th. Gums still sore, but no pain any where; well. The milk and lochia natural throughout.

MR. CATHCART.

REMARKS.

This is an example of the use of mercury, combined with venesection; it is highly instructive.

CASE XXI.

Mary Rowley, ætat. 27, *March* 25, 1829.

This strong healthy woman had very severe afterpains, which continued the whole of the day after delivery, in spite of opiates.

26th. They increased in frequency, and in the intervals between them the hypogastric region was sore. She could, nevertheless, bear firm pressure, without any sense of increased suffering. Pulse 120, weak; lochia scanty.

27th. The pains increased, so that now she cannot bear the slightest pressure; lochia scanty. Three grs. of calomel, and half a grain of opium every four hours. Eighteen leeches to the abdomen relieved

pain, but soreness remained, and moving was painful; eight more leeches during the day; head-ache.

28th. The calomel and opium were continued, but this day the stomach became excruciatingly painful, and there was diarrhœa and nausea, and vomiting of mucus.

29th. Green stools and sore mouth, but easy as to abdominal pain; the firmest pressure can be borne; pulse 120, weak. During this day she was much purged, and sick and light-headed; but grs.iij of opium relieved the symptoms. The mouth very sore.

30th. Sickness has not returned, and on the

31st. The pulse was 90, and the mouth better.

June 3d. Convalescent.

Duration nine days.

MR. CATHCART.

REMARKS.

This case resembles the fourth or complicated form, in its tendency to set up disease in many centres. It is a good example of the mercurial treatment.

CASE XXII.

Mary Connor, a strong Irishwoman, ætat. 27.

She was delivered on the 8th April, 1838. On the 10th, after a short rigor and vomiting, the pulse rose to 108. There was a hot skin, a red tongue,

and excruciating pain over the uterine region, which made her scream; the alæ nasi were in strong and rapid action; the lochia ceased on the accession of the rigor; the milk secreted in the usual quantities a poultice was applied. Six grs. of calomel, grs.x of Dover's powder, and grs.iii of James's powder were given, and four hours were permitted to elapse to produce the effect. The pulse having risen to 120 it was now determined to bleed, and 50 oz. were taken away. Twenty-five leeches to the abdomen, a poultice afterwards: also grs.iij of Dover's powder, gr.i of calomel, and gr.i of James's powder, were ordered every hour; a turpentine injection. In three hours from the bleeding, she was perfectly relieved of pain, and the lochia had returned. The pulse was small, soft, and 120; in six hours more the pulse fell to 94, and there was slight tympanites. In nineteen hours, from the administration of hourly doses of calomel, the gums began to be sore.

For the four succeeding days she was deemed convalescent; but on the 14th she vomited, and complained of slight uterine pain. The pulse 124, and very compressible; tongue dryish; the milk diminished; the lochia natural; the uterus large and painful on pressure; the breathing hurried; twenty-four leeches to the abdomen. These relieved the pain; but the pulse becoming jerking, and there being much fever and general distress, she was once more bled to fainting, by the abstraction of 30 ounces of

blood, and the mercury and Dover's powder, &c. again resorted to every hour as before. The next day the pulse was 94; no distress of countenance; a soft painless abdomen. In thirty-four hours from the second attack the gums were again touched by the mercury; the bowels were moved and griped; the motions were fetid and lumpy. She continued improving for a week, when phlegmasia dolens attacked the leg, which was very tender in the course of the vein; the limb was much swollen. Deeming the chances of recovering greatest out of the air of the hospital, I recommended her removal, which took place about a week after the last attack. She recovered.

REMARKS.

This case (and there are several others noted in my tables,) shews the efficacy of large bleedings, as well as the great utility of mercurials.

MR. HALLIDAY.

I have attempted to arrange the above cases so that the student may see—1st, That the chief intensity of the malady is expended on the peritoneum. 2nd, That there is every variety in grade of that intensity. 3rd, That some of these are best relieved by acting on the nervous element of inflammation, while others require in addition depletion. If we

take abdominal pain as the point on which th attention is fixed, we shall find that it is accompanied by two very different states of constitution; one in which little or no depletion is borne—another, in which relief is obtained only by very large evacuations of blood; between these two points there is every imaginable grade realised in practice, and in no malady are a cautious boldness, and a sagacious adaptation of remedy to constitutional power, more imperatively demanded than in the treatment of puerperal fever. No rule can be laid down which will fit every case.

The absolute variation in the intensity of the peritoneal attack may be inferred as really existing, from what is seen in the action of the malady on parts exposed to the eye. Thus, in what I have termed local deposit, occurring in the limbs, we can *see* every grade of attack on organic texture. In one case there is mere flushing, in another pricking pain, in a third congestion with black suffusion, in a fourth various effusions, and in a fifth gangrene. What is here produced externally and visibly, corresponds, I believe, to what takes place internally and secretly in the abdominal cavity, or in the parenchyma of the liver, the spleen, or the lung. It is here that Dr. Gooch's profound remark finds its application, namely, that the power of the constitution is often only made known by the effect of the remedy. The practitioner will be egregiously deceived if he relies on any single symptom as an infallible guide for

depletion, for example;—The majority of cases of puerperal fever do not fall into two classes, so well characterised, that the one shall require copious bleeding, the other none; but in the same hospital, and in the same epidemic, three or four patients, consecutively, will be cured by copious bloodletting, yet the fifth and sixth, apparently as capable of bearing it, will faint after the abstraction of a few ounces. It was the insufficiency of symptoms as the sole guide, which made Gordon and Campbell assert, we ought not to depend on them, but bleed in every case of puerperal fever; since, even in those apparently typhoid, the remedy will remove the oppression of the system, and unveil the true nature of the malady. This rash and exclusive practice, however, is now regarded as untenable in experience. John Hunter also acknowledged the insufficiency of symptoms as a guide to depletion in all cases, and recommended what he termed a "tentative bleeding." A small quantity of blood was taken, its effects on the constitution noticed, and the indications afforded by its coagulation, aspect, &c., noted; and from these collective signs did this great man determine as to further depletory measures.

The following is the sum of my own experience of bleeding as a remedy in puerperal fever:—Of all the means we possess of arresting this malady, I believe bleeding general or topical to be by far the most extensively applicable. The cases in which it

is not so, are exceptions to the rule. Mercury, turpentine, emetics, opiates, sudorifics, &c., have a more limited range of utility than abstraction of blood. But while I admit this, I am equally certain, that *large* bleeding has not been borne in this malady, generally speaking, during the last twelve years.

Those who have borne it best and required it most were—1. Those who were originally vigorous, and in whom no chronic ailment of the intestinal canal or lungs previously existed. 2. Those in whom the fever was accompanied by a general turgor of the frame: their aspect being that of a person who has been flushed by running, and forming a marked contrast with the pinched, shrivelled, and stricken looks of those labouring under the typhoid form of the malady. 3. Those in whom the disease seemed to be limited to one organ.

It may be asserted, with more hesitation, however, that they who are confined out of a hospital, exhibit greater reactive powers than those who are confined in one.

The pulse, as Gordon has remarked, is very deceptive; and the cases I have given shew that painfulness is no sufficient criterion of the necessity of depletion.

Besides these general indications, epidemic puerperal fever has, invariably, the character common to the ordinary fevers raging with it: if the latter require depletions, the presumption is, that the former will also.

It is curious, that in the majority of cases bled, the blood is neither cupped nor buffed.

The persons who do not bear large bleedings are those attacked by the ataxic or gastro-enteric forms: even though they be of originally strong constitutions: also those labouring under the complicated form, where many organs are, simultaneously, under the grasp of the diffusive malady. But in this last class there are so many shades of disease, that no absolute rule can be laid down.

If large bleeding be determined on, it must, to be beneficial, be resorted to, within the first twenty-four hours of the attack. In the second stage of the disease it is often, rapidly, fatal. If the bleeding be made early, it may be often repeated. It appears, where it does not remove the malady, to stop its progress, and make it continue lingering in its first stage, so that the repetition of venesection is late, only as to the lapse of time, but not tardy, as to the progress of the disease.

Of local depletion by leeching, it may be said, that the cases in all the four forms of puerperal fever, are very few indeed, which do not permit us to resort to it. It often removes a pain which will not yield to blood-letting. The number of leeches required will, of course, vary with the case; in some, six is sufficient; in others, six dozen will scarcely be so. But the average cases will require from two to three dozen.

My late friend, Dr. Fergus, was in the habit of

applying leeches to the uterus itself, in cases of puerperal fever; he was led to the practice by the congested state of that viscus, as revealed after death; and, I believe, in sixteen instances, the results were such as to satisfy him of the usefulness of the remedy so applied. I had long been in the habit of using this measure in uterine diseases, and therefore adopted it, at his suggestion, in several instances of puerperal fever occurring in the last epidemic; the fatal nature of which, however, rendered this or any other treatment quite nugatory. In the less overwhelming forms of this malady, I should strongly recommend its adoption. The disease is thus attacked in its very seat, and a less quantity of blood, so abstracted, is followed by more marked benefit, than a greater depletion from more indirect sources. The leeches may be applied by a tube, which can be procured from Savigny's, or by simply introducing them into the vagina, —from six to twenty may be safely and beneficially used. With regard to the use of mercury and its powers, I shall reserve the discussion until I come to the treatment of the complicated form of puerperal fever.

TREATMENT OF THE GASTRO-ENTERIC FORM OF PUERPERAL FEVER.

I have, elsewhere, stated that the local inflammations are in this form, slight and transient, or non-existent, while the general symptoms are those of

typhus, in its various grades, accompanied with intestinal irritation. I have, likewise, stated my conviction, grounded on clinical observation, and on Gaspard's and Cruvelhier's experiments,—that the disorder, in the intestinal secretions, is a result of the vitiation of the blood from which the secreting organs are supplied. I cannot agree, therefore, with Dr. Marshall Hall, that scybala and loaded intestines are the chief cause of this malady, and the relief from the load, its cure. In many instances there is no evidence, either in the previous history or the present state, of any accumulation of fæcal matter; nor, will any such grouping of symptoms necessarily arise from such accumulation, as peritonitis and local deposit, and delirium, which are seen in this form, whenever it is likely to be fatal, and not unfrequently when it is not. For some of these cases which are not accounted for from the irritation of loaded intestine, Dr. M. Hall is obliged to assume the effects of loss of blood. But these effects, which that eminent pathologist has most ably traced to the impression made on the nervous functions, take place in this form of puerperal fever where there has been no hæmorrhage.

I have much pleasure, however, in confirming my own experience as to the debility attending this form of malady, and as to its general mode of treatment by the authority of Dr. M. Hall. The plan he has laid down is the following:—

"The remedies of intestinal irritation, and its effects, I would enumerate and arrange in the following order. 1. The full evacuation of the intestinal canal. 2. Blood-letting. 3. Some kindly anodyne. 4. Leeches; cupping; a lotion; a liniment or a blister, according to the circumstances of the case, for the topical affection. 5. The mildest nutritious food. 6. Absolute quiet, and the most perfect security from the light, noise, disturbance, and every source of excitation. 7. Every soothing plan. 8. Great coolness and free ventilation. Lastly, constant watching over the patient during sleep, to avoid the injurious effects of turbulent dreams on the one hand, and too much sleep and fasting on the other."

These remedial measures are considered by Dr. M. Hall seriatim. He recommends an enema of several pints of warm water, and then an active purge. When the bowels have been cleared, bleeding, in an upright posture, to faintness, to relieve the general heat and excitement; and, as the purging and bleeding is apt to be followed by "symptoms of hurry and alarm of the system," they are to be prevented by a timely use of Batley's liquor opii sedativus, "of which a full dose is to be given, and repeated in six hours. Where these fail to relieve the topical affection, some local remedy is to be applied, to the labouring head or abdomen, whichever happens to be affected. Before the patient falls asleep, mild food, as gruel or panada, should be given."

With regard to active purgatives, in the disease which I have described, I believe them quite inadmissible. Whenever the epidemic has broken out in the Hospital, the routine of giving the black mixture of senna and salts, on the third day after delivery, has been abandoned, from its almost, invariably, producing pain in the already irritated intestinal surface, which is soon communicated to the uterus and thence to the peritoneum. Where the bowels really require to be freed from scybala, a fact readily discovered, as the malady is generally accompanied by diarrhœa, the aperient should be castor oil, carefully guarded from griping, by a full dose of the tincture of hyoscyamus or hop.

It rarely is requisite to abstract blood from the arm, in the gastro-enteric form of puerperal fever. The topical inflammation of the peritoneum or uterus will be readily relieved by a few leeches, and even these, not unfrequently, cause fainting. In this kind of puerperal fever, it must not be forgotten, that the nervous system is very much wrought on, and that it is, of all the forms, that which the constitution is slowest in casting off, and that, in addition to the wasting of power, through the nervous system, and the lengthened action of the disease, there is a drain from the intestinal flux. These are all reasons for economising strength, and for avoiding those measures which would debilitate.

The following I have found the most suitable

treatment. Get rid of all local inflammations as soon as possible, by leeching or by moderate depletion, so as to reduce the malady into simple fever, with gastro-enteric irritation. When the skin is early dusky, and there is nausea or vomiting, begin with an emetic. If there be no nausea, nor vomiting, but intestinal flux, with a red tongue smeared with suburra, a large dose of calomel, from ten to fifteen grs. should be given. Small doses create purging, pain, and irritation, while the full dose produces one to six large pultaceous stools, after which the tongue is cleaned, rendered less red, and more moist, and the pulse usually falls. These stools, when examined, appear to contain the fæcal matter suspended in large quantities of mucus and greenish bile, as if the turgid capillaries of the irritated intestinal canal and liver had been freed from their load. In some instances, a repetition only, of the same dose is required to efface the main features of the malady, and to leave nothing but debility to support. In others, after a short respite, diarrhœa recommences, and soon is apt to become colliquative.

For this state, when the secretions are diseased, as well as copious, a treatment essentially alterative should be used, as a combination of Dover's powder, with a mercurial. When, however, the chief danger arises from the frequency and quantity of the flux, it will be requisite to resort to absorbents and astrin-

gents. If the debility be great, wine may be freely given with gruel or sago; where it is not, the strength should be supported by soup, *thickened* with any gelatinous substance, as thin fluids almost always cause immediate purging. At night, when delirium and night-mare, and fantastic visions torment the patient, a full dose of Batley's sedative, in camphor mixture, strengthened by a few additional grains of camphor, should be given. After the intestinal irritation has abated, tonics may be used, and these are always better borne when ammonia is a chief ingredient.

Case XXIII.

Mrs. X., 15th September, 1828.

The day after a quick natural labour, this woman had a severe rigor, which was followed by constant pain, beginning in the uterine region, and gradually extending over the whole abdomen. The tongue was morbidly red, dry, and glazed; the pulse was 112, hard and strong; the head ached; the bowels were confined, and there was bilious vomiting. Ten leeches were applied to the abdomen, and grs.vi. of calomel, with ten of Dover's powder, were given. A poultice was ordered. In nine hours after, the pain, which had been constant, became remittent, but did not intermit. She could bear pressure better, and the vomiting had been succeeded by a feel-

ing of nausea. As the bowels had not been moved, some colocynth and hyoscyamus was given, which brought away two copious dark and offensive stools.

18th. The next day she could bear firm pressure. The lochia, which had been scanty, appeared in larger quantity, but were still offensive.

From the 18th to the 22d, the group of symptoms most apparent were those of fever, viz. a parched skin, a quick pulse, a very dry, red and glazed tongue, head-ache, and slight intolerance of light. The motions continued to be dark and offensive. In addition to these circumstances, the left iliac region was for a time acutely painful, and the ham and calf of the right leg were equally so. A grain of calomel every four hours, with grs.xi of Dover's powder, ten leeches to the groin, and ten to the leg, were the remedial measures employed at first. A little blue pill twice a-day was substituted for calomel; but it was not till the 30th that the patient was pronounced convalescent.

MR. CATHCART.

REMARKS.

In this case the febrile character is the most prominent. The fever had the principal signs of gastric irritation. It commenced with vomiting, and throughout was accompanied by vitiated alvine evacuations. The head-ache and intolerance of light may, I think, be regarded as arising only from the

disorders of the alimentary canal, and not from primary disease in the membranes of the brain. The pain in the calf of the leg may be looked upon as the slightest form of what I have termed local deposit. If the whole of the symptoms be now reviewed, it will be seen that there was peritoneal pain, gastric irritation, and tendency to local deposit; that the first and the last states were quickly removed, but that the gastric irritation endured fourteen days, that is, from the moment of attack to that of convalescence.

Case XXIV.

Ann Chandler, ætat. 33; *third child.*

The illness of this woman commenced with griping pain, caused by a dose of House medicine. The pulse rose to 140, the skin was hot, and there was much constitutional disturbance, which however a few grains of Dover's powder allayed. The next day she was kept in a state of nervousness by two women being confined in the ward in which she lay, while at night the restlessness of her child allowed her little sleep. The following morning the abdomen was sore; the lochia diminished. There was a weak pulse of 116, together with a state of fever and general discomfort. The bowels were open.

A grain of calomel, combined with grs.v of Do-

ver's powder, was ordered to be taken every four hours, and in the course of the day the abdominal pain subsided. For the next three days there was an irritated state of constitution, the pulse 140, and weak, and a furred tongue. The calomel and Dover's powder were continued, subsequently the Dover's powder was alone prescribed, as the patient complained of nothing but extreme debility. The pulse continued to be very quick for some days, and her recovery was slow, but uninterrupted. The duration of the disease was eight days.

MR. RAVEN.

REMARKS.

This case exhibits that form of puerperal disease, in which the abdominal pain is lost in the mass of constitutional symptoms. Here it arose in the course, and not at the commencement, of the disease, and was both slight, and quickly removed, and yet the degree of feverish debility marked the severity of the blow on the whole constitution. It exhibits, likewise, what I have constantly remarked,—the readiness with which the malady rises from accidental disturbances, whether these be owing to an over-dose of an irritating aperient, or to moral causes.

Case XXV.

Ann Vernon, ætat. 29; 10th child; confined on 26th January.

On the 3rd day after her confinement she was seized with severe pain extending from umbilicus to pubes. Pulse 130. Tongue and other functions natural. Milk copious. Lochia scanty. She is sore when pressed above the pubes, or when she coughs, or moves.

30th. Dover's powder. Poultice of mustard to abdomen. Bowels opened with senna and peppermint. Pulse 120; soreness and pain gone—tender only to pressure.

Feb. 2nd. She was convalescent, but her bowels are becoming relaxed; she is this day half delirious, complains of blindness, starts when she lies down, sees objects like birds constantly flitting before her; tongue white: pulse 132; milk scanty; lochia none. A draught of amm. and pareg. relieved the eyes, and gave her sleep.

3rd. Not so collected, still sees visions; bowels still purged; gamboge-coloured motions.

3rd to the 10th. There was much flightiness, together with the floating of objects before her eyes; a quick pulse and purged bowels. These all vanished under opiates, stimulants, a few leeches to the temples, and mustard poultice to the feet.

Mr. Cathcart.

REMARKS.

This is a good example of the gastro-enteric form of puerperal fever. It exhibits the connection with the first form, by the presence of abdominal pain, and with the ataxic by that of nervous symptoms, while it maintains throughout marked indications of fever accompanied by gastro-enteric disturbance. The fever lasted more than a week after all pain had ceased.

Case XXVI.

Hannah Leary, ætat. 31*; second child.*

May 5th. Forty-eight hours after labour she took the h. cath. niger; and in the afternoon was seized with shivering, followed by flushing, pain in the hypogastrium, and vomiting. The discharges ceased.

6th. The vomiting and abdominal pain continued the whole of the next day, but the latter ceased towards the evening, at which time the discharge returned.

7th. On the third day, the face became flushed, and the head very painful; eight leeches were applied to the temples, which, though they relieved pain, caused much debility, and from this day to the 12th, *i. e.*, for five days, she exhibited the following group of symptoms:—a flushed face, the look of a person labouring under typhus fever, sickness on raising her

head, restless nights, a great tendency to delirium, a red and moist tongue, a pulse quickened, bowels requiring aperients, and a hot skin; the milk and lochia abundant. From this state she gradually, under the influence of tonics, became convalescent on the 20th.

REMARK.

The abdominal pain transient, giving way to a fevered state, which lasted twelve days after all local attack had ceased. The regular pulse of this woman was 60, it rose to 100. The treatment was that already noticed for this form of puerperal fever, which it is needless to recapitulate.

Case XXVII.

Bridget Sullivan, ætat. 28*; eighth child,* 1827.

On 1st April, twenty-four hours after labour, she complained of occasional abdominal pain, head-ache; cough; the tongue was furred.

2nd. The pain continued during the whole of this day more slightly; the milk and lochia were scanty. The alvine discharges offensive.

3rd. On the third day after the labour, the bowels became purged, and the stomach irritable. The stools were liquid, offensive, and of a dirty green colour. The pulse 118; the tongue clear; the countenance was flushed, and she complained of want of sleep. The breathing very much hurried; she is free

from abdominal pain. For the next three days there was a tendency to diarrhœa, and the stools contained blood; this, however, soon subsided, the secretion became more copious, and she was convalescent on the seventh day.

DR. DEW.

REMARKS.

The abdominal pain, the least obvious of the symptoms, and lasting thirty hours, leaving a fever of five days, and a severer form of gastro-enteric irritation, viz. dysentery.

CASE XXVIII.

Ruth Godwin, January 8th, 1829, *ætat.* 42.

10th and 11th. This woman complained of soreness in the pubic region on the third day after delivery, which when pressed was painful. Eighteen leeches and a poultice relieved this; pulse 85, tongue furred, milk and lochia natural.

12th. On the second day the stomach became very irritable; complains of wind; bowels opened six times by grs.v of coloc.; brandy and water ℥ij to ℥iij were given, into which ten drops of laudanum were put.

13th. Tongue red and dry, and she felt very weak and sick. The wind was very distressing to her; head was aching; pricking sensations in the legs,

and at the top of the head; pulse 100; tongue white; no pain in the abdomen.

14th. No heat at the top of the head; the bowels relaxed, though natural in colour. Gin; and a starch and opium enema: this quieted her, and she soon became convalescent.

MR. CATHCART.

REMARKS.

This is one of the minor grades of illness, which resemble general fever. The course of symptoms shew how much irritability predominated. The stimuli in this woman had a magic effect.

The late matron of the hospital, Mrs. Wright, remarked the effect of the hospital diet on the patients as often very depressing; and knowing, from the habits of this class of people, that gin was to many of them the common substitute for meat, she was induced to change the hospital dietary for a caudle in which gin was the staple. We shortly after this had a marked diminution in the intensity of the epidemic.

CASE XXIX.

Anne Carpenter, ætat. 22; *second child,* 1827.

Sixteen days after her confinement this patient exhibited the symptoms of fever, accompanied with diarrhœa. The tongue was white, and the hands

were very tremulous. The pulse was quick; the countenance very anxious, but there was no local pain. Forty-eight hours after the attack the stomach became very irritable, pulse 120. On the 5th day there was delirium, and the diarrhœa, which had at times remitted, recurred; the stools being liquid and light yellow. The next day the skin was dusky, the tongue quite clean; she felt extremely weak. The delirium attacked her principally at night. In this state, with occasional diarrhœa without pain, uncollectedness at night, tremulous hands, and latterly a cough, she continued till the 27th, or about three weeks, when she became slowly convalescent, but left the Hospital coughing.

REMARKS.

Here we have the fever divested of local attack. The bowels, the stomach, the chest, and the head were threatened, however. The dusky suffusion of the skin is to be remarked. Had, as it not unfrequently happens, an attack of peritonitis supervened, the patient would probably have perished.

Case XXX.

On the 3d January, 1829, two days after her confinement, Mary Stevens was attacked with shivering, to which pains in the legs succeeded. Pulse 130; tongue natural. Ten grains of Dover's powder

brought on perspiration; the milk and lochia were copious.

Second day, 4th January. During the whole of yesterday the pulse kept up at 140, unaccompanied by soreness in any part of the body; the tongue whitish, with red edges; lochia and milk natural. Hyd. sub. grs.x in mucil.

5th. Six copious stools, mostly fluid, and she was well.

6th. From the 6th to the 10th the bowels were much relaxed. She was very weak; but this state gradually subsided under the use of opiates and tonics.

REMARKS.

The state of the pulse and of feverishness lasting seven days, as well as the extreme debility, mark the intensity of the attack. In such cases a peritonitis of six hours' standing will terminate in effusion and death. The effect of the large dose of mercury is to be noted.

Case XXXI.

Mary Ann Plunford, ætat. 27,

Was delivered, after a rapid labour on the 12th June, 1836, and three days subsequently, after a dose of castor-oil, evinced a tendency to abdominal

pain. As, however, the medicine had acted but once, it was repeated, but this time guarded by forty drops of Batley. The following day there was much tenderness on pressing the hypogastric region, and she had all the appearance and signs of an alarming attack. I ordered eighteen leeches to the abdomen, and two to the uterus internally. The bleeding was copious, and relieved her, nevertheless the pulse continued very rapid, the skin hot, and the tongue was crimson; the abdomen tympanitic.

On the third day of the attack there was much diarrhœa, which was checked by enemata of hyoscyamus, and by Dover's powder and hyd. c. creta, together with alkaline draughts, *ad libitum*.

On the fourth day the abdominal symptoms were better, but the debility was extreme, and it was not till the sixth day, and after the use of grs.vi of quinine daily, that she was declared convalescent.

ROBERT MAIDSTONE SMITH.

REMARKS.

In this case the abdominal pain and intestinal irritation were nearly equally severe, while the debility and fever were strongly marked. It may serve to shew the connexion between the first and second forms of this malady,—between the tendency to run into the inflammatory peritoneal attack, and to form the common gastro-enteric fever.

Case XXXII.

Ann Brown, ætat. 44,

Was delivered on the 5th June, 1835, naturally. On the 10th, after a dose of castor oil, the bowels were much relaxed, and with pain. The pulse was quick; the dejections continued to be frequent and offensive. On the 11th and 12th, in addition to intestinal irritation, there was cerebral excitement, which was quelled by morphia.

On the 13th the diarrhœa persisted, the pulse was rapid and fluttering, the countenance flushed.

From the 14th to the 16th, the bowels were still relaxed, and the excitement required to be restrained with opiates. There was, moreover, undefined, but distinct abdominal tenderness.

From the 16th to the 21st the diarrhœa gained ground, and required the use of the stronger astringents, as cortex ganati, chalk mixture, and thirty drops of Batley every four hours, as well as starch and laudanum injections. With these means ℥iv of red wine were daily ordered.

From the 21st her chief complaint was extreme debility, for which grs.vi of quinine, increased to twelve, daily, were taken; and,

On the 28th, that is, eighteen days from the first attack, she was convalescent.

R. M. Smith.

REMARKS.

In this case the intestinal irritation assumed more importance than the symptoms of mere fever. The peritoneum was slightly, though distinctly affected in *the course* of the disease, and not at its commencement.

Case XXXIII.

Lucy Roberts, ætat. 21,

Was delivered of her first child on the 27th June, 1836, and complained on the same evening of great abdominal tenderness. A dose of castor-oil was given, and a poultice applied to the abdomen; and on the following morning eighteen leeches were applied. These removed the abdominal pain, and gave her a quiet night and a quiet day.

30th. An erysipelatous blush appeared on the right hip; the bowels became painfully relaxed, and continued so for two days, during which the erysipelas spread over the extremities (July 1,) the elbow-joint of the right arm became inflamed, and very painful. Eighteen leeches and a poultice were applied to it; wine ordered, and beef-tea. In this state she remained for several days.

5th July. She passed a restless night; the bowels were again much purged; the head became giddy;

and the tongue, which had hitherto been clean and moist, was slightly coated. These symptoms were relieved, but recurred in the few following days.

12th. On this day the erysipelas left the extremities, (the skin of which desquamated,) and fell on the head, which was much swollen. Her weakness was extreme, and respiration hurried; the pulse feeble, and only 85. Dr. Locock, who now saw her, ordered belladonna grs. $\frac{1}{16}$ every four hours. The pulse rose to 104, and the usual effects of this medicine having been rapidly produced, it was discontinued. The erysipelas lingered two days on the face, when it left that, and broke out on the left leg, and on the following morning on the right leg and foot; and an abscess, which had previously formed on the sacrum, was opened, and discharged an ichor, in small, and subsequently in larger quantities. The erysipelas declined gradually; the abscess of the sacrum became better; but on the 5th July an abscess formed on the arm, for which she was removed to Guy's Hospital; and it was not till the 7th August that she became convalescent there.

ROBERT M. SMITH.

REMARKS.

I have selected this case, from among many others seen by me, as proving the extreme similarity between erysipelas and what is termed phlebitis. Here we had all the characteristics of the former, so as to

induce the House Surgeon invariably so to denominate the malady in his notes, and the Consulting Physician to prescribe a supposed specific for this disease; while the usual seat, appearance, course, and termination of purulent deposit, was apparent in the abscess of the right arm.

I have mentioned in the text, the opinions of Gordon and Hey on the coincidence of puerperal fever and erysipelas. I have also stated, that the infants of mothers labouring under the former malady often die of erysipelas; and I may now add, that the assiduous attendants on puerperal fever patients, are not unfrequently affected with erysipelas.

The erysipelas of hospitals seems, in some measure, to be connected with the following combination of circumstances :—

1. Crowded, or ill-ventilated wards, loaded, therefore, with effluvia.

2. Any abrasion of the surface, however slight, exposing the blood-vessels to the possibility of imbibing this matter.

The atmospheric and local influences appear merely to add to, or diminish, these two common conditions of hospital erysipelas.

TREATMENT OF THE ATAXIC FORMS.

Of all the forms of this disease, this is the one of which the least satisfactory account can be given.

It has long been known to physiologists, that disturbance of the functions will kill as rapidly as alteration of structure; and that the wheels of the living machine will as surely cease to move, if their motions be not in harmonious adaptation, as when the matter of which they are framed gives way. But the mode of death, from the first point of hindrance up to the last, is a great mystery, to be fathomed by him only who shall reveal how that most marvellous portion of our frames, the nervous system, connects man with two worlds, the material and the invisible.

It is the characteristic of this age to attempt to raise the veil which hides this knowledge from us; but as yet it has merely ascertained a few, a very few of the *organs* even, in which some of the thousand powers inherent in the nerves are situated, and that too with hesitation and doubt. When the whole of the elements of nervous function shall have been discovered,—when the organs in which they reside shall have been detected—their combination and mutual action forming the complex phenomena of life will still remain to be interpreted. No wonder then that our knowledge of nervous malady should be slight and superficial.

In the cases which I have described from my own experience, or quoted from that of others, it will be seen that great disturbance may arise in various parts of the body, which shall terminate fatally, and yet leave no track of the footsteps of death. The

slight alterations found are known to be of themselves insufficient to kill—the nature of these disturbances point to lesions of the nervous system, and bear their character. The experimental physiologist can in part re-produce them, and the pathologist knows, by the method of exclusion, that no other part of the body can exhibit them. He knows, too, that these disturbances will suddenly take place in an organ which was previously sound, and after a lengthened alarm will leave it as unscathed as before.

That this state is one of weakness, is a fact of experience, and not one which we should deduce from analogy, which almost invariably connects action and power, as effect and cause. In several of the cases, it will be seen that the patients have very rapidly sunk from a state of comparatively little alarm, into one of extreme danger, and that the impending death has only been warded off by the assiduous care with which the patients have been supplied with stimuli from hour to hour. This attack has oftenest been interpolated, as it were, into the ordinary course of the disease, which, after its subsidence has followed its wonted march, with little or no sign of having received a changing impulse. Sometimes it has made up the whole malady.

This state of the nervous system was, as far as I know, first noticed and made a prominent principle for guidance in practice, by John Hunter, and re-

ceived from him the remarkable designation of "action without power;" one of those apparent paradoxes, which never could have arisen but in the mind of one who had been long accustomed to commune with the deeper intellect displayed in nature, and who seeking in vain among the symbols of human thought for an adequate expression, was forced to create a language for ideas to which he alone could attain. There is such a remarkable striving throughout the whole of his essay on the blood, to make this thought intelligible and available, that it is impossible not to feel the importance he attaches to it.

Several cases are scattered through the work, intended to unveil the mystery, and to shew how largely this pecular form of debility, which imitates all the acts of genuine inflammation, and yet has none of its power, enters into the domain of disease. The expressions which Bichat, and others, have coined, as excitability, irritation, &c., are but feeble and marrowless, and require the volumes they have written to illustrate their obscurity; while the pithy sentence of Hunter is at once a discovery of the essence of the malady, and a guide to the practice.

Sometimes, amid the tumult and hurry of the symptoms, the loss of power or energy is noted only by sinking; but sometimes the exhaustion is accounted for by the inordinate action of the nervous influence

being directed on the blood. Either this fluid is abstracted from large portions of the body, which are left cold and shrivelled, while it is heaped up near the nervous centers, the head, and portions of the trunk, which are turgid and flushed; or, the secretions, those joint products of the nervous and vascular systems, are inordinately increased, especially that of the skin —for days together the body being bathed in perspiration, while the surface is cold.

In mania, and in certain grades of irritation arising from injury of the head, I have been much struck with this constant perspiration.

Our practice, then, in the ataxic form of puerperal fever, if it be, as I believe, a malady to which the term "action without power" is singularly applicable, is to sustain; where there is sinking, the support must be by stimuli, largely and frequently given. Where there is no visible sinking, then stimuli are not indicated, but sedatives, especially the Batley's laudanum, should be immediately given. When the action is equalized and reduced, nourishing food, and tonics may be administered.

Dr. Gooch was sent for to see the wife of a physician, who suddenly exhibited the symptoms of apparent phrenitis; a hot and turgid head, quick pulse, and raving. The husband proposed a large bleeding, and a rapid induction of salivation. Dr. Gooch requested permission first to try the efficacy of a dose of Batley; forty drops procured a tranquil sleep,

from which the patient awoke debilitated, but quite rational, and continued so.

In the course of the present year, a lady whom I attended, had on the second day of her confinement a quick pulse; on the fourth, painless distention of the abdomen, and fetid lochia; and suddenly, on the 7th, a fit of furious delirium, which had lasted three hours before I saw her. A dose of forty drops of Batley given, and repeated in half an hour, was followed by sleep and collectedness; nor did the delirium recur, but whenever she slumbered, there was such a sensation of falling, that every three minutes she awoke with a violent start. This condition was removed by food, and sedatives; for several days after, she was incessantly covered with perspiration, which yielded to quinine and opiates.

There are cases of the ataxic kind in which it is necessary to abstract blood, but it must be done sparingly, and with the view of influencing the nerves through the vascular system, and not for the purpose of debilitating. These cases are where there is no inordinate secretion, but where the head is much flushed, and where there is pain which has not yielded to the sedative, which should in almost every instance be the first and the last remedy. In these examples leeching is to be preferred to venesection. These cases, however, require great watchfulness, and the practitioner must be prepared the moment after depletion to meet the debility, which in this capricious

state may arise, with an opposite treatment to the one he has just adopted.

I have explained rather the principle than the detail of treatment of the ataxic form of puerperal fever, because the former should never be lost sight of, and the latter varies so much that each case must tell its own tale. The following are a few examples; others will be found in which the ataxic symptoms have been mixed with those of the other forms of puerperal fever, and in these their inroad has been as sudden as it was transitory.

Case XXXIV.

Maria Earle, ætat. 23,

Was delivered of her first child on the 25th March, 1836. She continued well for nine days, and was up when she was seized with violent pain of the left groin; her pulse was very frequent, but weak; the tongue furred, and the bowels costive; the pain shifted about.

6th June. The bowels were well opened, but the pain not having been relieved, twenty leeches were applied to the abdomen, with great comfort to the patient, (7th) but, on the evening, it recurred, and was cut short by a dose of opium.

8th. Soon after this total relief, she complained of numbness over the whole body. Towards the morn-

ing the pain returned, but on the opposite side; it was intermittent; it was again relieved by twelve leeches and a dose of opium. From the 9th to the 13th nothing remained but extreme debility, fever, and a furred tongue.

MR. THORPE.

REMARKS.

The irregularity of the symptoms,—their nervous character,—bring this case under the ataxic form of puerperal fever; while the general sense of numbness leads to the suspicion of spinal irritation especially. The extreme debility, without concomitant typhoid symptoms, is also characteristic of the ataxic form.

CASE XXXV.

Johanna Gilliard, ætat. 41,

Was delivered, after a tedious and severe labour, of her fifth child, on the 4th October, 1835. The following day the after-pains were severe, but there was no abdominal pain. She was unable to move the left leg from pain, extending from the sacro-iliac joint along the course of the sciatic nerve; lochia free; pulse 110; tongue dry.

6th. Two dozen leeches were applied to the hip; a dose of Dover's powder and gr.iij of calomel were given. These procured sleep and perspiration.

7th. The discharges became offensive; tongue red and chapped; pulse 80.—Quinine one grain and a half three times a-day.

8th. The limb very painful. In the evening light-headed.

9th. Rambled during the last night, but continued well during the day.

10th. At four in the morning seized with violent delirium, after incoherence at night. Pulse 160, small and weak; tongue brown and dry; skin cool. Forty drops of laudanum were given, with some æther and ammonia, and repeated in an hour. Half-an-hour after the second dose she fell asleep, and the rapid pulse and cold skin became more natural. In the morning she awoke improved in every respect. The opiate was resumed, and four ounces of wine ordered. In the evening the abdomen became distended.

11th. A small slough on the back; the limb still painful. For the next three days she continued to mend. On the 20th nothing remained but the pain in the left hip and leg, and separating sloughs and great debility.

27th. She quitted the Hospital, but was seen by the House-surgeons, Mr. Bagshaw, and, subsequently, Mr. Wilson, as late as November 16th, when the integuments of both knees were sloughing, and the legs were anasarcous.

MR. BAGSHAW.

REMARKS.

This case may be regarded as one in which the gangrenous diathesis is concomitant with, or consecutive of lesion of the nervous system. It is an instance of my ataxic class of malady, combined with local affection, and one of the many cases which, uniting the leading characters of several forms of puerperal fever, shows that they are not specifically distinct.

The action of opiates and stimulants is worthy of the notice of the younger student.

Case XXXVI.

Elizabeth Nicholls,

Was delivered, on the 22nd June, 1836; considerable hæmorrhage took place after labour.

On the night of the 23rd she had a rigor, followed by slight abdominal pain,—relieved by a poultice. A few hours after, on the morning of the 24th, another rigor; three hours after which there was a severer abdominal pain; a pulse of 120; hurried respiration; a hot and dry skin. Dover's powder and hydr. c. creta, each gr.v, were ordered, and the poultice continued.

25th. She passed the whole of the next day and night, as well as the whole of the day following, in comfort. But, at nine o'clock, P.M., of the 26th, she exhibited signs of great nervous excitement. Three-quarters of a grain of acetate of morphia was given.

In half-an-hour after the commencement of excitement, extreme debility succeeded, and I deemed it necessary to give repeated doses of ammonia, in addition to the brandy, by means of which, Mr. Neales had, hitherto, rescued her from her apparent sinking during the night of the 26th. Up to eight in the morning of the 27th she was calm, collected, and grateful for the attentions she had received. At that hour she broke out into furious mania, under a delusion of being poisoned.

I ordered a full dose of anodyne nightly, and a purge of Plummer's pill and colocynth each morning.

On the 28th she was quite rational but faint from debility. For the next seven days she took more nourishing diet, and gr.ii of quinine three times a-day.

At the end of that period the pulse became hard and quick, and the head painful. Twelve leeches were applied to the temple which left her free from pain, but again very feeble. It was full another week, that, under the use of tonic anodynes, she slowly began to regain her health.

MR. NEALES.

REMARKS.

The irregularity and the importance of the various attacks, establish this case under the head of ataxic. The hæmorrhage, doubtless, predisposed her to this peculiar form of puerperal fever.

Case XXXVII.

Elizabeth Baird, ætat. 23,

Was delivered of her first child on the 29th December, 1828. On the evening of the 30th, a shivering fit ushered in an attack of hypogastric pain. Pulse 130; discharges natural; the bowels were costive; some castor-oil and an enema were given,—Dover's powder and a poultice, &c.

31st. All pain was gone by the morning; the soreness still existed; and by the evening she was still better.

On the following day (January 1) she began to talk thickly and incoherently; complained of lightness of the head; the eye was bright and the face flushed. A few leeches were applied to the temple, and it was determined, after a consultation of the physicians, to bleed to faintness, and to give calomel every six hours. At three a vein was opened, from which the blood flowed well, (it was unbuffed and honey-combed,) but the House-surgeon did not deem it advisable to abstract more than eight ounces, although there was no sign of fainting. In three hours, from the abstraction of blood, there was no pulse in the wrist; in eight hours the temporal artery had almost ceased to vibrate, and in twelve hours she died.

EXAMINED TEN HOURS AFTER DEATH.

The abdominal viscera were healthy, so also was

the peritoneum. There was no particular lesion of the uterus. Half-a-pint of brick-coloured effusion was contained in the pelvis.

The dura matter was easily separated. The sinus' perhaps rather more full than usual. The other cerebral membranes opaque, in spots, and thickened. The vessels of the pia mater turgid at top. The choroid plexus paler than usual. No cerebral effusion anywhere. The brain itself was firm, and exhibiting no lesion in its substance or in its circulating system.

REMARKS.

In this case we have a remarkable example of that kind of fatal debility, which depends almost solely on disordered function. Five fatal instances of which are given by Tonellé, in which the perceptible injuries would not account for the event.

Case XXXVIII.

Sarah Fleming, ætat. 26.

Two days after a natural labour, which occurred on the 9th August, 1828, she complained of rather more hypogastric tenderness than is usual, which was immediately (11th) relieved by some calomel and hyoscyamus, but the medicine gave rise to diarrhœa, which persisted during the whole of the next day, (12th).

13th. The abdomen now became much distended, and the breathing consequently much impeded. The tongue was moist; pulse 130; lochia very offensive; the milk secreted in the usual quantities. About the middle of the day a vast quantity of flatus was eructated with great relief for two hours, when she suddenly appeared to be sinking. The radial artery scarcely pulsated. The mind was unconscious of passing events; the surface was cold, and nothing but the assiduous administration of stimuli roused her, and that only after an hour and a half. On recovering from this state she did not complain of any local pain whatever, but merely of a sense of constriction in the epigastrium and the throat. Her manner, however, was irritable.

14th. The tympanites and the other symptoms remained unaltered during the night, but the pulse in the morning became too rapid to be counted.

15th. During the next night and the following day the symptoms exhibited no marked change but increased feebleness and coldness. The mind, however, was remarkably clear, and unconscious of the approach of death; for finding the surface becoming each instant colder, and when indeed it was perfectly cold, she gave the requisite directions for increasing the feelings of warmth, and while discussing these with the nurses, she gradually expired.

The body was examined twelve hours after death, by Mr. Gaselee in my presence.

The external surface, nates, and perinæum slightly excoriated.

Thorax.—lbjß of serous fluid in the left pleura, and a smaller quantity in the right. There were a few old adhesions on the upper part of the right cavity. The lungs were perfectly healthy, as well as the heart, which was closely contracted. The pericardium was natural, as also the aorta; the blood contained in it was fluid.

Abdomen.—Excessive distension of the intestines. There was not the slightest trace of vascularity on any part of the peritoneum. The only effusion consisted in a few flakes of lymph scattered here and there on the intestines, adhering to no part, nor indicating by any trace, their mode of formation.

Stomach was distended with fetid gas, and coffee-coloured fluid; its coats were healthy. The duodenum did not contain as much mucus as is usual. There was no change in the vascularity, consistence, or glandular structure of any part of the intestinal canal; the lower bowels only contained a little fæcal matter. The kidney, and spleen, and liver were healthy, save the latter organ was congested with dark fluid blood.

The uterus was firm and closely contracted, and nowhere exhibited any signs of disease.

REMARKS.

Here we have the genuine effects of puerperal fever,

in effusion of lymph and serum in various cavities. Nevertheless these lesions were slight as compared with the blow on the nervous system, without which the other mischief either would not have occurred, or been remediable.

Case XXXIX.

*Case of M. Gasc.**

A woman forty-six years of age, who had undergone much mental anguish during her pregnancy, and indulged a presentiment of death in labour, was after a long and painful time delivered of a living child by means of the forceps.

This unexpected termination caused a sudden revulsion of joy, which soon brought on a state of general spasm and icy coldness, continuing for several hours, in spite of every remedy. There was no hæmorrhage; abdominal pain and vomiting succeeded, and the belly became meteorized. The pulse was little, and intermittent. The feet cold, the body hot, and she was delirious. The next day the weight of a poultice could not be borne on the abdomen, and she became still more agitated. A slight discharge took place from the uterus, which soon became extremely fetid; the third night was passed in sleepless delirium,

* Ataxic Form of Puerperal Fever, p. 117. v. 46.—Dict. des Sc. Med.

and the following morning abundant sweats broke out on the skin, which was alternately hot and cold; the pulse was always feeble and intermittent, till her death on the evening of the same day. There was no inspection.

Cases XL, XLI, XLII.

The three following cases are taken from Tonellé, and require no comment as to their real nature.

Case 1.

On the second day of a natural labour, this patient had prolonged rigors, followed by abundant perspirations and a few abdominal pains. In the evening much agitation, and delirium throughout the night; calm though weak in the morning. The abdomen tender to pressure; liquid and very frequent motions. The pulse small; lochia natural.

On the fourth day after her labour, syncope and bilious vomiting, meteorized abdomen, absence of pain. In the evening a paroxysm of dyspnœa and extreme prostration.

On the fifth, return of abdominal pain, agitation, and delirium, with suppression of the diarrhœa.

On the sixth, cold sweats, irregular pulse, rapid breathing, involuntary evacuations, and vomiting. Death after a short struggle on the following morning.

The treatment consisted of 100 leeches applied 50 at a time. Mercurial friction, and a few doses of calomel.

Dissection.—A small quantity of limpid serosity in the cavity of the peritoneum; that membrane very slightly injected in the exact bounds of the uterine region alone. Two or three of the uterine veins contained a little troubled serum, which appeared to us like the rudiments of pus. The uterus was perfectly healthy. The gastro-enteric mucous membrane pale, and every where healthy. The lungs congested but crepitating; the heart half-filled with brown blood; the brain firm and slightly injected; the other organs natural.

REMARKS.

The presence of disordered secretion in the veins is a sufficient key to the whole of this appalling disorder of function; where the lungs, brain, stomach, intestines, skin, and the formation of animal heat were consecutively deranged and repaired, until life was exhausted by the rapid comsumption of its forces, and by the injurious impressions received.

If I may be permitted to differ from so experienced a master as Desormeaux, in the treatment of such a case, opium and stimuli should have been more largely used while local inflammations were locally attacked, and the general contamination of the fluids attempted to be altered by the exhibition of mercury.

It is in these cases essential to treat symptoms, and to sustain the falling edifice at the sinking part, without inquiring too curiously on what the cause of failing depends.

Case 2.

A nervous weak girl, twenty-two years of age, aborted in the first month of her pregnancy. The expulsion of the ovum was followed almost immediately by rigors and abundant bilious vomiting, pains in the loins, and hypogastrium.

On the second day there was extreme sinking, with taciturn delirium; pressure on the abdomen seemed by her grimaces to cause pain; lochia natural. During the day there was profound coma. In the evening, on the contrary, agitation and efforts to rise, renewed vomiting, and sinking.

On the third day, return of consciousness; difficult articulation, moaning, and confused complaints; the eye suffused; cold extremities; irregular, almost imperceptible pulse, and death. In the onset the treatment consisted of forty leeches; afterwards mercurial frictions, vesicatories, and sinapisms.

Dissection.—The peritoneum slightly injected, containing two glasses of a rose-coloured fluid. The inner surface of the uterus, which was lined with vermilion blood, was quite healthy; the cervix uteri, however, was covered with a layer of concrete pus. Semi-transparent lymph was found in some of the

uterine veins; the others were mostly empty. The brain, which was examined with the greatest care, was sound, and so were all the other organs.

Case 3.

A nervous and feeble girl twenty-one years old was confined naturally at the eighth month of her pregnancy. On the fourth day there was shivering, terminating in a long fainting fit, and on the same evening and the following morning acute abdominal pain, fever, and diarrhœa, relieved by two applications of fifty leeches.

On the sixth, nothing remarkable, but an attack of dyspnœa, relieved by thirty leeches.

On the seventh, complete relief, and also cessation of the diarrhœa.

On the eighth, syncope, with return of abdominal pain.

On the ninth, a severe attack of dyspnœa relieved by a large blister.

On the tenth, again quite well in the morning, delirium in the evening, and the following morning sinking, and death.

Dissection.—The peritoneum slightly injected, contained a pound of rose-coloured serum; the uterus large, white, and firm; its veins half-filled with fluid blood; its lymphatics natural. Its inner surface lined with a layer of fetid brown blood, but otherwise healthy. The cervix covered with a grey

thin exudation. The lungs, heart, brain, and other organs quite sound.

REMARKS.

The state of the inner surface of the uterus is precisely such as is found in the other forms of puerperal fever, and bears out my assertion, that the various groupings of symptoms constituting them are not dependent on various causes, but on modifications of the same cause. The fluid state of the blood; the effusions into the peritoneum; and the multiplied disturbances of various organs, illustrate, from less partial authority than my own, the views I have endeavoured to explain.

Case XLIII.

Jane Winterbottom, ætat. 30; *Jan.* 27*th,* 1829.

This strong and healthy woman was delivered naturally, but the placenta was ossified in part, and adherent. She continued well until the evening of the second day (29th), when she was seized with abdominal pain, extending from umbilicus to pubes, and from side to side, preceded by the usual rigor and hot fit; the pain is constant; bears pressure; lochia stopped; pulse 110; tongue white.

31st. The pain left her; sore only after Dover's powder and poultice.

Feb. 1. The lochia returned scantily; still complains of soreness; pulse very variable; cough.

2nd. Nothing but cough causes pain; the sore points are near the sigmoid flexure; pulse 136, weak; tongue reddish. At six P. M. says she is better, but appears rapidly sinking. Pain at the pit of stomach; sighs, and speaks in sobs.

3rd. A draught of æther made the cough worse, but relieved the breathing, and during the day all pain had vanished from every part, save a little soreness of chest; she only complains of weakness.

4th. The uterine pain recurred in spasmodic fits; she could not sit up for weakness. The breath a few hours after was noisy, as in bronchitis; abdomen tympanitic; tongue white—centre crusted.

5th. Difficulty of breathing continues; pulse too rapid to be counted; abdomen tympanitic; no *pain nor soreness;* cramp not so frequent; in the evening vomiting.

8th. The pain, soreness, cramps, difficult breathing, and tympanites, left her in these three days; pulse 110, weak.

This state was followed by diarrhœa; and occasional tympanites; the belly, when hard pressed, was painful. She was left weak, but the red tongue became clean and natural when the diarrhœa subsided, about the 20th of the month. It was remarked that the diarrhœa was tertian in this and another case.

MR. CATHCART.

REMARKS.

This is one of those transition cases in which we

may observe the blending of the various forms of puerperal fever. In the first place, the peritoneal form marked by pain and tympanites of the abdomen. Then the irregular attacks of sinking, with a sudden disappearance of symptoms of extreme urgency, mark the ataxic nature of the malady; and, lastly, the fever, and the lengthened irritation of the gastro-enteritic membrane, show how it partakes of the character of my third form.

Case XLIV.

J. Gulry

Was delivered of twins at five A.M. of the 21st December, 1822. At ten o'clock she was seized with a violent rigor, but we heard nothing of this circumstance, until the gentleman, by whom she had been attended during her labour, called on her the following day, and informed me soon after that he found her insensible, and labouring under stertorous breathing, with scarcely any pulsation at the wrist. I visited her shortly after, she was then in articulo mortis, and died at four o'clock.

The account I received from the attendants was, that "she trembled from head to foot; that she never recovered her natural heat afterwards; that she refused every kind of nourishment; that she became delirious early in the morning; and that her

breathing had become more or less oppressed from an early period after the time she shivered."

The body was examined by Mr. Lizars, in presence of Dr. Duncan, jun., Professor of Materia Medica, Dr. Macintosh, and Dr. Orr. There was no effusion of coagulable lymph or serum in the abdominal cavity; nor was there any adhesion of the intestines, or other viscera; and the inferior margin of the omentum, which in almost all the other cases was charged with purulent matter, in this, however, appeared sound. The only thing remarkable was great congestion of the intestinal and uterine veins. The spermatic veins especially were so distended with blood, that they could be compared to nothing else than the ascending vena cava; and the veins ramified on the arches of the colon, were exceedingly turgid. The uterus was remarkably large, but contained nothing except portions of the decidua.*

REMARKS.

This case has been chosen from the work of one of the great advocates of the inflammatory nature of puerperal fever. The symptoms answer to my ataxic form, and the dissection proves how little peritonitis, or any other local inflammation, had to do with the production of the malady; while the only circumstance striking the observers as unusual, was the state of the blood distending the vessels.

* Dr. Campbell's Treatise on Epidemic Puerperal Fever, p. 48.

TREATMENT OF THE FOURTH OR COMPLICATED FORM.

It is only in its slighter grades that this form is curable; where it is the leading characteristic of an epidemic, the vast majority will die. Every thing has been tried within the present resources of medicine, and tried in vain. Fortunately, this most fatal kind of puerperal fever rarely constitutes the whole of an epidemic; but it generally accompanies each form.

"What treatment," says Cruvelhier,* "shall we oppose to purulent infection? To this question experience is as yet dumb, while theory would seem to point to diffusible stimuli and tonics; to ammonia, quinine, and to sudorifics; to hot external applications; to the vapour-bath; to purgatives, especially to emetics; to tartarized antimony, in large doses; to vesicatories, and to strong diuretics. Calomel has been extensively employed to create a fluxion from the intestinal mucous membrane; but all these means have failed as signally in my hands as in those of others. Yet when the injection of putrid matters into the veins of living animals has been followed by abundant, and very fetid evacuations, they have usually got well. It is a fundamental fact of pathology, that the intestinal canal is chiefly affected in diseases caused by any miasmata. The ancients expressed this truth by saying, that the intestinal canal

* Art. Phlebite, Dict. de Med. et Chirurg. pratiques.

attracted the poison of febrile diseases. I am certain that diseases, resulting from purulent infection, would not be stamped with the seal of incurability—and that nature, seconded by art, would triumph in the majority of cases—if the pus, which is incessantly renewed, did not incessantly renew the sources of infection."

Such are the opinions of one of the most distinguished and right-minded of modern pathologists. The remedies he has mentioned and tried, are, however, jumbled together, as the instruments apparently of a blind empiricism, where the failure of one powerful agent is the sole reason for resorting to another of any kind soever.

It is impossible, however, not to feel assured that the conditions of frame for which such varying agents become remedies, must in themselves be very different. Are there no landmarks then to guide us in discriminating between the fitness of mercury and of quinine, of emetics and of stimuli, of turpentine and of sudorifics—between the utility of vesicatories and the efficacy of strong diuretics? If there be, our first object should be to endeavour to ascertain them; and for this reason I shall record my own experience of the use of some of the principal means above mentioned. What I am about to say, I trust, will be received with the spirit of candour, as it is offered in humility by one too conscious of his own inadequacy to cope with a subject so difficult and so

extensive. I have remarked before, and would here remind the reader, that the purulent infection will be attended with various states of the constitution in different epidemics, and be modified in different persons in the same epidemic. In some it will excite great re-action, requiring depletion; in others, the powers of the frame succumb at once, and cannot from the first be supported. That between these extremes there is every grade of complication, dependent on what organs are attacked, and in what degree they suffer. The two indications, therefore, are, 1st. To attend to the local lesions. 2. Never to forget that these are not the disease, but merely the effects of a more diffusive, though concealed cause, to act on which, our remedies should be directed.

The rationale of the treatment, therefore, consists in the exhibition of such remedies as will act on this cause, and such as will alleviate or remove the local affections; taking care that in our attempt to effect the latter end, we do not so act on the constitution as to give additional energy to the more deadly power of the diffused cause.

With these two principles, the empirical practice in puerperal fever, for it has hitherto been completely empirical, receives some explanation. Either the treatment has been directed to suffering organs,—by evacuants, purgatives, emetics, and vesicatories; or the strength having been supported by stimuli and tonics, the affected viscera have been allowed to strug-

gle into health; or some medicines, supposed to act specifically on the root of the malady, as turpentine and mercury, have been relied on.

Every one of these views has been successfully acted on, and, in turn, has signally failed; not less because the medication was empirical and haphazard, than because the disease often sets all remedial measures at defiance.

Doulcet's treatment is an instance in point, of one of the common misapplications of pure empiricism, which I quote, as permitting me to make a few observations on the power of

EMETICS.

In the year 1782, puerperal fever raged with such pestilential virulence in France, that Doulcet, physician to the Hotel Dieu, disheartened at the result of his practice, resigned his duties to another. One day, however, in passing through the wards of the hospital, he chanced to see a woman, at the very commencement of the attack,—and to remark that it began with vomiting. Looking on this, as an indication of nature, he furthered the instinctive efforts by an emetic of fifteen grains of ipecacuanha; which was repeated the next day. The patient recovered. This unhoped for success led him to try it on all the rest, and two hundred were saved, while six, who refused to take the emetic, died. His treatment, when methodised, consisted in giving fifteen grains of ipecac-

uanha, repeated in an hour. The last dose acted generally on the bowels, an action which he sustained by a potion consisting of olei amygdal. ʒij, syrupi malvæ ℥i, kermes mineral. gr.i; M.; a table-spoonful every two or three hours. He repeated the emetic the next morning if the symptoms were alleviated, and the rather if they were not. If the belly remained meteorised and painful for several days, he looked on it as a reason for persevering.

The previous devastation of the malady, and the consequent despondency in the practitioners of France, caused the news of Doulcet's signal success to be hailed with enthusiasm throughout the kingdom. The government compensated the discoverer largely. The faculty of medicine drew up minute instructions for this mode of treatment and distributed them gratuitously over the whole of France. On the following year, the malady once more was epidemic, and the remedy of Doulcet resorted to, in full and earnest faith, but this time it was quite unsuccessful.

There is no doubt, in my mind, that the failure arose from want of discrimination between the varieties of this malady, and, from applying in all cases that which is useful only in some. The evidence in favour of emetics is quite as great as that for bleeding, or mercury. Not only the public and brilliant success of Doulcet, but the assertions of Cruvelhier, the trials of Desormeaux, of Richter, and of Tonellé, are conclusive on this point. The latter says that many cases were cured by him, with emetics, as if by magic.

The practical question then is, what are these cases in which this remedy is applicable. The clue has been already given, I imagine, by Doulcet himself,—it is when the violence of the malady has fallen on the liver especially, and when there is early nausea and spontaneous vomiting. Among the elder writers, particularly Stoll, (who seeing only biliary complications accompanying puerperal fever, thought it was a variety of bilious fever,) there was a good practical indication which, if observed, would be no less useful in our own times. With reference to congestions of the abdominal viscera, he distinguished these into congestion *a supra*, and congestion *ab infra*, a distinction founded in fact. In the former, the stomach and liver were chiefly affected, and the state was marked by symptoms referable to these organs. In the latter, the hypogastric organs were attacked. In puerperal fever, I have already noticed the frequency of nausea, biliary derangement, dusky staining of the skin and jaundice; and it must not be forgotten, that Cruvelhier and Gaspard have proved, that one of the modes by which infection of the blood is relieved, is through the liver. On these grounds then, and within these limits, the use of emetics will be found rational and beneficial. 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 diarrhœa, it will be requisite to resort to Doulcet's treatment. Where, on the contrary, there are none

of these symptoms, the abdominal pain, common to both these states, is, in the latter, aggravated by the efforts to vomit. I have not had many opportunities of exhibiting emetics, chiefly because I have not seen the patient till after the favourable moment, which is at the commencement of the malady, has passed; and partly because I had not made out to myself the fit cases for their use. Doulcet's method was put into my hands many years ago, by Dr. Gooch, to try; I used it empirically, and, therefore, injudiciously; but the lesson I then learned was, that in many instances it increased the torture, without shortening the malady.

On the 4th December, 1827, Mary Benson, had taken, according to the usual routine of the hospital, the full dose of aperient medicine, which operated well. On the 6th, she got up, and imprudently exposed herself to currents of frosty air. In the evening she was found by Mr. Hingeston, the house-surgeon, tossing to and fro, and screaming with pain. Her face was flushed; the skin hot and dry; her tongue milky; her pulse rapid and small; her bowels *continuing relaxed;* pressure on the abdomen caused much acute pain. Five grains of calomel and three of extract of hyoscyamus were prescribed by Mr. Hingeston, who left her for two hours, and finding, on his return, that the pain had increased, and there was constant mental apprehension, he then gave ten grains of Dover's powder, in water, which acted as an emetic, and, in the course of another hour, all pain

had vanished, and she fell asleep. The next morning there were no indications of the last night's disturbances.

M. Tonellé has given many instances of the efficacy of the emetic treatment. He has divided the cases into two classes,—those requiring no other remedy; those in which auxiliary means were used. A division which, I think, favours the view I have taken as to the principle of cure, which is further strengthened by the existence of biliary derangement, apparent in the several examples so signally benefited.

Case 1.—On the second day, after a natural labour, this patient had shivering, severe abdominal pain, and suppresion of the lochia. Forty leeches and a warm bath procured no relief. During the night there was an increase of the pain and shivering, and, on the following morning, intolerance of the slightest pressure. A dry hot skin; *nausea;* fever. Eighteen grains of ipecacuanha were ordered, after which, forty more leeches were to be applied. The emetic caused several *bilious* vomitings, and abundant alvine evacuations, and copious sweating. The pain wholly disappeared, so as to make the application of the additional leeches unnecessary. The pulse became natural, and she fell asleep. The recovery was complete on the fifth day.

Case 2.—This strong woman was attacked with peritonitis on the second day after her labour, which was not relieved by forty leeches. On the following

morning there was increase of abdominal pain on motion or pressure; *nausea;* clean tongue; rapid pulse; suppressed lochia, and great anxiety. The emetic acted on the bowels as well as the stomach, and she quickly recovered.

Case 3.—This woman, of a sanguineous and healthy constitution, had, on the third day after her delivery, severe *epigastric pain;* intense headache; hot skin; yellow tongue; suppressed lochia. The emetic caused her to vomit large *quantities of bilious matter.* The abdominal pains ceased during the day but returned at night. She took Kermes' mineral, and recovered on the sixth day.

In all these cases the fact of biliary complication is apparent. Why the whole of the tumult of the malady should yield to sudden evacuation of bile, or how the peritonitic attack should be quelled by it, is better known as a fact than explained. But, so far from its being singular, it may be said, that in all eruptive fevers, at the appearance of the eruption, which is an attempt to throw off the miasm through the skin, as the intestinal and biliary irritation is an effort to free the constitution through the primæ viæ, all constitutional symptoms are alleviated. In puerperal fever, there is great disturbance in some cases, until an abscess forms on the arm or hand, immediately after which, the urgent symptoms are allayed, and nothing but the debility from a powerfully oppressing

cause remains. Two such cases are recorded in my tables,* and many similar are to be found elsewhere. The removal of the maladies of many organs, therefore, by the spontaneous evacuation of some one organ, is a well established fact, however difficult the explanation of it may be.

The above cases show the sufficiency of ipecacuanha alone; others prove the necessity of auxiliary measures. In the former, the local inflammations appear to have been of less intensity; in the latter, they require a direct, as well as an indirect, treatment. I have remarked, that in the gastro-enteric form, the inflammations are generally transient, and removable. Is it because the intestinal flux is a safe-guard, by which the constitution is incessantly diminishing the danger by eliminating the cause?

Case 4.—A girl of a lymphatic temperament, and generally in good health, was attacked, the day after an easy labour, with symptoms of severe metro-peritonitis. During that night and the following day these increased, so that not the slightest pressure could be borne. The pulse was hard and frequent; the face pale and drawn; the skin hot. M. Desormeaux ordered eighteen grains of ipecacuanha. The patient vomited bilious matter eight or ten times, and had many abundant bilious evacuations from the

* Mantill, No. 142, and Hanslow, No. 139.

bowels. In the evening there was profuse perspiration. On the fourth day she was free from pain. On the sixth, there was a return of rigor and hypogastric pain, which was relieved by forty leeches and a laxative; she left the hospital on the ninth day.

Case 5.—A woman who, though of good constitution, had suffered much during her pregnancy, and had latterly become anasarcous, had, on the evening of the fourth day, after an easy labour, acute abdominal pain and shivering. Milk and lochia were suppressed. On the fifth day vomiting; belly tympanitic and tender, and intolerant of the slightest pressure: a pale and contracted face; excessive debility; great anxiety; a burning skin and weak pulse. The ipecacuanha was prescribed. The patient vomited bilious matter; perspired much, and was much relieved. This remarkable and unexpected amelioration continued till the tenth day, when hypogastric pain, ushered in by a rigor, recurred. Twenty-five leeches afforded some relief; but, as a deep-seated fulness and some pain remained, two drachms of mercurial ointment were daily rubbed in, which removed the symptoms in about five days.

In these cases it is fair to suppose, that the infection of the blood had not only raised constitutional and functional disturbance, but that it had caused local inflammations requiring a specific treatment.

Besides the examples of the utility of emetics afforded by Tonellé, I have been informed by my friend Dr. Robert Maunoir, that his father, the celebrated Maunoir of Geneva, looks on ipecacuanha as the remedy most to be relied on in the treatment of puerperal fever,—a faith founded on repeated experience in an extensive practice.

Among the older authors, Willis, White, and Antoine Petit were advocates for its employment. In our own times, Osiander and Hufeland in Germany; Recamier, Cliet, Tonellé and Desormeaux in France, have all borne their testimony to the signal benefits to be derived from the use of ipecacuanha as an emetic.

It would appear that some seasons, or some portions of the year are more favourable for its exhibition than others.

Desormeaux first tried emetics in the end of 1828, with great success. During the greater part of the following year they failed; but their use did not aggravate the symptoms. In September 1829, being cold and humid, they were again given with great benefit. Towards the end of October they lost their power, and in November were totally useless.

When it is considered that puerperal fevers are often cured, or alleviated, by copious spontaneous perspiration, or by purging and vomiting; we ought not to wonder at the success of an agent like ipecacuanha, which is capable of producing, and usually does produce all these effects at once.

PURGATIVES.

Cederskiöl, a Swedish physician, in order to test the effects of this class of remedies, gave the more active aperients to 116 puerperal women; of these 32 had peritonitis, and 5 died.

To 108 others he exhibited lavements, 18 only were affected with peritonitis, and one died. If the cases were of the same type and intensity, the result would be conclusive, but even under all circumstances it must be inferred, in Cederskiöl's examples, that the more active purges are prejudicial.

In this opinion John Clark coincided; and Baglivi went so far as to assert, that "In puerperis tanquam pestis fugienda sunt purgantia."

On the other hand, Denman, Gordon, Armstrong, Hey, Chaussier and Stoll, relate many instances of their great utility.

It is obvious, therefore, in the wielding of this remedy, as of every other useful one, the disputants have each tacitly assumed the universal similarity of all puerperal fevers.

My own experience with regard to aperients is, that whenever they create tormina, there is the greatest risk of an attack of metro-peritonitis succeeding. This so constantly occurs, that I invariably mix some anodyne—usually Dover's powder, or hyoscyamus, or hop, with the purgative.

It should be remembered that spontaneous diarrhœa

will occur in seven or eight cases in every twelve, and that, therefore, the chance of the intestinal canal being likely to become irritated or not, will be measured by the ratio of seven to five.

Under the term purgative very varied effects are classed; and it is of no slight importance that that effect only should be produced, which is opposed to the action of puerperal fever. The mucous membrane of the intestines is known to have various properties; to exhibit different functional and vital powers in various parts of its surface; besides this, its state influences by the strictest sympathy every organ of the body.

We see daily, that large quantities of thin serous matter may be evacuated without a particle, or with only a scanty tinge, of bile; and here, the effects not dissimilar to those produced by bleeding, would prove that the vascular system has been drained. In other cases, bile is poured out in great quantities, and with great relief; in a third case, the mucus is variously altered in quantity and in quality. When it is considered that we possess medicines which will produce at our pleasure these various and differing results, it is obvious that the question of purgatives cannot be disposed of by the mere dogmatic assertion, that they are, or that they are not useful. If an injudicious exhibition of an aperient shall interfere with a natural crisis, and warp the process by which the constitution is aiding itself, then it will be injurious;

if it aid and assist the natural effort, it will be signally beneficial. It remains to determine, therefore, what are the examples likely to be benefited by aperients, and what are the aperients applicable to the various kinds of puerperal fever. In the inflammatory kind of puerperal fever Gordon gave a scruple of jalap, with grs.v of calomel, and followed it up with a dose of salts. In such cases experience and theory tally; for here not only is the liver unloaded, but also the turgor of the vascular system is diminished, to reduce which is a main indication.

In the gastro-enteric form, there being an obvious spontaneous effort to free the constitution through the liver; this should be furthered by an emetic, and a mercurial purge in a large dose; but as there is great nervous irritation, the aperient should be of the least irritating kind. It is in these cases, that those aperients which act on the vascular system so powerfully, cause intestinal irritation, which immediately gives rise to uterine and peritoneal inflammation; the natural tendencies of the disease being dislocated.

In the ataxic form, aperients are always useful. In fact, in every form of nervous malady in which the secretions are so much, and so suddenly, and capriciously altered, a daily evacuation, by mild but efficient aperients, is absolutely essential; and without such, all nervines and anodynes are pernicious.

They should consist of mercurial alteratives, combined with such purgatives as unload the bowels without causing watery motions, to which an anodyne may be added.

With regard to purgatives, in the complicated form of puerperal fever, they should, in the mass of cases, be such as do not irritate, nor act violently, and should be combined with a mercurial and an anodyne. The former will further the secretion of the bile, or correct it; the latter, prevent pain.

MERCURIALS.

The use of mercury in inflammatory diseases, is, I believe, a discovery of British practitioners. The mass of experience on it is now very considerable, but I am not aware that any methodised view of the results of the action of this powerful agent is yet in print. I shall, therefore, preface its application as a remedy in puerperal fevers, with some remarks on its properties in general. They are taken chiefly from the substance of a very valuable course of lectures, given in 1826 by Dr. Farre: partly from the detail of the treatment of disease by British practitioners in India, and partly from the opinions afloat among the profession here in London. The Continental practitioners appear to me to have either no notions at all of mercurial agency, or very false ones. The generality, as may be seen from the quotation I have made from Cruvelhier, regarding calomel as an irri-

tating purge, acting chiefly on the mucous membrane of the intestines. The Germans, however, have in a few instances arrived at conclusions bordering on the truth.

"Mercurial action," says Dr. Farre, "is positively anti-phlegmonous. If it be pushed far enough, it produces an effect the exact reverse of this phlegmonous state, namely, the erythematous inflammation; the tendency of which is to loosen texture, while that of phlegmonous inflammation is to bind texture."

The specific effect of what Dr. Farre terms phlegmonous inflammation, is the effusion of coagulable lymph, the property of which is to consolidate structures into which it is effused. The inherent contractile power of this lymph is easily remarked, as exhibited in pulmonary disease, where the falling in of the ribs, dependent on atmospheric pressure, is a consequence of the puckering up, and the excessive contraction of the lungs caused by deposits of lymph. It is well known that all cicatrices, the product of effused lymph, contract and draw in the adjacent parts. If this state of parts, arising out of the kind of inflammatory process, be compared with the inflammations produced by mercury, the proposition of Dr. Farre will, I think, be made out. When salivation has been induced, the gums inflame; but instead of lymph being effused, and the parts consolidated, we find serum and blood poured out, and

the texture loosened and rendered spongy. Similar effects take place on the intestinal and pulmonic mucous membrane, both of which always are, when affected at all, *softened.*

In an instance mentioned by Dr. Farre, the patient knew when he took mercury, by his nails falling off. If further proof were required, we might appeal to the treatment of iritis, where the effects of mercury, as an antagonist to the phlegmonous inflammation, is not a matter of inference but of sense; we can see how it acts. No sooner is the mercurial action induced, than the little curling flakes of lymph which are deposited, and those about to be so, are affected. The action is changed, the adhesions first are softened, then removed, and the iris is loosened from the surfaces to which it was made to adhere.

Another effect of mercury according to Dr. Farre, is its direct action on the red globules of the blood; it diminishes their number. Whether this be so clearly ascertained as the former proposition, I must leave others to determine; suffice it to say, that no person, however plethoric, undergoes a course of mercury without becoming blanched. In what degree this is effected by positive drain from the exhalants of the vascular system in the increase of secretions, and how much by a vital change in the constituents of blood is still, I think, to be ascertained.

"A full plethoric woman, of a purple red com-

plexion, consulted me," says Dr. Farre, "for hæmorrhage from the stomach, depending on engorgement, without organic disease. I gave her mercury, and in six weeks blanched her as white as a lily."

The third effect of mercury on the system, is to increase the secretions.

We know its peculiar effect on the liver, on the salivary glands, and the intestines; but besides these, the skin and the kidneys are both influenced by mercury.

How far the exhalation from the pulmonic surface is increased; or, in what degree it is altered, I do not know.

Allowing even that this is slightly, or not at all so, we may infer that nearly the whole of the exhalants of the frame are modified in their actions by the agency of mercury, and that an immense surface of living matter is physiologically altered. From the powers of this valuable and formidable remedy, thus exhibited, may be deduced its action in removing the disorders connected with the vascular system.

In the first place, it has a directly antagonistic action to common inflammation. In the second, it qualises the circulation by determining to different secreting surfaces, thus withdrawing the accumulation of fluid from the inflamed organ, and spreading it over healthy structures; in the third, it lessens the mass of the blood by increasing the secretions; in the fourth, it alters the quality of the most important part of the blood, and lowers its powers of stimulation.

Wherever, generally speaking, the kind of inflammation requires bleeding, there the mercurial action is found by all British practitioners to be a most powerful adjunct; and in all cases where it is of consequence to put a stop speedily to the effusion of lymph, as in iritis and croup, and in laryngitis and carditis, there the two remedies of venesection and mercury must be almost simultaneously adopted.

But the most valuable property of mercury, is its capability of being applied when the lancet will not touch the disease.

There is a period in most inflammations of important organs, especially of the lungs, after which no more blood can be safely abstracted—nevertheless the part is gorged with fluid, portending a fatal event unless relieved. This state which has been very variously described, and as variously commented on, is by some called passive inflammation, by others, active congestion; and when action seems suspended, it has been termed passive congestion, or engorgement. These conditions of the vascular system do not remain stationary, but in a shorter or longer time resume activity, and then give rise to a series of phenomena which are known as those of chronic inflammation; which latter state differs from acute inflammation chiefly as to duration. The products of both are similar; the time required in producing them varying. Chronic inflammation, however, is more allied to the natural process of development, or growth.

The conditions I have here noted may be seen by attending to a case of acute ophthalmia, where the bleeding has only arrested the disorganising process. The vessels remain for some time in an intermediate state, between acute and chronic inflammation, after which granulations and the other phenomena of the latter morbid condition arise. What is visible in a case of ophthalmia, is no less certain in inflammations of the lung. The importance of this organ, however, makes the suspension of its function, even during the intermediate state of engorgement, fatal.

Now this state of vascularity is found to cease gradually, on the use of mercury.

There is another use of mercury, namely, its topical application, which, according to Mr. Scott, of Bromley, is of very great benefit. His principle is, that mercury locally applied, alters the capillary action directly, without first influencing the system.

I have not noticed the question as to the action of this agent on the nervous system; that it is capable of creating the greatest disturbance in it, is well known. A certain number of those salivated for syphilis become maniacal. In most persons a great degree of nervous irritability is developed by mercury; and Dr. Bateman has recorded his own case, where mercury administered for ophthalmia produced functional disturbance to such an extent, that nothing but stimuli given night and day, for weeks, preserved his life. It was necessary to wake him every three or four

minutes, on account of the extinction of the pulse by the torpor of sleep.

In these examples it is difficult to determine how far the effects are primary, and how far merely consecutive, to the action on the vascular system.

When the power of an agent is so great, it is to be wielded with becoming caution; not all cases are fitted for mercurial action, nor are all constitutions safe under it. What these constitutions are, and what the diseases which are benefited or injured by the administration of mercury, has been attempted to be defined by the great authority from whose ideas these observations have been framed.

Dr. Farre's rules are these;—"1. Never to give mercury where there is an idiosyncracy against it." The following case is illustrative of the danger of neglecting this advice:—

"A patient of Mr. G.'s, of the Borough, desired him never to give her any mercury, as that drug was a poison to her whole family, to which he, without arguing the point, at once assented. In Mr. G.'s absence, the late Mr. C. was consulted as to some trifling disorder of the bowels, and not knowing the peculiarity of his patient's constitution, prescribed two grains of calomel. The next morning the lady shewed the prescription to Mr. C., saying that she was sure she had taken mercury, as she felt it in her mouth. In a few hours ptyalism ensued; in consequence of which she lost her teeth, her jaw ex-

foliated, and she ultimately, after a succession of ailments, died, in about two years."

"2. Mercury should be used in all active congestions—Pyrexia, phlogosis, phlegmon, ophthalmia, strabismus, cynanche laryngea, cynanche trachealis, pneumonia, and in all inflammatory diseases. In the adhesive stages of dysentery, in the phlegmasiæ, where there is inflammation with power, in tetanus, hemiplegia, paraplegia, neuralgia, in their states of active congestion.

"3. Mercury is hurtful, or doubtful—In the malignant or asthenic forms of pyrexia, where there is low delirium; but in phrenitis, and in that peculiar form of it, the "coup de soleil," it is most effectual. It is hurtful in tetanus from punctured wound, and in all cases of irritable disease.

"In idiopathic iritis, it is as effectual as bark in ague; but in the traumatic it is injurious, as it interferes with the closing of the vessels by adhesive inflammation: hence in all hæmorrhage, where the orifices of vessels require to be closed, it is hurtful.

"In the hemiplegia of lesion, in asthenic paraplegia, in the neuralgia of irritation, it is bad. Poor Pemberton was three times salivated for tic douloureux, and three times the worse for it.

"It is hurtful in the inveterate forms of scrofulous ophthalmia, though useful in the early stage. It is bad in the amaurosis of depletion.

"It is useful in puerperal peritonitis, and hurtful in the typhoid form of it; as also in the ulcerative stage of dysentery.

"In general, it is doubtful in the suppurative stages of inflammation, and in all erysipelatous and erythematous inflammations, or those tending to gangrene. It is hurtful in all cases of pure asthenia from deficiency of red blood."*

* The following important observations were communicated to me in a recent conversation with Dr. Farre.—

"The action of mercury should be sustained, and this is done by giving equal doses in equal times: increasing or diminishing the quantity according as the effect falls below or rises above the medium of beneficial agency.

"A cold and humid state of the atmosphere, prevents the induction of the constitutional effects of mercury; a dry air accelerates it. I have verified," said Dr. Farre, "this important fact, by a long experience of the powers of mercury, and by comparing my observations with those of others, who had also used this medicine largely.

"I was led to the discovery in the following manner. — A gentleman consulted me for ophthalmia, attended with nebulous deposit of lymph on the cornea. I gave him mercury: but the cloudiness and consequent opacity increased. I strengthened the dose, conceiving it to be insufficient, but was surprised to find that, not only the eye which was first attacked had become more loaded with lymph, and that red vessels were beginning to shoot into it on all sides; but that the other eye also was now similarly affected. On enquiry, I learned, that my patient was exposed to the cold damp atmosphere of the banks of the Thames, where he resided. I instantly removed him to a pure dry air, and then found, that even with diminished doses, I very speedily produced the constitutional action of mercury, and the consequent removal of the nebulous deposits.

"When so large a surface as the skin is constantly enveloped in a chill humidity, the action of mercury, which forces the exhalants, is checked, the blood is driven inward, and, the circulation not being equalised, the inflamed parts cannot be extricated from their load.

"It will now readily be understood why the best remedy for

I have thought it right to give the observations of Dr. Farre, in his own words. Whatever difference of opinion may be entertained as to the specialities mentioned, the general views, I believe, to be of great practical value.

With regard to the use of mercury in puerperal fever, I think, that as a purge, it may be used in all the forms with advantage, but not as a mean of affecting the constitution.

In the first form, when inflammatory, it is of essential service after bleeding. In the gastro-enteric it should be given in mild and distant doses, so as to produce an alteration in the secretions, but not to induce ptyalism. Neither in the ataxic form would it be prudent to use it but as an aperient or alterative. In the complicated form, where there is not violent purging, and where the local affections are of an inflammatory, and not of a gangrenous character, it is the nobilissimum remedium. Something, however, must be risked in the treatment of this last type of puerperal fever, both in the use of the lancet and of mercury. The shades of malady cannot be defined nor detected; and, where there is no obvious objection to the production of the constitutional effects of mercury, it should be administered.

Where the remedy produces or increases irritation of the bowels, I have always found it prudent not to proceed with mercury. In any case it should never

ptyalism is pure, dry, warm, fresh air, and why all its evils are increased by a damp chilly atmosphere."

be pushed further than just to affect the gums with simple tenderness. Ptyalism creates infinite distress, without affording any benefit.

If it be determined on to put the constitution under the influence of mercury, this effect will be produced with the least quantity of the drug if a previous depletion should have been made. A grain of calomel, with one or two of Dover's powder, should be given every one to two hours; a larger dose than this is apt to excite the liver and create purging, which, when it takes place, prevents all chance of affecting the constitution. In some instances it may be adviseable not to use any opiate as a constant concomitant to each dose. In these, therefore, to keep down irritation of the bowels, the anodyne may be taken only with every third or fourth dose of the calomel.

Of the various forms of mercury, calomel will be found, generally, most useful, for inducing the constitutional effects of the remedy. Where the bowels are irritable, mercurial frictions should be resorted to, and two drachms rubbed in night and morning. The abdomen may also be kept constantly covered, with the linimentum hydrarg. comp.

In some instances the oxymuriate has been preferred, and Sir B. Brodie informs me, that in phlebitis of the limbs, accompanied by swelling, it is the most efficient remedial preparation of mercury.

TURPENTINE.

I have no experience of the use of this remedy, in-

troduced by Dr. Brenan, in 1814, and praised by Drs. Douglas of Dublin, and Kinneir of Edinburgh, in puerperal fever. It is so rapidly introduced into the blood-vessels, and seems, in animals, to act so beneficially on the mucous intestinal surface that, independent of its stimulant powers, we might, rationally, expect benefit from its use in the complicated form of puerperal fever. Dr. Brenan's mode of administering it is, to give a table-spoonful, at a dose, in cold water, sweetened.

I find, however, that most patients have an unconquerable loathing of this remedy. I believe it to be useful in the second stage of the disease, where the intestines are tympanitic. I have given forty drops in syrup, or emulsion, made of yolk of egg, every four hours. As a rubefacient, applied to the tender abdomen, it will also be found beneficial. I have administered it likewise as an enema. When internally taken, the only benefit observable is in the pulse, which is strengthened. I can form no conjectures as to its modus operandi.

With regard to vesicatories and diuretics, I have little to say, but that both are useful as adjuncts. It is better, I think, to produce irritation and redness, than to cause abrasion of the abdominal surface; and, for this purpose, the mustard poultice and the application of turpentine may be resorted to. These rubefacients are indicated after general and local depletion in the inflammatory type of puerperal fever, and dur-

ing the first stage of the typhoid type, where we dare not abstract blood.

I have tried Dr. Stevens' method, but have found neither benefit nor injury accrue from the use of his celebrated mixture. Most of the patients, however, cannot be induced to persevere with a medicine, the briny taste of which is exceedingly disagreeable to them. In the gastro-enteric form of puerperal fever, I have thought that the vitiated intestinal secretions have been modified by the liberal use of soda.

There still remain a few points of interest which I will very briefly discuss.—

In the complicated form of puerperal fever, the "deposits" which take place in the limbs and eye, require much attention in the treatment. If there be constitutional vigour, or if the part be affected early in the malady, leeches may be applied. They are contra-indicated when these disorganising processes appear in frames enfeebled by disease or constitutional causes. Two or three examples are recorded in my tables, where a few leeches applied, late in the disease, caused immediate sinking. The local inflammation is, even in the very last moments of life, exceedingly painful, and seems to demand depletion; but, unless the whole state of the patient be taken into the account, a dozen of leeches will turn the vibrating scale from life to death.

It is when the eye is attacked that leeching will be oftenest useful. When the seat of deposit is in the

cellular and muscular portions of the limb, it should be covered either with a linseed-meal poultice, or with flannels soaked in decoction of poppy and camomile flowers. The ease obtained is very great; the swelling subsides in many instances entirely, leaving the limb unscathed; in others it is removed in every part but two or three spots which are found to be puffed out with pus, which should be evacuated. Where deposition takes place in a joint, the treatment by leeching and poulticing, will sometimes arrest its disorganisation: in all it will give ease. But there is a tardy convalescence to be looked for, and, even with the best surgical attention, it is often impossible to prevent the loss of motion of the affected limb.

There is another effect of this fearful malady, which I have remarked, but never seen described. Persons who have recovered from an attack of puerperal fever, apparently of no great urgency, often do not regain health for several months, nay, even for one or two years. Their pulse continues rapid and irritable, and scarcely an evening passes without slight febrile excitement. In some, boils or abscesses break out from time to time; in others, the mucous membrane of the intestinal canal is affected by the presence of a painful spot, or by great irritability, and the consequent variation in the quantity and quality of its secretions. In all there is much emaciation.

This state of constitution is often produced after exanthematous fevers, and I have known it occur in two instances after puncture from dissection. As

yet I have seen no fatal termination to this very distressing, and, to the friends of the patient, and the patient herself, alarming state of things. The plan pursued by me, in its treatment, has been,—1. A sustained course of sarsaparilla and mercurial alteratives. 2. The warm bath twice a-week. 3. A change of climate and the use of some of the foreign mineral waters, selected with reference to the peculiarities of the case.

Besides this insidious state of chronic disorder, there is recorded, by most authors, a more obvious derangement of health, the consequences of the effusion into the peritoneal cavity. In these cases the patient either sinks from hectic, or the effused fluid finds a vent through the abdominal parietes. I have, in some five or six cases, remarked the following coincidence, viz.,—The subsidence of a tumid abdomen, and the evacuation, through the vagina, of seropurulent fluid, in such quantity, as to give the patient and nurse the notion of the bursting of an internal abscess. On examination I could detect no uterine lesion and no perforation.

Could the fluid, effused into the peritoneal cavity, have escaped through the fallopian tubes into the uterus, and thence into the vagina?

I shall close this chapter by an account of the empirical treatment, recommended by various practitioners, and collected and published by "Sarenbach, in his Repertorium der vorzuglichsten Kurarten, heil-

mittel, &c." It may afford some hints, and is, at all events, a curious collection of remedial measures adopted against this formidable malady during the last sixty years.

1. Archier, of Provence, recommends Doulcet's method: the ordinary drink, a potion of decoction of marsh-mallows; on the twelfth day manna and sulphate of potash.—Journal de Med. Chir. Aout, 1789, p. 1.

2. Quinot: carbonate of potash, by glyster and by the mouth, up to two drachms; leeches to the pudenda; emollient fomentations to the abdomen; blisters to the calves. — Recueil de Sedillot, T. 7, No. 37.

3. Gebel, of Frankenstein: mercurial frictions. Velpeau, in 1827. (Hufeland's Journal, B. 3.)

4. Autenrieth: injections of decoction of conium into the uterus. (Versuche, f. d. Pract. Heilk.)

N. B. I have found injections of warm water very useful. They should be carefully thrown into the uterus itself.

5. Hegewisch strongly advocates the internal use of mercurials.

6. Sutton recommends cold, externally applied.—The Edinburgh Med. and Surg. Journal, v. 9, 1813.

7. Chaussier: vapour baths; mercurial friction on the abdomen.

8. Wedekind: nitric acid, if taken in Seltzer water, daily, previous to the labour, is a preventive.

9. Brenan, of Dublin: oil of turpentine, externally

and internally. Atkinson, Macabe, Edgell, and Payne recommend it in the last stages.

10. Shath (?): injections, several times a-day, into the rectum and uterus, of equal parts of milk and water, in every eight ounces of which, one ounce of sugar is dissolved. The hypogastrium bathed with hot fomentations, and then smeared all over with the following liniment: pulv. digit. purp. ʒi, Træ. digitalis ʒii, olei olivæ ʒß, adipis ʒi.—Internally calomel and antimony in small and repeated doses; a saline, with digitalis; if much pain, extract of hyoscyamus. Tried successfully for forty years.—London Med. and Physic. Journal, 1816, v. 36.

11. Levret gave sulphate of potash, as a prophylactic. Richter, Spec. Therap. B. 2.

12. Legouais: bleeding and purging.

13. J. W. Collingwood: warm injections into the uterus, and saline aperients.—London Med. Reposit. 1821, v. 15.

14. The reviewer, in Ehrhart Med. und Ch. Zeitung, says, that after bleeding, calomel, conjoined with opium and camphor, is nearly a specific.

15. Gordon and Campbell: bleeding to syncope; warm fomentations of vinegar, or poppy, or camomile, to the abdomen; thirty to one hundred leeches, and purgatives. Campbell recommends calomel and antimony; M'Intosh digitalis and laudanum, in large doses.

16. Wigton's method: at the very onset, a scruple of Dover's powder or even more; several folds of

flannel dipped into hot water, and applied as hot as can be borne, and changed every five minutes, until a general sweat breaks out, when they are to be replaced by hot dry flannels; after this it is time to give a mild aperient of castor oil.—London Med. Rep. 1823, v. 19.

17. Lucas: oil of turpentine a specific.—The American Med. Record, v. 6.

18. Chapman: oil of turpentine, conjoined with castor oil, eases pain and diminishes tympanites.—The Phil. Journal, 1824, February.

19. J. Davies: calomel and opium, in large doses, five to six with one of opium, every two or three hours after bleeding; a blister to the abdomen.—Lond. Med. Rep. 1824.

20. Kinneir: bleeding and purging; oil of turpentine ʒi to ʒii in emulsion, every three or four hours; fomentations of turpentine very useful.—Lond. Med. and Ph. Journal, v. 54.

21. In two instances ice on the abdomen was decidedly beneficial.—Rust's Mag. 1824.

22. Siebold: as soon as there is distinct fever, begin with anodynes, as valerian and opium, for a few hours; then, if these fail, a large bleeding, then a second bleeding or leeches; then treat symptoms.—Versuch. 1826.

23. The reviewer in Ehrhart. Med. Chir. Zeit., says that a combination of opium, calomel, and camphor, scarcely ever fails, especially when preceded by venesection.—B. 3. 1826.

THE FOLLOWING CASES ARE SELECTED CHIEFLY FOR THE LIGHT WHICH THEY THROW ON THE MORBID ANATOMY OF THIS FATAL FORM OF PUERPERAL FEVER.

Sarah Tobut, ætat. 40.

A large coarse woman, who, after a severe and lingering labour, was delivered of her sixth child, on the 10th June, 1835. On the 11th she complained of hypogastric pain, which lasted an hour.

12th. The uterus was large, hard, and painful; pulse 136, large; lochia and milk natural. She was bled to twenty ounces, leeched, and gr.iii of calomel every three hours, with one of opium, were ordered. In the evening she felt pain.

13. and 14. Diarrhœa came on, which could not be allayed during the whole of the day. The motions were composed of serum, tinged with green bile, holding in solution some fæcal matter. They were very offensive. The abdominal pain was slightly relieved. During the night there was nausea and sleeplessness.

15. Faint and low; nausea. The inner part of the right leg, below the knee, acutely painful and swollen. The faintness and the sense of choking continues.

16. The abdominal pain and the swelling of the leg less.

17. An attack of delirium suddenly supervened. She complained of the affected leg, described the pain as if dogs were gnawing the flesh from the bones. The leg exhibited no apparent difference, but felt very hot. A dose of opium was given; in about three hours she slept quietly for several hours, when, a very short time after waking, she began to die, and expired in two hours.

Examined by Mr. Partridge, Professor of Anatomy at King's College, London.

Thorax. Heart soft and flabby; the blood contained in its cavity being treacly, especially on the right side.

Pericardium contained a small quantity of fluid.

Lungs. Parenchyma soft. Air tubes loaded with bloody serum. About two ounces of fluid in each cavity of pleura.

Abdomen. Stomach and bowels distended with flatus; their peritoneal coat injected. The mucous membrane of small intestines healthy; that of the large highly vascular, thickened in patches; and the rectum and descending colon studded with ulcerations.

The mucous membrane of the stomach was very vascular at its cardiac end.

There were several old adhesions of the omentum and peritoneum to the liver and uterus.

Liver much softened; gall bladder distended with bile.

Spleen was very dark in colour, and of the consistence of thick custard.

The kidney was soft, and loaded with fluid black blood.

Pelvis. Uterus large, uncontracted, soft and flabby, the peritoneal coat injected; its inner membrane disorganised, covered with sloughy ulcerations, which could be peeled off. The uterine fibres easily torn.

Ovaria pale and softened into a pulp.

Extremities. On pressing the femoral veins, from the knee upwards, black fluid blood flowed into the pelvis.

Bloody sero-purulent matter was effused between the fibres of the muscles and under the inner side of the right leg; the muscles of that part were of the consistence of clots of blood, and looked like black currant jelly.

Mr. Berkley.

REMARKS.

This case embodies all the forms, and most of the lesions of puerperal fever; the attack on the peritoneum; the attack on the gastro-enteric surfaces; the spread of the malady to the extremities; and, lastly, the ataxic symptoms of faintings and delirium, and calm sleep, almost like the repose of health, followed by death in two hours.

Sarah Butt, ætat. 30,

A large bulky woman, was delivered, after a very rapid labour, of her first child, on the 3rd June, 1835. On the 5th there was hypogastric pain; a pulse of 120, full and soft; a dry, rough red tongue; drowsiness; a copious secretion of milk and lochia. She was bled and leeched, and took some calomel and opium.

6th. The symptoms continued much the same; two dozen more leeches were applied. There was a red swollen painful spot on the right arm, and pain, without discoloration, of the calf of the left leg.

7th. There was fluctuation in the affected arm, and remittance of pain in the leg; general restlessness, and hurried respiration and fainting. Towards morning nausea and purging, and rattling respiration; the calf of the leg turning black, without fluctuation or hardness.

At three in the morning the surface became cold and livid in patches, the nails black, She was sensible to the last moment, asked to be raised, complained for an instant of blindness, and expired immediately.

Examined by Mr. Partridge.

Abdomen. A quart of puriform fluid was floating about in the intestines.

Intestines. No marks of inflammation; the omentum gorged.

Uterus healthy in its substance; no traces of pus in its sinuses; the appendages much congested.

Ovaria reduced to a dark pulp.

The blood in the iliac veins was fluid and thin.

The supinator radii longus and adjoining muscles felt swollen and hard. On cutting into them their substance was found much altered, the fibres appearing grey and boiled. The interstitial cellular tissue was sloughy and partially converted into the same sort of puriform fluid which was effused into the abdominal cavity.

MR. BERKLEY.

REMARKS.

Neither the chest nor the leg were examined. The state of blackness of the limb had faded very much. The mixture of ataxic symptoms, with local inflammations, both in the centre and the surface of the body, with total absence of alteration in the venous tissue, renders this case very instructive.

Anne M'Gee, ætat. 35,

Was delivered on the 21st May, 1835, of her sixth child. On the 26th the pulse rose to 128, but was very compressible. She was drowsy, looked confused; firm pressure on the abdomen elicited no sign of pain.

27th. Slight catarrh.

28th. Tympanites. The countenance like that of a person under intense typhus ; the skin getting dusky; the cheeks patched crimson.

29th. Abdomen still much distended, a red and swollen spot extended from the elbow on the dorsum of the fore-arm to about four square inches; constant nausea; feeble pulse; jaundiced skin; broken utterance; (30th) milk plentiful; bowels relaxed; tongue scarlet, moist; (31st) confused in mind; deaf; bowels still relaxed ; very feeble.

June 1st. Both arms have large, dusky, and painful spots.

2nd. Died at ten A.M.

Examined by Mr. Partridge.

Chest. The substance of the heart very soft; blood contained in its cavities, fluid. There was a small quantity of serum in the pericardium.

Lung. The parenchyma soft; the bronchial ramifications filled with fluid; old adhesions of the right lung to the pleura.

Abdomen. No traces of peritoneal inflammation. The tissue of all the organs, especially of the liver and spleen, very soft; the blood every where fluid.

Stomach. Reddish-brown fluid contained in its great extremity. Its mucous membrane vascular in patches; a thin layer of red gelatinous effusion seemed poured out beneath it.

Intestinal canal healthy.

Pelvis. Uterus large, soft, flabby, uncontracted; its inner membrane ragged.

Underneath the skin and fascia of both fore-arms pus was effused, not in distinct cavities, but between the muscular fibres, which were so soft as to be torn with the slightest efforts.

Mr. Berkley and Mr. Bagshaw.

REMARKS.

This case connects the purely febrile form with local deposit. The aspect of the patient was that of a person oppressed with intense typhus. I repeatedly pressed the abdomen deeply, without eliciting any expression of pain. Our attention was directed to the uterine sinuses, but we found no disease in them.

Harriet Arter, ætat. 32, *3rd June,* 1828.

The 1st day, after a natural labour, she complained of great abdominal tenderness, for which she was bled to ℥xvi; but this still continuing fifteen leeches were applied in the evening. The pain subsided on the 10th June. The tongue was coated; the pulse 130; the evacuations offensive and dark, and somewhat too frequent (11th).

On the 12th the mind was irritable and depressed, and she thought she should die; on the following day (13th), this state terminated in delirium, insomnia, and faintness. For the two following days the mind was calm, but she saw objects floating before her

eyes (15th). The faintness had been relieved by æther. For two days she continued to mend, but still she slept little, and felt very weak. After having been up with the other patients, another shivering fit ushered in a second attack of hypogastric pain (18th), the pulse again rising to 130, and in addition there was constant vomiting. The eyes were sunken, the countenance haggard, and the feelings of debility extreme. The pain in the uterine region was increased by pressure; the bowels were purged, and the evacuations were offensive. For the three following days she continued to become daily more emaciated; the abdomen was tympanitic; and at last she died on the 22nd: the disease having lasted fifteen days.

Dissection eighteen hours after death.

Abdominal cavity contained a pint and a half of sero-purulent effusion. Pus, which was found in various parts of the abdomen, was in greatest quantity near the junction of the uterus and lig. lata, and between the liver and diaphragm. Several small abscesses were discovered at the root of the broad ligaments, and under the uterine peritoneum. The whole peritoneum was more vascular than usual; uterus was perfectly healthy; stomach filled with coffee-coloured fluid; its mucous membrane quite pulpy; the whole intestines distended with air; the liver, kidneys, brain, and other viscera quite healthy.

Messrs. Gaselee and Walton.

REMARKS.

There are several points of interest in this case. It is one which marks the connection of what I have termed the gastro-enteric form of puerperal fever with the peritoneal. Had not the symptoms of peritonitis recurred, those of fever accompanied by mild delirium, and an irritable state of the intestines would have formed the prominent features of the case. The dissection proves the real nature of all these symptoms.

Mrs. Leigh, ætat. 23,

Was delivered of her first child on the 17th April, 1831. On the 18th she had a rigor, and complained of uneasiness, and her pulse was quickened; no lochial discharge; tongue loaded.

19th. An increase of abdominal pain; a rapid feeble pulse; poultice, with twenty-four leeches; and calomel and opium every three hours, were ordered.

20th. The pain spreading over the whole abdomen; sick; tympanites.

21st. Head more painful; the abdomen much less so; bowels costive; tongue and pulse as before; opening medicine (22nd), which operated well. The pain of the head diminished, that of the abdomen increased. Flatulency, sickness, and diarrhœa supervened; cold extremities and a countless pulse, with

scarcely any interval between the beats; stimuli; (23rd and 24th), pulse, and strength better.

25th. All pain of abdomen and head gone, as also flatulency; bowels relaxed.

25th. Weak; tympanitic; hurried respiration; uncontrollable diarrhœa; death on the morning of 27th.

Examination twelve hours after death.

Three pints of serum, yellow and turbid, were contained in the peritoneum. Large masses of coagulable lymph surrounded the uterus, and lay on the convolutions of the intestines; the peritoneal coat of which was slightly reddened, while that of the uterus was pale. The uterine substance, and the uterine appendages, were natural, and no pus was found in the veins. The uterus was not enlarged. The intestines were distended with air; their mucous membrane was sound. The thoracic viscera healthy. The heart and blood-vessels empty of blood, but undiseased.

J. N. Weekes.

REMARKS.

This affords another instance of the combinations of all the forms of puerperal fever in the complicated. The ataxic symptoms are remarkable.

Elizabeth Cook, ætat. 28, 1829.

Was delivered naturally of her first child on the 9th January, and continued well till the 13th, when

she felt severe pain in the right groin whenever she sat up, and only then. The lochia had ceased the night previous; the pulse was 85. On the evening of the same day the pain appeared to be in the glands of the groin, but speedily spread all over the hypogastrium to the umbilicus, and became intense. This increase of extensive and intensive pain was ushered in with the usual rigor, succeeded by the hot fit. Pulse 90, weak. The pain returned every half-hour. She was bled to 10ʒ, and leeched, after which the pulse rose to 120. Dover's powders grs.x. quartis horis, and the poultice; the pain was less intense.

14th. Pain is brought on by the slightest movement. Pulse weak, 100; tongue red in the centre, with white edges. Sickish; soreness constant; pain occasional. During the greater part of this day the sickness continued. Aperients were ordered, and eight leeches applied to the belly, which afforded ease only for a short time. The points constantly sore were the upper half of each iliac region, lower half of each lumbar, and all the umbilical.

15th. Almost all soreness was gone, there was no secretion of milk nor lochia; pulse 100. Eight leeches were applied to the remaining sore spot, when the pain recommenced (as if from their bite); gr.xii. calomel given.

16th. The pain remits, but leaves constant soreness. Tongue brown, with red edges. The bowels became relaxed: remedied by laudanum; no altera-

tion during this day, except that the pain was more severe on the poultices being omitted, and there was difficult breathing, and troublesome cough.

17. Turpentine applied to the abdomen relieved the active pain without removing the soreness. The belly was fuller, and she shrunk from all pressure. The pain came on in violent paroxysms during the day. The pulse fluttered, and could at times scarcely be felt.

18th. No alteration; the pain and pulse as yesterday. Wine given, and at three o'clock the pain was excruciating. In this state she continued until the 22nd, when the pulse was 90, and the pain and soreness ceased.

23rd. Thirst constant; irritable stomach, and a scarcely perceptible pulse from this to the 29th. The bowels were more or less constantly purged, the stomach irritable, thirst insatiable, but internal soreness not great. The tongue became aphthous, and an eruption broke out on the hands, neck, and arms. It is not like petechiæ nor measles; the abdominal skin had been made raw with local applications, so that the least touch caused her to scream out.

From the 29th to the 31st, when she died, there was diarrhœa on the slightest motion, and constant vomiting.

Examined thirty-six hours after death, by Mr. Gaselee.

Thorax. Every structure perfectly healthy; no effusion.

Abdomen. No effusion. Peritoneum was of a dull lead colour, but no vessels ramifying on it. It was covered with a dense white membrane not of recent formation, which could be separated from it. Omentum adhered by its lower edge, both to the umbilicus before, and to the intestines behind. The small intestines strongly adhering to the bladder and uterus; when these adhesions were broken through, pus as thick, and very like soft tubercle issued, especially from the right side. A purulent collection, in which lymph was mixed, was found under the cæcum, the viscus being quite imperforate. The uterus was firmly adherent to the bladder and the rectum, so as to be removed with great difficulty. The coats of the bladder quite sodden, soft, and readily torn.

Uterus. Size natural to the period. Colour deep livid. Its peritoneal covering much thickened on its posterior surface. Several ulcerated cavities, one of which extended quite into the cavity of the uterus; besides which there were purulent deposits under the uterine peritoneum, which when cut in two, appeared of various depths, extending inwards. Inner surface of the uterus lined with a pulpy dark layer, like coagulated blood. This could be raised, and exposed

the ragged edges of several ulcers, one of which, as mentioned, quite perforated the uterine substance, but not the covering.

The right ovary contained two purulent cysts. The mucous membrane of stomach and intestines softened, and easily separable. Liver and other viscera healthy.

MR. GASELEE.

REMARKS.

The usual course of the malady in a chronic form, viz.; abdominal pain remitting, but leaving a heavy constant soreness, together with affection of stomach, chest, and bowels.

Anne Biggs, ætat. 39 ; *confined* 18*th March,* 1830 ; 8*th child.*

On the evening of her confinement, her manner was much excited. On the 19th she was incoherent, and complained of great pain in the calf of the right leg, which was tender on pressure. She had been much shocked by seeing one of the patients faint.

The pulse being hard she was bled to ℥xii. On the 20th the leg was swollen and white, the pain in it much increased ; towards the evening the calf of that limb became black, while at the tendo-achillis the skin was hot, tender, dry, and mottled. The bowels were much opened, the head giddy, the pulse quick and strong. She was again bled to ℥xxvi, and twelve leeches applied to the temple.

On the 21st, she appeared better, but the nausea which had commenced the day before ended this day in vomiting. There was also a continuation of the diarrhœa.

On the 22nd, after a quiet night the breathing appeared short; the leg ceased to be discoloured, but was swollen and tender.

On the 23rd, she complained much of the confusion of the head, and a feeling of madness. The leg was tolerably easy; the inner and under part of the thigh was very tender, the pulse fluttering.

On the 24th, the diarrhœa continued, and there was increased weakness, a hard swelling about half as large as an egg, appeared at the wrist, and one of the orifices made by venesection was black and painful; towards the evening the breathing became laborious. She, however, swallowed a draught, and died immediately, without further struggle.

Dr. Rigby.

Dissection.

On opening the skull-cap a good deal of serum dribbled away, and on opening the ventricles full ℥vi more. All the ventricles considerably dilated, and the foramina Monroi as large as sixpences. There was a good deal of effusion into the arachnoid and pia mater, but no vascular points more than common. All the viscera perfectly healthy, except the heart and spleen; the latter was very large, and on pressing

it, a large quantity of dirty red pulpy matter exuded, liver pale. The lining membrane of right auricle and ventricle when washed had a dark red hue, the consequence, seemingly, of inflammation. The femoral vein, just at the ingress of the saphæna, and the superficial vein on the back of the leg, have their coats very much thickened, so as to cut like arteries, and their lining membrane similar to that of the right cavity of the heart. When they are divided, purulent matter mixed with thin light-coloured blood escaped. The cellular tissue forming the sheath of the femoral vessels, and the whole of that tissue on the calf showed marks of recent inflammation, being red and vascular, but in this there was no appearance of pus. None of the glands of the groin or ham were enlarged, nor did the cava inferior show such marks of inflammation as did the other veins.

The case treated under the superintendence of Dr. Locock, by Dr. Rigby and Mr. Berry, the dissection made by the latter.

REMARKS.

This case establishes the connection of phlegmasia dolens with the other lesions of puerperal fever, as emanating from one source. I have repeatedly seen the one consecutive of the others.

Mary Ann Parr Marsh, ætat. 34; *first child.*

Delivered on the 6th, November, 1834, easily and

naturally. After two rigors followed by a hot and sweating fit, she complained of slight pain of the abdomen and of the chest.

On the 8th and 9th, abdominal pain continued, and in addition there was diarrhœa and a disturbed brain. She fancied she saw persons about her bed, and talked sillily rather than incoherently.

On the 11th and 12th, the perspiration was free but fetid, purging and vomiting of coffee-coloured fluid, and now for the first time great pain in the uterus. Dr. Rigby prescribed gr.ii. of solid opium, effervescing draughts, with ammonia in excess, and a mustard poultice, to relieve the acute pain at the umbilicus. The opium allayed the vomiting.

13th and 14th. Appeared much better; allowed meat diet, but said she felt exhausted by eating it, and vomited.

On the 15th, after a good night, she looked anxious, complained of pain in the exact course of the inguino-cutaneous nerve. Pressure on the femoral vein caused no pain; the thigh swelled slightly.

16th. Restless night, diarrhœa, increased swelling, but still no pain along the course of the femoral vein. Some quinine was ordered, and sixteen leeches to the thigh; immediately after their application she became low, and in spite of brandy and stimulants she sunk at noon on the 17th.

Seen by Mr. Norblad and Dr. Rigby in the commencement, and Dr. Hugh Ley at the end.

Dissection.

Body much attenuated; left thigh one-third greater in circumference than the right. Abdomen tympanitic, parietes very thin. The lower part of the ilium caput coli and arch of the colon contain air. A streak of inflammation is delineated along the anterior surface of the colon, from the centre of the arch throughout the descending portion of this intestine to the left iliac region; it is marked by a transverse band of capillary vessels, minutely injected in the thickened peritoneum along the whole of this course. A few convolutions of the small intestines smeared with recent lymph, and one fold was found to adhere closely to the left side of the pelvic peritoneum, at the point of reflection of the ligamentum latum uteri. A few small portions of coagulable lymph were also found loose among the intestines. At the posterior surface and left side of the body of the uterus, soft lymph and pus were effused for the space of an inch beneath the peritoneal covering of this viscus, the membrane itself being highly vascular from inflammation, but still shewing the effusion through its texture. The fundus of the uterus where it has the fallopian tube and round ligament attached, was similarly affected, though in a slight degree; lymph and pus were effused here also. From these two points the inflammation seems to have spread to the rest of the serous membrane; from the first indicated point

it has progressed along the posterior fold of the broad ligament to the surface of the rectum and colon. From the second situation, the round ligament and fallopian tube have formed the continuous line of its progress. On raising the peritoneum from the iliac fossa, the cellular membrane which envelopes the round ligament where this cord is about to encircle the epigastric vessels, after quitting the peritoneal cavity, was found infiltrated and condensed with lymph and pus. The whole of this cellular membrane, which it will be borne in mind, is the *facia propria* of Sir A. Cooper, and which fills up the *femoral ring*, and moreover forms the medium of transmission for the lymphatics of the thigh, was in the same condition, densely matted by lymph, and containing pus in the interstices.* The lymphatic glands in the groin were slightly enlarged, and some serous fluid was effused into the surrounding tissue. The femoral vein and artery were free from disease; the inner coat of the former vessel, as well as the external and internal iliac veins and vena cava, had not the slightest trace of increased vascularity or thickening. The chain of glands from the femoral ring along the course of the iliac vessels and aorta, *on the left side*, were enlarged, soft, and vascular. Several of these lymphatic bodies, contained between the layers

* This condition of parts bore the closest analogy to the state of the cellular membrane, so constantly observed in fatal cases of phlegmonoid erysipelas, or diffuse cellular inflammation.

of the mesocolon, were found enlarged, and to contain soft lymph; thus, is plainly demonstrated the origin and course of the diseased action, as well as the course of the phlegmasia dolens. The uterus was of the size usually found at this period, its tissue dense. The section shews the sinuses still large; the openings on the internal surface plainly indicated by adherent coagula, *the interior still lined by a soft dark structure, which is of great thickness where the placenta had been attached.* The curvature of the spine is the *lateral,* and takes in the whole of the column from the first dorsal to the last lumbar vertebra. The two or three uppermost vertebræ have a slight tendency to the right side; a sudden turn is then made to the left, and there results a very acute angle at the centre of the dorsal portion, in the left side of the thorax. From this to the sacrum the column is gradually regaining its proper direction. The ribs are much distorted, and left side of the thorax is greatly encroached upon. The pelvis most ample in every direction. The viscera sound.

REMARKS.

This careful dissection was made by Mr. Norblad. The case is a genuine instance of the fourth form of puerperal fever, establishing the connexion between the affection of the limb and that of the other organs from one source. I need scarcely direct the reader's attention to the membrane lining the uterus, incidentally mentioned in this and in other cases.

Elizabeth Waldron.

She was delivered on the 17th February, 1836, of her first child, and continued well till the evening of the 29th, when, after a severe rigor, the abdomen became tympanitic, but not painful. The pulse 140, and weak; frequent vomiting, and a furred tongue.

On the 1st March, firm pressure elicited pain on one spot. Pulse 130, with a cool skin. Twenty leeches were applied, and the next day no pain whatever could be detected; but the skin was yellow, and she was constantly nauseated. There was a troublesome cough, and involuntary watery stools. In this state, with increase of the jaundiced hue of the body, low delirium, and sighing, she lingered for three days, and died at ten P.M., of the 5th March.

Examination fourteen hours after death.

In the left side of the chest was found about a pint of serum, and the surface of the lung was covered with flakes of lymph. The lung of the left side was much gorged with dark blood. The heart and great vessels were healthy. No traces of inflammation of the peritoneum. The spleen, pancreas, and liver were not unhealthy in appearance, but were all much softer than natural; the latter was filled with fluid blood, but no traces of bile to be seen. The gall bladder contained numerous small gall-stones, one of which

was loosely impacted in the duct; also some thick green bile. The left kidney was healthy, but the right much diseased; it was, in parts, of a dark colour, soft, and very offensive, with numerous deposits of lymph. The uterus was fairly rotten; the inner membrane presenting one mass of slough, and stinking horridly. The substance of the womb was also completely disorganised. The veins were healthy, the blood everywhere quite fluid. The appearance of the kidney, in this case, was very peculiar and difficult to describe. There was some difference of opinion as to the nature of the disease;—Dr. Ley, however, was of opinion, that it was of the nature of fungus hæmatoides, and that it had existed some time before her confinement; moreover, she stated that she had suffered pain in the right lumbar region for some time. Dr. Ley considers that the uterus had taken on the same action, as some of the appearances in that organ closely resembled what was seen in the kidney.

This case was treated by Mr. Malton, under the inspection of Dr. Ley; the Notes are taken by the former gentleman.

REMARKS.

I considered the morbid appearance in the kidney and uterus to be the common result of one and the same cause. It appeared to me highly improbable that impregnation should have taken place had fun-

goid disease of both these organs have been of long standing. The uterus, it was seen, was putrid; and the kidney, which was much enlarged, and of which I possess a drawing, was in a state of active congestion, such as is seen in the ovary. The deposit of flakes of lymph is often found on the uterus, and is a common phenomenon of phlebitis in other organs.

Elizabeth Wainwright, ætat. 29.

She was delivered on the 14th January, 1838, at one p.m., of a dead male child, after a flooding labour, owing to a partial placenta presentation. On the following day (16th,) at nine p.m., she complained of cough, great debility, restlessness. The pulse was rapid and weak, and the abdomen tender on pressure. On the 17th, the restlessness and abdominal pain were increased. The pulse very rapid, and there was incessant vomiting. She died at two in the morning.

The treatment adopted by Dr. Rigby, was Stevens' mixture; stimuli; and ice to the abdomen.

Post-mortem Examination.

The abdomen contained much flatus, but there was not more than ℥iſs of fluid, which was of the same curdy appearance as was found in other cases. The intestines were healthy, but rather pale, as was also the peritoneum, except that portion covering the great right lobe of the liver, which was covered over with a layer of coagulated lymph. The stomach was rather flaccid, and its mucous membrane exhibited the pulpy

state, mentioned as seen in other cases. Kidneys were small and pale; the capsule easily separable. Spleen small, and remarkably firm. The liver was decidedly diseased; on cutting into it, small portions of the viscus had assumed the yellow tuberculous appearance. Lungs tolerably healthy: did not contain tubercles; the apex of each (especially of the right lung) firm, almost approaching to hepatization. The uterus firm, and contracted to its natural size; its internal surface dark and sloughing. The sloughs seem hanging in ragged portions from its lining membrane, and also from the superior part of the vagina. The place of attachment of the placenta was marked at the posterior, and lower part of the uterus extending as far as the os-uteri, by small cotyledonous masses, formed by the termination of the uterine vessels. The ovaria were completely disorganised, that on the right side having entirely disappeared; but the greater portion of the left still remained, and contained a well-marked corpus luteum, in a morbidly enlarged state. The fallopian tubes were also large and vascular. Vessels of the uterus healthy, and the blood had not that dark colour, neither was it so thin, as in the case of Poole, who died of this disease.

Mr. Raven and Mr. Weston.

REMARKS.

This was one of those instances of overwhelming malady, which were so rife at the commencement of

the year 1838. The child had been retained in utero, in a putrid state, apparently some time previous to her confinement. The brunt of the disease was obviously expended on the uterus and its appendages; but the state of the stomach, liver, and lungs, show, that its influence had radiated to more distant, and scarcely less important organs. If we were to be guided by symptoms merely, this case would have been classified by Hulme and Clarke, as the low or putrid type of *peritoneal* fever. It belongs, really, to the complicated, as involving various centres of malady.

Susan Barlow, ætat. 27.

Was delivered, after a tedious labour, owing to a face presentation, at half-past eleven, on the night of the 13th February, 1836. Twenty-four hours after, she was attacked with pain in the abdomen, slight tenderness, and diarrhœa. The tongue was red; the pulse very quick. In spite of opiates, hydr. c creta, and chalk mixture, the diarrhœa and abdominal tenderness continued until the 16th, when every symptom had subsided, and she complained of nothing but sleeplessness. In this state of apparent convalescence she continued until the 23rd, taking half-a-grain of morphia, at night, to procure that repose which seemed to be driven away by the pressure of domestic affliction; she was up and walking in the ward, but, looking wretchedly ill, and feeling very feeble. The pulse

was 140; the tongue white, with red edges; the lochia profuse and serous.

23rd. As her bowels were costive, a little hydr. c creta, with Dover's powder, was given at night, and, the following morning, two tea-spoonsful of castor oil. On the morning of the 23rd, the bowels had acted very frequently, but without pain; neither was there any abdominal tenderness. A new set of symptoms now appeared:—excruciating pain of the shoulder joint, along the arm, and in the wrist of the right arm, together with much fever, and a flushed face. The next day the right thigh and ankle were in the same state as the arm, and a red inflamed spot appeared at the inside, just over the right knee. The pulse 120. In the evening she was attacked with delirium. She was perspiring profusely; the pain in the limbs made the slightest movement or pressure intolerable. A grain of morphia removed the cerebral excitement.

25th. In addition to the local pains in the right side, the left fore-arm was now observed to be affected. Forty drops of the oil of turpentine were ordered, but, such was the nausea produced by it, that she could not be prevailed on to repeat the dose in this form; chian turpentine, given in pill, was, therefore, substituted.

She now wasted rapidly; perspiring profusely; was delirious at night; restless always, and always in pain. The day before her death she rallied for a time, and the mind was calm; but, on the recurrence of the delirium, and sudden dyspnœa, she expired

on the 29th, at eleven A.M., fifteen days after the commencement of the disease. The local affections appeared to be subsiding, for the swelling of the thigh, the inflamed spots on the arms and ankle, together with the pain in the right shoulder joint, were all manifestly better.

Dissection twenty-four hours after death.

Abdomen. All the abdominal viscera were perfectly healthy.

Pelvis. The uterus was not large. It was thought to be somewhat softened* in texture, and over vascular. Its inner membrane was, in parts, of a dark purple, in others, of a redder colour, and could easily be separated. There was a small circumscribed abscess in the substance of the uterus, at the orifice of some veins, but no pus could be traced into their cavity, neither could any alteration of their coats be detected after a careful examination. The iliac veins were also quite healthy.

The blood was everywhere dark and fluid, no coagula being found. The heart was healthy.

Chest. There was a layer of recent lymph on the right pleura, and half-a-pint of bloody serum was effused into the cavity. The lung, on that side, was healthy. The pleura of the left side was healthy, but the lung was of a deep black colour, gorged, softened, and gangrenous.

* It was ragged.

There was a little pus under the inflamed spot on the thigh, some under the right fore-arm, and slight traces of it in the capsule of the right shoulder joint.

REMARKS.

The most prominent symptoms here were those from local deposit. The quantity of pus found, however, was extremely small. It is difficult not to connect the disorder in so many and such distant parts of the body, with the unnaturally fluid state of the blood. The affection of the lung supervened only a few hours before death.

Ann Wood, ætat. 33,

Was delivered on the 5th December, 1828, of her first child naturally. On the 9th she was seized with rigor, followed by a long hot, and then a sweating fit, ending in abdominal pain, which was immediately relieved by a warm poultice; the pulse was 90. In the evening there was a second aguish paroxysm, and a more defined pain of the right hypogastric and pubic region, and much dizziness; the pulse 130. The secretions natural; twenty leeches were applied, and an aperient given (10th), which relieved the pain; the pulse was 100. The hands were tremulous (11), and there was still considerable soreness on pressing the pubic region. Twenty more leeches were ordered, which afforded great relief; but in the course of the day she vomited and became very weak. Abdominal

pain had subsided ; stimuli to support strength. Turpentine externally and internally. Opiates to check diarrhœa were given without benefit. The mind remained perfectly clear till within an hour of her death, which took place on the 12th, at midnight.

Examined twelve hours after death.

The peritoneum covering the intestines was brick red, smeared with coagulable lymph, though not thickly. About a quart of water-gruel-like effusion was contained in the peritoneum. The ligamenta lata and the ovaria were highly congested, and appeared quite black ; the uterine and muscular peritoneum congested ; the uterine substance quite healthy, its inner membrane lined with a deep layer of blood-coloured mucous, underneath which the substance of that organ was quite pale.

No other lesion found.

REMARKS.

The deep layer of blood-coloured mucous lining the uterus, is a morbid condition of Cruvelhier's traumatic membrane.

Eliz. Mann, ætat. 28th, 12th Jan., 1838 ; *first child.*

Two days after a tedious labour the abdomen appeared swelled, but was painless. On the following day the pulse was 130, and very feeble ; the abdomen tympanitic, and painful over its whole sur-

face; the tongue red and moist; no milk, and scanty lochia; the countenance anxious.

Soda; beef-tea; mustard poultice.

Vomiting of green fluid supervened, the vagina was sloughing, and the bowels relaxed. The two following days the symptoms gradually increased; the pulse 140; the tympanites more prominent; the weakness more marked; the elbow and wrist of the left side were painful; the legs and thighs covered with an eruption like purpura, when it first appears; it soon, however, disappeared. In a few hours after the difficulty of breathing increased with the increasing tympanites, and she died.

Soda; opium; stimuli, ice.

Post-mortem examination, 18*th January*, 1838.

The cavity of the abdomen being laid open, a large quantity of flatus escaped. On examining its contents, the first morbid appearance to be noticed was, extensive adhesion of the intestines and folds of the mesentery, which were quite matted together. This was evidently the result of disease of former date. The surface of the peritoneum was covered with lymph, large quantities of which were mixed with serum, forming a fluid resembling curds and whey—there might be as much as ℔iij of this fluid contained in the abdominal cavity. The liver was perfectly healthy, perhaps rather congested, but its peritoneal surface was covered with lymph. The

stomach and intestines exhibited no signs of disease, except that the mucous membrane of the former was noticed to be easily broken up, or inclined to go into that morbid condition termed pulpiness. The spleen and kidneys perfectly healthy. The thoracic viscera were likewise free from any morbid appearance—the blood in the large vessels was dark and coagulated, not, as in the case of Elizabeth Poole, thin and fluid. The uterus was next taken out, and very carefully examined; its external peritoneal coat was thickened—uterus itself contracted to its proper size. The same sloughy appearance showed itself in this case as in that of Wainwright; but in this it had gone on to a greater extent, large sloughs were found hanging from its internal surface. The vagina also was in the same condition throughout its whole extent, even as far as the external aperture. Ovaria disorganized, and in a semi-fluid state—in each there was to be seen a corpus luteum, in a diseased state, dark and enlarged. The fallopian tubes were also much increased in size, and very vascular.

Mr. Raven and Mr. Weston.

REMARKS.

This woman was miserable and half-starved when she came into the Hospital. The extensive internal disorganisations, and the tendency to softening of the tissues, together with the eruption on the skin, and the painfulness of the limbs make this an instructive

example of the complicated form of puerperal fever. It is worthy of remark, that the eruption and tendency to local deposit were slight, while the internal morbid actions were so severe.

Sarah Spiers, ætat. 20,

Was delivered on the 4th September, 1828, of her first child, naturally. On the 7th, her bowels having been acted on, she complained of acute abdominal pain, which yielded to two doses of Dover's powder in about four hours.

8th. During the night there had been much purging, succeeded by rigor, hot fit, and a tendency to return of pain. In the morning the left leg, from the groin towards the knee, was acutely painful on pressure or motion; it was slightly red, but not swollen nor hard. There was a hard full pulse (118), and much febrile excitement; she was leeched, purged, and nauseated.

9th. Firm pressure only caused pain in the thigh; the calf of the leg was tender; more leeches were applied at two different periods in the twenty-four hours, and again the next day.

12th. All pain but in the groin had subsided, but the pulse had risen to 130; the breathing was hurried; much debility.

13th. The abdomen became exquisitely tender on every part; gases evolved from the stomach; diarhœa; tympanites.

14th. The pain left her. The features were contracted; the hearing impaired.

15th. The pulse 170; extreme debility. In this state she lingered till the afternoon of the 16th, without any other symptom, but those attending collapse, viz., coldness, pulselessness, and incoherence.

Examined eighteen hours after death.

No tumidity of the abdomen.

Chest. Healthy.

Abdomen. About two ounces of semi-purulent fluid in the cavity of the peritoneum. Three flakes of recent lymph covered the ascending colon. The peritoneum lining the parietes was colourless, but was very arborescent at the great curvature of the stomach. The mucous membrane of this organ was in the same condition.

The ilium, but especially the cœcum and beginning of the colon, were similarly affected.

The iliac and femoral vessels, which were not examined with sufficient nicety, did not, however, present any obvious marks of disease.

All other organs were healthy.

MR. GASELEE.

REMARKS.

This is a case, in which the tendency in the malady to extend from the inner surfaces to the limbs is marked. It is to be regretted that the examination

of the limb was not more carefully made; but I well remember that the larger venous trunks of the leg and thigh were, as the notes of Mr. Gaselee state, not obviously diseased. I know, from other cases, that great painfulness of the limb may exist, and completely subside, just as, in the peritoneal attack of puerperal fever, there may be exquisite tenderness removed spontaneously in a few hours.

Anne Hoskins, ætat. 35; *first child.*

This patient was delivered by Dr. Ferguson with the forceps, 18th April, 1827. On the night of her labour she slept well, but the next day complained of abdominal pain, which occurred at intervals, in the hypogastrium only; the pulse 88, and strong; tongue loaded; the discharges copious.

19th. In twenty-four hours after this the pulse which rose to 140, was weak. The discharge occurred at intervals only, and the breathing was much accelerated.

21st. During the next two days the abdominal pain continued, occurring at intervals of five minutes, and leaving, however, a sensation of soreness which was constant; the skin was sallow; the pulse and the discharge as before, as also the respiration.

22nd. The next day the stomach became irritable; the abdomen swelled.

23rd. The pain had ceased, but the soreness remained; the pulse 86; she still was sick, and short-breathed; the stools very dark-coloured.

24th. The pain and soreness quite gone, pressure causing no inconvenience. The right ankle became inflamed, and during the whole of the attack, in spite of opiates, there was a great tendency to diarrhœa. She remained in this state for a few days longer (the tongue becoming gradually clean, and the discharges returning), but a bluish ring of soreness surrounded the ankle-joint, in which she still felt pain.

On the 8th of May she left the Hospital in good health.

Duration, 18th to 29th. DR. DEW.

REMARKS.

This case shews the connexion between the bowel attack, peritoneal attack, and local deposit; it also exhibits the extension of the disease, from its point of origin to the outer surfaces. The local deposit is of a slight kind.

Harriet Ann Pratt, ætat. 18.

This girl was confined of her first child on the 17th February, 1836, and continued well till the 19th, when she complained of burning heat and tenderness in the uterine region. The pulse was 130, and hard; the tongue white; and there was headache. After her bowels were opened by castor oil, she took grs.v of hyd. c. creta, with grs.viij of Dover's powder; a poultice was applied to the abdomen. In six hours all feeling of pain had ceased, and she had slept; nevertheless, pressure on the large

soft uterus caused her to flinch. The breathing was short and sighing; the eyes very bright; and the countenance expressive of excitement. Eighteen leeches were applied to the uterine region, after which some calomel and Dover's powder were to be taken.

20th. She expressed herself relieved — she had passed a quiet night; the vagina appeared sloughing; and this after an easy labour, and in the absence of all local injury: the discharges were fetid. Early in the morning great uterine pain recurred, and the breathing was interrupted by sighs. The pulse continued to be very frequent. The pain was entirely removed in an hour after she had taken an opiate draught; but in six hours it recurred, and on the repetition of the opiate was once more relieved.

21st. After a comfortable night she awoke with severe uterine pain. There was slight tenderness of the abdomen; during the day the pain returned, but was relieved by pressure; the bowels were relaxed.

22nd. She passed another good night; there was slight abdominal tenderness, but in the evening it became very severe, and was accompanied with tenesmus. The hyd. c. creta, with Dover's powder, were continued, and an opiate draught administered.

23rd. The abdominal pain was constant, but less severe; the sloughs came away from the vagina. On the evening of this day she was attacked by sudden vomiting of coffee-ground matter, and complained of much pain in the chest. There was great difficulty

of breathing; a small thready pulse; cold perspirations, collapse, and death on the 24th, at nine A.M.

Post-mortem examination.

When the abdominal cavity was opened, we first observed that the bowels were distended with air, and next, that it contained a considerable quantity of serum, with numerous flakes of lymph. The peritoneum lining the viscera and the muscles, was of a dark brick-dust colour generally, and recent lymph was effused on its surface, sufficient to glue together the bowels in many parts. In the right iliac fossa there was a quantity of pus, which appeared to be loose in the cavity of the pelvis. In this mass was observed the fimbriated extremity of the fallopian tube; and, on tracing this further, matter was found in the ovary itself. The uterus was about its natural size ten days after delivery; some parts of its structure were of the natural appearance, but others of a dark purple colour, and superficially ulcerated, its internal membrane soft, nearly black, and easily peeling off. This was best seen at the fundus, where the placenta had been attached, and where some half-loose portions were adhering. The vagina was of the same purple colour, and superficially ulcerated; the ovaries were both soft and pulpy; the uterine and iliac veins were perfectly healthy. We next examined the chest, and found on the left side a large quantity of coffee-ground fluid, similar to what she had vomited. It

was some time before it could be ascertained where this had come from. At last there was observed a large gangrenous opening in the œsophagus, and when the finger was introduced, the tube was found so rotten that it broke down on the slightest touch. The lung, on the left side, was quite collapsed ; but the right was distended with air. The heart was quite healthy, as were also the large veins, and contained both old and recent coagula. The blood, generally, was not fluid.

Mr. Bulkley and Mr. Springall.

REMARKS.

In this case the quantity of effused lymph and serum was as great as in Whitaker's ; but the contrast in the vascularity of the two peritoneal membranes was remarkable :—in Whitaker's it was pale ; in this, congested and brown from vessels. The lining membrane of the uterus was black and sloughing, just as in the case of Whitaker. The sloughing of the vagina appeared early, but when coupled with the gangrene of the œsophagus, and state of the womb, it must be looked on as arising from some general cause, and not from any local injury in a natural and easy labour. The difficulty of treating such a case is apparent. What remedies are applicable to a constitution, in which gangrene of some organs is going on simultaneously, with effusion of lymph into the abdomen ? Shortly before her death we had every hope that the malady was relieved.

The suddenness of the onset of the last symptoms made us suspect perforation somewhere, but it was a surprise to all to find it in the œsophagus. There had been no complaint made even of uneasiness in the throat, during the malady.

F. Miller, ætat. 23, *6th March,* 1836.

This woman had been generally anasarcous for the last three months. About forty-eight hours after her delivery the abdomen had become distended with air. There was a troublesome cough, accompanied by frothy expectoration, slightly tinged with blood; a very frequent and weak pulse. The symptoms did not vary in essentials for the next two days, when numerous vesications were discovered on the nates and inside the thighs. The abdomen once more became enormously distended with air, and now, for the first time, it was exquisitely painful on pressure, and she died within twenty-four hours from the appearance of this symptom.

Post-mortem examination.

Was examined on the 15th. On opening the abdomen a large quantity of serum, mixed with lymph, escaped, and the peritoneum every where was very vascular, and covered with flakes of recent lymph, gluing the bowels together. All the bowels much distended with air, pushing the viscera upwards, and thus encroaching considerably on the cavity of the chest. The lungs were healthy, but adhering univer-

sally to the ribs on both sides. The lower lobe of the left lung, however, was converted into a dark solid mass. This part contained no air, and sank when put into water. The pericardium contained about ℥iv of serum. The heart was firmly contracted, and the left ventricle thicker than natural; the valves were quite healthy. The kidneys were pale and mottled; the corticle and tubular structure not to be demonstrated separately; the whole organ larger than natural. The uterus generally soft; the larger veins in its substance full of blood; there was an extensive half-detached portion where the placenta had adhered; the inner membrane was vascular, but nowhere destroyed. The os uteri was very irregular, and the membrane destroyed at one part. All the external parts of generation were of a dark livid colour, with numerous superficial ulcerations from the vesicles bursting. The whole course of the thoracic duct and lymphatics was filled with half-formed lymph. Blood generally fluid.

Mr. Malton.

REMARKS.

This case is chiefly to be noticed for the tendency to gangrenous vesications, which form of superficial attack is described by Bartels, as having been epidemic in the Vienna hospitals. The malady was clearly dependent on an alteration in the lymphatic and vascular systems.

COULSON'S CASES.

Case 1.—Sarah Reynolds, ætat. 24, was seized with fever and head-ache on the fourteenth day after her confinement, and died four days afterwards. During this short period the right and left arm were swollen, painful, and red; the lochia and milk were neither suppressed. The only lesion was a slight thickening of the right external iliac vein, which vessel contained a little coagulable lymph. The uterus and pelvic organs were healthy. Sero-purulent effusion was found under the integument of the affected limbs.

Case 2.—Sarah Milner was attacked with general pain, fever, and delirium, and the next day both upper extremities, from axilla to wrist, were swollen and painful. The knee and ankle-joints were also very tender, but the inferior extremities were not swollen. She died in twenty-four hours after the attack.

There was no organ affected, the only lesions being effusion, into the sub-peritoneal tissues, between the

pia-mater and arachnoid, and a little into the pericardium and the cellular membrane of the limbs. All the veins, after a most careful dissection, were found perfectly sound.

Case 3.—Jane House was seized on the fourteenth day after her labour with great pain of the knee-joint, and died on the sixth day of the attack, exhibiting the same group of symptoms as the last case. There was a troubled serosity effused into the cavity of an inflamed peritoneum; the uterus flabby: serous infiltration over the inflamed knee-joint. The veins were perfectly healthy.

Coulson remarks that no organ, or group of organs, is always affected. Sometimes it is the head, at others the abdomen. He denies Denman's assertion, that the uterus and its appendages will always be found disordered. He notices the inefficacy of remedies.

REMARKS.

The above has been re-translated by me from a German translation, contained in the Zeitschrift fur Geburtskunde, where unfortunately no clue is afforded where to consult the original itself. These

cases strongly illustrate the position I maintain, that the real cause of puerperal fever is to be sought for beyond the local maladies which result from it; and that inflammation of the venous tissue is sometimes merely a secondary effect, like the inflammation of the peritoneum; and sometimes an occasional cause, affording the material for contaminating the blood and impressing the nervous system.

APPENDIX.

TABLE NO. I.

	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	Total.	
January .	–	2/0	0/3	3/0	–	2/0	–	–	2/2	4/0	3/0	0/8	34/13	
February .	–	2/0	1/2	–	–	–	–	–	2/1	6/4	–	–	17/7	Hospital closed in February 1838.
March . .	1/0	–	3/1	2/2	–	–	2/0	–	–	6/2	–	8/6	22/11	
April . .	3/0	–	1/0	1/0	4/1	1/1	1/0	3/0	2/2	6/2	3/1	0/6	34/13	
May . .	4/1	4/0	–	–	1/1	–	2/2	–	5/2	2/0	2/1	–	20/7	Hospital again closed from April to November.
June . .	–	3/1	–	–	–	1/0	2/1	–	6/3	4/0	–	–	16/5	
July . .	–	3/0	–	–	–	2/0	–	–	–	–	–	–	5/0	
August .	–	3/1	1/0	–	–	–	–	–	–	–	–	–	4/1	
September	2/0	8/2	–	–	–	–	1/0	–	–	–	1/0	–	12/2	
October .	–	4/0	–	–	–	2/0	–	–	5/0	–	–	–	11/0	
November	–	–	–	1/0	2/0	–	–	4/4	2/0	–	–	–	9/4	
December .	–	8/3	3/0	–	2/0	–	1/0	2/1	2/0	3/1	–	–	21/5	
ATTACKED	10	37	24	7	9	8	9	9	26	31	9	26	205	TOTAL ATTACKED } in the 12 years from March
DIED . . .	1	7	6	2	2	1	3	5	10	9	2	20	68	TOTAL DEATHS. } 1827, to April 1838.

At the foot of each column we have a fractional expression, of which the numerator denotes the number attacked, and the denominator the number that died:—thus, 37 were attacked in 1828, and of these 7 died. By looking through the horizontal line, we have, under a similar form of expression, the number of those attacked and those who died in the same month of different years. Thus opposite to February we have 2 attacked in 1828, and no deaths —in 1829, 7 attacked and 2 deaths—none attacked in 1830, &c. In the last column, the sum of all those attacked and of all deaths occurring in each month of all the years is noted: thus, the twelve Aprils give a sum total of 34 attacked and 13 deaths.

The table. therefore, shews the illness and mortality—1st, Of each month; 2ndly, Of each year; 3rdly, Of the sum in the same months of all the years; 4thly, The sum total of those attacked and of deaths in the 12 years. Puerperal fever was *epidemic* in the years 1828, 1829, 1835, 1836, 1838; in the other years it was only sporadic. The greatest mortality was in the years 1835 and 1838, in the last of which 20 in 26 died. The malady commenced in January, in which month Dr. Rigby saved only one out of nine. The hospital was closed for a month, and opened again in March, when he succeeded in rescuing only two in eight. Thinking that another mode of treatment might be more successful, I determined to bleed largely and to salivate. This plan was fairly tried under the constant attendance of Dr. Cape, and with my supervision, but three only in nine lived; seeing that no treatment was of avail, the hospital was closed from May till November. I may add, that the present year, 1838, has exercised an exceedingly fatal influence in every species of fever, all of which were of the low, or typhoid type.

TABLE No. II.

EFFECT OF SEASONS.

Classification of Puerperal Peritonitis, according to the Months in the Years 1819, 1820, in which the Disease was Epidemic in Paris.

Dugés, p. 180, *Journ. Hebd. de Medicine.*

	Confined.	Peritonitis.		Confined.	Peritonitis.
Jan.	496	81	Aug.	349	40
Feb.	466	82	Sept.	356	53
March	534	65	Oct.	392	69
April	406	47	Nov.	386	74
May	428	67	Dec.	394	65
June	389	35			
July	363	40		4959	718

Delaroche at Geneva.

	Peritonitis.		Peritonitis.
Jan.	77	July	37
Feb.	43	Aug.	36
March	76	Sept.	51
April	55	Oct.	51
May	35	Nov.	66
June	30	Dec.	61

Gordon of Aberdeen's Table.

	Peritonitis.		Peritonitis.
Oct.	13	April	6
Nov.	8	May	6
Dec.	12	June	
Jan.		July	0
Feb.	8	Aug.	5
March	6	Sept.	5

Campbell.

		Peritonitis.		Peritonitis.		Peritonitis.
1821	March	1		Oct. 7	May	4
	April	7		Nov. 13	June	3
	May	2		Dec. 11	July	2
	June	2	1822	Jan. 7	Aug.	1
	July	3		Feb. 6	Sept.	3
	Aug.	1		March 5	Oct.	2
	Sept.	1		April 4		

The reader, by comparing these Tables with mine, may see that the most injurious months in Paris are Nov. Oct. Feb. In Geneva—Jan. March, Nov. In Aberdeen—Oct. Dec. Nov. In Edinburgh—Nov. Dec. Jan. In London—Jan. March, Feb. Dec. May. In general the cold months

No. V.

MR. GULLIVER'S RESEARCHES ON SUPPURATION.

The following is a brief abstract of a very valuable contribution to the pathology of the fluids, entitled "Researches on Suppuration, by George Gulliver, Esq., assistant Surgeon to the Royal Regiment of Horse Guards." The paper was read before the Royal Society, June 14th, 1838, but published only in September of the same year, in the 81st No. of the London and Edinburgh Philosophical Magazine. The general result is, that in diseases attended by inflammation and suppuration, pus is found in the blood, and that the proximate cause of sympathetic inflammatory, sympathetic typhoid, and hectic fever, is pus in the blood.

The mode of detecting pus in the blood is partly chemical, and partly by the microscope. "If the suspected blood be diluted with water, the blood corpuscles will soon become invisible. The globules of pus will subside to the bottom of the vessel, and may be easily seen, and their character determined

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are most fatal. No death has occurred in the month of July in the General Lying-in Hospital. The most favourable month in Paris and Geneva is June: and Aug. in Scotland, where the summer is about three weeks later than in England. Hence, we may say that the warm months are beneficial. Among other causes of the increased mortality in winter, I reckon the want of ventilation. Nothing will induce the patients in winter to allow a window or door to be opened: hence the whole ward is hot and close; while in the month of July every door and window admits fresh air night and day.

by the microscope. Ammonia instantly renders the blood corpuscle invisible, while that of pus is acted on slowly by the alkali. The different action of acetic acid on pus and blood is equally remarkable. I have seen though rarely, pus globules in the blood, without any preparation." Mr. Gulliver details seven experiments made on living animals. In the first, corrosive sublimate was injected into the cellular membrane of the thigh of a dog. A great deal of serum mixed with fibrine was found in the cellular tissue of the thigh, but there was no purulent deposit. Pus globules were found in the blood of the right ventricle. In the second, the thigh of a dog was injured by operations connected with necrosis—there was great local inflammation—pus in the vena cava. In the third, an injection into the peritoneum gave rise to a large effusion of coagulated lymph and sanguinolent serum, and some pus into the peritoneal cavity, and there was found pus in the blood of the vena cava. In the fourth, pus injected into the pleura—the blood of the heart and vena cava contained pus. In the fifth, pus injected into the peritoneum; globules of pus detected in the blood. In the sixth, a small quantity of dilute pus injected caused fever, but the dog recovered. In the seventh, 6 drachms of pus injected into the crural veins; pus found in the blood.

Mr. Gulliver has detected pus in the blood in three cases of confluent small-pox; in one case of puerperal peritonitis; in one of swelled leg from

ulcer; in another from superficial wound of the tibia; in one case of erysipelas; in one of suppuration of the integuments of the thigh; in two cases of tubercular phthisis.

Dr. Davy has repeated Mr. Gulliver's experiments, and has found pus in the blood in seventeen instances of phthisis, in sixteen of which there was declared suppuration, in one none could be detected. In the latter the patient died of acute inflammatory disease.

Mr. Gulliver maintains the opinion of John Hunter, Home, and Young, that the globules of pus are nothing but those of the blood modified by inflammation. He thinks that the opinion of the conversion of clots of fibrine into pus, is not true, but that the matter is merely softened fibrine, which has neither the chemical nor the microscopic character of pus. He believes that pus found in the veins is in certain cases merely absorbed from neighbouring parts. The conclusions drawn by the author are, that the presence of pus in the blood and fever, are allied as cause and effect; that blisters, setons, &c. establish drains to clear the blood of its noxious matter, "it being probable, that suppuration is a sort of proximate analysis of the blood, the useless blood corpuscles being discharged in the shape of pus, as waste from the system:" that the popular prejudice of the striking in of small-pox being dangerous, is grounded in fact; those cases of this malady exhibiting pus in the blood, where there had been much swelling but no ma-

turation. Under the term typhoid, Mr. Gulliver includes that grave form of fever which follows operations on the veins and amputations, and attributes the sudden sinking to an extensive mixture of pus in the blood. "The patient seldom complains of much pain, he has dilated nostrils, flushed face, encrusted tongue, restlessness, small quick pulse, cold clammy sweats, offensive breath, hiccough, subsultus, stupor."

Mr. Gulliver's experiments prove that in various affections, pus is found in the blood. I have endeavoured to shew that a vitiated state of the blood is capable of accounting, not only for various kinds of general disease, but also for a variety of local inflammations. Thus Mr. Gulliver's experiments, and my observations may be said to afford mutual corroboration. Especially if it be considered that both of us had arrived at similar conclusions independently of each other. At this early period of the investigation it would be unfair to Mr. Gulliver to infer that pus in the blood is the sole cause of fevers, although his experiments would tend to this conclusion. What I have stated in the text, I still think the most probable opinion; namely, that there are other lesions of the fluids besides those caused by purulent infection, which yet remain to be investigated. I would direct the reader's attention to Majendie's Lectures on the Blood, published in the Lancet. The original has only reached me within the last week.

No. VI.

TREATMENT OF PUERPERAL FEVER, BY J. COPLAND, M.D., F.R.S., CONSULTING PHYSICIAN TO QUEEN CHARLOTTE'S LYING-IN HOSPITAL, LECTURER ON THE PRACTICE OF MEDICINE AT THE MIDDLESEX HOSPITAL, ETC.

My Dear Sir,

In answer to your note I may briefly state, that at the commencement of 1823, when I became one of the Consulting Physicians to Queen Charlotte's Lying-in Hospital, puerperal fever, of a malignant type, soon afterwards appeared in the wards, and almost every female in the hospital was attacked by it. The disease was most malignant, and often ran its fatal course within twenty-four hours from the first appearance of the symptoms. It was characterised by remarkable rapidity, softness, and weakness of the pulse,—by great pain, distension and tenderness diffused through the abdomen,—by a clammy offensive perspiration of the whole surface,—by complete indifference to the child, to the result of the disease, and to every thing else,—by a moist, flabby, broad, and mucous state of the tongue, and by relaxed

bowels, the milk being secreted, and the lochia abundant and sometimes offensive. On dissection, copious serous, or sero-albuminous, or an almost sanious effusion was found in the peritoneal cavity—sometimes also in the pleural and pericardiac cavities. The tissues were generally softened or easily lacerated; but the uterus presented, in this form of the disease, no other lesion than more or less softening, as observed in the other abdominal organs, and even in the heart itself.

Having, previously to these cases coming under my care, frequently employed the spirits of turpentine in fevers and other diseases, I prescribed this medicine at once for this form of puerperal fever, both by the mouth, and in enemata, trusting to it principally; but without obtaining from it the good effects, which the trials made of it by Dr. Brennan of Dublin had led me to expect. I next was induced, by my experience of large doses of calomel and opium in some acute diseases of warm climates, to try the effects of these; but they also failed. I afterwards combined both modes of treatment, and prescribed, every four or five hours, large doses of calomel and opium; and the spirits of turpentine with castor oil, once or twice in the twenty-four hours, and sometimes also in enemata. From this practice more seemed to have been gained, than from either of these plans adopted singly. Yet, as the success was but small, and reflecting upon the phenomena of the disease, I resolved upon trying the

effects of camphor in large doses, in conjunction with the calomel and opium, and aided by the turpentine in the manner about to be stated. I accordingly adopted this treatment, and with success. But, as every patient admitted was seized with the disease, the Committee decided upon receiving no more in-patients, and upon shutting up the hospital until it should be painted, white-washed, &c. and thus I had few further opportunities of trying this mode of treatment on that occasion. Soon after the re-opening of the house, the disease re-appeared in the same form, and from the same causes, which were explained to the Committee.

The earliest cases were not seen by me; but those which subsequently occurred came under my care, and for those the following means were uniformly adopted, the doses only of the remedies, and the intervals between their exhibition, being varied according to the severity and the stage of the disease, and the effects produced by them:—Immediately upon the appearance of the symptoms of the malady, a bolus, containing from eight to sixteen grains of camphor, from ten to twenty grains of calomel, and from one to three of opium, was given and repeated in four, five, or six hours. The dose of camphor was very rarely less, and but seldom above that named; and the interval between the two doses sometimes only three hours, but never longer than six. The dose of opium in the second and subsequent boluses

was regulated according to the effects of the first. Soon after the second bolus, about half an ounce of spirits of turpentine, and an equal quantity of castor oil were given on the surface of some aromatic water: and if these did not operate fully on the bowels within three hours, the same medicines in double or triple quantities were administered in enemata. The bolus just mentioned was still continued at the same intervals; or after five or six hours from the exhibition of the second or preceding one. Very soon afterwards, and generally subsequently to the administration of the turpentine draught and enema, a large piece of flannel folded several times, and sufficient thus to cover the whole abdomen, was directed to be wrung as dry as possible out of very hot water, to be instantly freely sprinkled with spirits of turpentine, and applied over the abdomen, to be closely covered by wash-leather or a dry cloth, and to be kept thus applied for some time, or renewed, until erubescence of the surface of the abdomen was produced.

In two or three hours after the treatment had advanced thus far, the symptoms had generally much abated, if it had been instituted early in the disease. In this case, the doses of the camphor, calomel, and opium were diminished, and they were often also given at the longest intervals above mentioned. In some instances, warm spices or aromatics were ordered in the bolus with the above medicines. The turpentine draught was seldom prescribed oftener

than once in the twenty-four hours, but the dose was often as much as six drachms. The turpentine enema, and the fomentation, were frequently resorted to twice in the same space of time. As the disease subsided the doses were diminished, and the intervals between their exhibition prolonged. If the malady was obstinate, the bolus was persisted in as at first, the turpentine embrocation was more frequently applied, and the turpentine draught and enema administered according to their effects and the state of vital power. If vital depression was extreme, the turpentine was given in small doses or withdrawn; capsicum was added to the bolus, and the decoction of bark, with the chlorate of potash, carbonate of soda, and the compound tincture of bark, given in frequent doses. If the lochia were very offensive, injections with the solution of chlorinated soda were employed; and the same solution was sprinkled about the floors of the wards.

The success of the above treatment, in the malignant form of the disease, I found to be almost complete; for scarcely a case terminated fatally, in which it was early resorted to. During two months, I treated about thirty cases in the hospital, and only two died, one of the two having refused to take medicine; but I visited the patients thrice daily, and took notes of each case at all the visits.

From 1826 and 27, the cases which occurred were less malignant, and commenced very differently,—

with less violence and malignity,—more insidiously and often in the uterus, and thence extending to the peritoneum. The first case of this kind which I saw, occurred in 1825, and did not come under treatment until the disease was far advanced; it terminated fatally; and upon dissection, which was performed by Mr. Mullins and myself, the uterine veins were found inflamed, and purulent collections existed in the sinuses of the uterus, and in the ovaria.

Soon after this time, the wards of the hospital were enlarged and better ventilated; and fewer beds were placed in them. Since then puerperal fevers have more rarely occurred, and have seldom assumed so malignant a form as before. In those cases, however, which have come under my care, the treatment now described has been very successful, especially if early resorted to.

There are various other particulars—pathological as well as therapeutical—which have occurred to my observations of puerperal fevers in public and private practice, but the scope of this communication prevents any allusion to them; but you will soon have the results of my experience, and my opinions, in the article on puerperal diseases, in a forthcoming part of my Dictionary; and much of both has long since appeared in the medical journals. If, however, there be any point to which you would wish me more fully to advert, I shall do so with pleasure. I may, however, add, that puerperal fever presents several very

distinct forms—distinct in the symptoms, in the structures primarily implicated, and in the lesions found after death. These forms I have simply enumerated in the 44th paragraph of the article "Fever."

I remain, my dear Sir,

Yours truly,

JAMES COPLAND.

1, Bulstrode Street,
25th Oct. 1838.

I insert the classification of Dr. Copland here, instead of in the text, not having been aware that the subject of puerperal fever had been touched on by him. It will be seen that, like those of Professors Busch and Ritgen, this classification exhibits most extensive local injuries, complicated with various kinds of fever.

DR. COPLAND'S CLASSIFICATION OF PUERPERAL FEVERS.

Inflammatory:—

α. Inflammation of the uterus.
β. of the ovaria and tubes.
γ. of the peritoneum.
δ. of any two or all of them.

Synochoid, Puerperal Fever:—

α. Complicated with inflam. of the peritoneum.
β. with inflam. of the uterine veins.
γ. with inflam. of the uterus and appendages.

Adynamic (*Malignant*) Puerperal Fever:—

a. Simple.

β. Complicated with predominant affection—

a. Of the blood.

b. Of the fluids and peritoneum.

c. Of the fluids and serous surfaces, and soft solids generally.

d. Of the uterus, or of the uterus and appendages.

e. Of the internal surface of the uterine vessels, substance of the uterus, &c.

No. VII.

ON THE USE OF OPIUM IN CERTAIN INFLAMMATORY DISEASES. BY THOMAS WATSON, M.D., PHYSICIAN TO THE MIDDLESEX HOSPITAL, PROFESSOR OF MEDICINE IN KING'S COLLEGE, LONDON.

Henrietta-street, Cavendish-square,
15th November, 1838.

My dear Ferguson,

You ask me my experience and opinion of opium, in the treatment of inflammations. Of its great value as a remedy in certain cases, and after sufficient blood-letting, I have long been satisfied. I presume its beneficial operation is to be explained by its known power of tranquillising disturbed and uneasy nerves. Mere nervous irritation appears sometimes to keep alive, or to rekindle, inflammation, which depletion of the blood-vessels had almost, or for a time, extinguished: and opium, given in a full dose, will often prevent this renewal of disturbance in the vascular system, by quieting the nervous irritability. I am, indeed, persuaded that opium is, of itself, equal to the cure of some forms of inflammatory disease, in which bleeding would be improper; the disorder of the capillary vessels subsiding spontaneously, as soon as the teased and teasing condition

of the nervous system is allayed. Accordingly the opiate treatment has been found the most effectual in persons who possess by nature, or who have acquired through disease or intemperance, undue irritability of frame. It is especially useful also whenever local inflammation is attended with much bodily pain, which in all persons is a source of irritation.

You are, doubtless, aware that this practice was much employed, and recommended, by the late Dr. Armstrong, who adopted it from Dr. Robert Hamilton. Its propriety has been acknowledged by most practical men since his time.

But, independently of its controlling power over one (probably) of the component elements of inflammatory disorder, I apprehend that opium is highly beneficial in *peritoneal* inflammation in another and more mechanical way; namely, by arresting the peristaltic movements of the bowels, and so preventing tension and friction of the parts actually inflamed, which should be kept as absolutely at rest, if possible, as an inflamed joint.

Some years ago, in an accidental conversation with a practitioner* in the country upon this topic, I was asked if I had read a pamphlet by Bates, of Sudbury, whose practice this gentleman had been led to adopt, and, as he assured me, with a degree of success that surprised him. I had not then seen or heard of this little work, but he lent it to me, and I

* Mr. Randell, of Orford in Suffolk.

was so much struck with the practical statements it contained, without any discussion of the quomodo, that I extracted the pith of the pamphlet, in the brief notes which I here subjoin for your perusal :—

Bates, of Sudbury.—"A Practical Treatise on Acute Abdominal and Pelvic Inflammation."

He considers this as *one disease*, with, in some cases, *slight variety of symptoms*, from the *locality* of the affection; but preserving the same leading features of its character wherever situated, viz., acute pain and exquisite tenderness in the part affected.

He has two plans of treatment, which he thinks infallible, and of the efficacy of which he gives many (apparently faithful) examples.

1st Plan.

The horizontal posture, never swerved from at all, is a sine quâ non.

A soft bed to encourage perspiration.

Bleeding at the arm to about a pint, except there is already great exhaustion.

Opiate enemata (*tinct. opii.* ʒj to ʒij; *c. decocti amyli calefacti* ℥xij.) to be repeated in twelve hours, if no return of pain, and whenever there is a renewal of the primary symptoms. He says the general effect of this, in quelling the pain, sickness, and diarrhœa, is almost instantaneous.

The diet—cold water, or toast water; well strained

barley water, or plain thin gruel;—both the last, cold and in small quantities.

Laxative lavements as follows, to relieve the bowels when confined, but not before the pain and sickness have been removed, and the tenderness of the abdomen is somewhat abated:—

℞. Vini aloës, ʒiij.
Magnesiæ sulphatis, ℥i to ℥ij.
Olei Olivæ, ℥i.
Aquæ Calidæ, ℥xij.
M.

Bottles of warm water to the feet; fomentation and linimentum saponis c. opio to the belly; and leeches when great tenderness is present.

2nd Plan.

℞. Pulveris opii,
Pulveris acaciæ,
Pulveris antimonialis, aa. gr.i
Confectionis rosæ caninæ, q. s.
M.—fiat bolus.

This to be taken as soon as possible—to be repeated in an hour,—and then to be continued every two hours, until the pain has ceased.

Ease ensues, he says, from the administration of the fifth to that of the tenth bolus.

If not, he resorts to the enemata.

He allows no calomel.

I have since read with much pleasure and interest, in the first volume of the *Dublin Journal of Medical and Chemical Science*, a paper by Dr. Stokes, on the use of opium, in large doses, in certain diseases.

The cases to which he thinks this particularly adapted are cases of peritonitis, occurring under circumstances in which bleeding cannot be employed. He specifies peritonitis, caused by the escape of the contents of some of the hollow abdominal organs into the serous cavity, from perforation or rupture of their walls—peritonitis occurring after the operation of paracentesis in debilitated subjects—and *low typhoid peritonitis arising after delivery.*

The whole paper is full of interest and instruction; —but one of the cases is especially striking: that of a boy, in whom the well known symptoms of perforation of the intestines had existed for two days, and the patient was apparently sinking—"his countenance was collapsed, anxious, and expressive of dreadful suffering; the extremities were cold, and the pulse hardly perceptible; the respiration hurried, and the abdomen swelled and exquisitely painful."

The exhibition of sixty drops in twenty-four hours of the black drop, produced an extraordinary change for the better. "Next day the most marked improvement had taken place, the pulse had become full and soft and the extremities warm; the countenance had altogether lost the hippocratic expression, and the patient could bear pressure on the abdomen. On

the day before he was nearly insensible to surrounding objects, but now expressed great relief, and confidence in recovery. The same treatment was persevered in for the next twenty-four hours, when *all* symptoms of abdominal inflammation had completely subsided. The belly felt natural; there was no tenderness; the pulse was good, and the patient declared himself well. At this period of the case I omitted the opium, and exhibited the mildest possible saline laxative, as no stool had taken place for more than forty-eight hours; four evacuations took place, followed by an immediate return of all his former symptoms, under which he speedily sank."

"The intestines were every where agglutinated together and adherent to the parietal peritoneum, except in the left iliac fossa, where a quantity of yellow puriform matter was collected. On detaching the caput coli from the peritoneum lining the right iliac fossa, a small perforation of the gut was discovered by the escape of the contents of the intestine in a jet," &c. &c.

This case puts in a very strong light the *good* effects of *opium*—the *dangerous* effects of *purgatives*—and the *mode* in which recovery in these frightful and all but hopeless accidents *may* be sometimes brought about.

Dr. Stokes truly states, that the peristaltic action of the intestines will constantly tend, in these cases, to prevent the closure of the aperture of communi-

cation. It can scarcely fail either, I think, to keep up or aggravate the inflammation where there is no such aperture. I have, therefore, always been in the habit of recommending to my pupils the same principle of treatment, as an auxiliary, when the peritonitis does *not* grow out of previous organic disease; in all cases, in short, of mere peritonitis. The opium is not to supersede bleeding, or mercury—it is not incompatible with either of these remedies—and it may, I believe, be most advantageously adopted in conjunction with them both.

Entertaining these opinions, I have long thought the usual practice of giving repeated doses of aperient medicine after the operation for strangulated hernia, to be one of very doubtful propriety.

I have just discharged from the Middlesex hospital, a lad in whose person the usefulness of opium was very conspicuous.

Henry Middlehurst, aged 17, a tailor, was admitted on the 17th September—looking very ill, and complaining of pain in the epigastrium, with extreme tenderness over the whole abdomen, which is full and tense. He was taken ill on the 6th, with shivering, and vomited frequently and much up to the period of his admission. Except a scanty stool on the 15th, his bowels have not been moved for a week. Tongue dry and white.

Twelve leeches were placed upon his abdomen, and calomel in gr.v doses was given two or three times at

intervals of four hours; and an enema of warm water was injected, and retained. In the evening sixteen more leeches were applied, and a drachm of mercurial ointment was rubbed into his arm.

I first saw him on the 18th. His countenance was pinched and anxious, and he lay moaning with pain, his knees drawn up towards his belly, which was tight, and tense, and exquisitely sensible to pressure. He complained of nausea and retching, but had not vomited since admission. Tongue thickly coated. Pulse small, sharp, 108. No permanent relief from the leeches.

I directed immediate venesection, but not more than ℥iv of blood could be got from the arm. Thirty more leeches were therefore put upon the abdomen, and afterwards a warm poultice to receive the blood from their bites. Three grs. of calomel, and three of blue pill were ordered every four hours.

The last leeches mitigated the pain, but it returned in the evening with increased severity, and he vomited the pills. He appeared to be in great agony. In this state the apothecary gave him grs.xii of calomel, and five grains of opium in one dose. Soon after this he fell asleep, and slept during the greater part of the night. Next morning his countenance had lost, in a great degree, its expression of anxiety—his belly was less tender, but still tense; and his tongue cleaner. No stool.

Capiat pilulæ saponis c. opio, gr.v; 8vâ quâque horâ.

On the 20th the bowels were freely open—the dejections dark and watery—the abdomen less tender. Pulse, 114. He continued to take a grain of opium thrice daily till the 3rd of October—the bowels being moved daily, the pulse and tongue gradually improving—the belly painless even under firm pressure. On the 3rd, as the bowels had not acted for the last two days, I discontinued the opium. On the 5th, diarrhœa set in, with some renewed tenderness of the abdomen, and the pinched and anxious countenance returned. He had an opiate enema, and resumed the opiate pills as before. Under this treatment he at length got quite well—and left the hospital on the 30th.

Yours affectionately,

T. W.

TABLE, No. III.

DATE.	NUMBER.	NAME.	AGE.	LABOUR.	TIME OF ATTACK.	DURATION	ABDOMEN.	HEAD.	INTESTINAL CANAL.	CHEST.	LOCHIA.	MILK.	PULSE.	TONGUE.	DEPOSIT.	RESULT.	TREATMENT. REMARKS.
1827																	
March 30	1	Sullivan	26	8	1	7	pain 3 days	insomnia	diarrhœa bloody: vomiting	- -	scanty	scanty	108	clean	-	R	Mercurial alteratives with occasional opiates.
April	2	A. Hoskins	35	1	2	11	pain 5 days: tympanites	- - -	vomiting	much dyspnœa	copious	-	140	loaded	ankle	R	10 leeches: opium: mercurial alteratives.
	3	S. Carpenter	22	2	16	21	no pain	delirium on 5th day	vomiting: diarrhœa	- -	irregular	-	140	loaded	-	R	Mercury and alteratives: opium: chalk mixture: quinine.
	4	Mary Hunt	25	4	7	7	pain 2 days	ache	- - -	- -	-	-	100 strong	white	-	R	Dover's powder: aperient: poultice: 8 leeches.
May	5	H. Leary	31	2	2	15	pain for 1 day	pain and slight delirium	vomiting	- -	none	-	100	fiery red	-	R	Typhoid look: 14 leeches, causing much feebleness: opiates and stimulants.
	6	M. Mathews	26	6	3	10	pain 4 days	- - -	diarrhœa	- -	none	-	130 weak	loaded	-	R	Dover's powder: aperients: alteratives: much feebleness.
	7	E. Fouracres	25	3	1	-	great pain 2 days	- - -	- - -	- -	natural	natural	-	natural	-	R	16 leeches: faint: Dover's powder and poultice.
	8	F. Foley	34	3	3	4	acute pain 1 day	- - -	purged	cough: dyspnœa	ceased	-	130 weak	white	-	D	Stimulants: calomel.
Sept.	9	E. Tucker	25	6	2	11	acute pain 1 day: soreness 1: pain often returning	painful	sickness: diarrhœa	- -	-	-	full	loaded	-	R	V.S. ℥xxiv: 50 leeches: mercury to salivation, then stimulants: very long convalescence.
	10	E. Pitmore	23	1	16	7	acute pain recurring	- - -	- - -	- -	-	-	-	-	-	R	Dover's powder and aperients and poultices.
Dec.	11	B. Benson	25	5	4	1	acute pain 10 hours	- - -	- - -	- -	-	-	-	-	-	R	Dover's powder, which acted as an emetic, and cured in an hour.
1828	12	E. Durie	29	3	3	2	pain: tympanites 2 days	ache	- - -	- -	natural	scanty	105	clean	-	R	Calomel and opium, gr.ii, about four doses.
Jan. 28	13	E. Sabine	36	4	4	2	violent pain 1½ day	- - -	- - -	- -	-	-	-	moist	-	R	Gran doses of opium failed: two grains given—cured.
Feb. 3	14	E. Lakin	23	3	7	-	pain a few hours	- - -	- - -	- -	natural	natural	natural	moist	-	R	Dover's powder, &c.
	15	M. Morril	22	1	3	6	pain 2 days	- - -	great diarrhœa involuntary	pain and hæmoptysis	scanty	none	quick, feeble	loaded, dry	-	R	Opium and calomel, 4tis horis: hæmorrh.: expectorants & blister to chest.
May	16	Montague	-	5	2	3	acute pain: constant, with uterine cholic 2 days	- - -	- - -	- -	-	-	120 full	dry, white	-	R	4 dozen leeches: Dover's powder.
	17	Mary Wright	24	2	14	15	uterine pain 2 weeks	- - -	- - -	- -	-	-	130	loaded	-	R	Freely leeched, purged, and salivated.
	18	M. Griffin	22	1	12	10	pain 4 days: tympanites	- - -	relaxed: vomiting	- -	-	-	120	red	-	R	V.S. ℥vii: 15 leeches: calomel and Dov. pow. gr.iij, tertiis horis: tonics.
	19	C. Garland	30	7	17	-	pain violent	- - -	dark frequent	- -	-	-	quick	-	-	R	Mercurial alteratives: tartar emetic.
June	20	H. Arter	32	3	2	15	great tenderness 1½ day: recurring on 9th day	visions: delirium	dark offensive: frequent vomiting	- -	-	-	130	loaded	-	D	V.S. ℥vii: 15 leeches: alteratives, stimulants, and opiates.
	21	J. Kemp	26	3	1	11	uterine cholic: pain 5 days	insomnia	diarrhœa	- -	scanty	natural	-	red	-	R	10 leeches: mercurial alteratives: Dover's powder: poultice: tonics.
	22	M. Shearman	20	1	2	10	pain 3 days	- - -	diarrhœa: tenesmus	- -	-	-	-	red	-	R	12 leeches: Dover's powder: mercurial alteratives.
July	23	M. Foy	20	1	2	19	tenderness and pain 10 days	pain	vomiting for 2 days	cough	none	-	full	-	-	R	Largely bled and leeched.
	24	E. Bunce	23	1	2	10	acute pain 1½ day	- - -	diarrhœa	- -	none	none	130 weak	loaded	-	R	Dover's pow.: mercurial purges: antimonials and alteratives: chalk mixture.
August	25	E. Seagry	18	2	14	5	acute pain after dyspnœa 36 hours	- - -	dysentery	- -	scanty	-	sharp, quick	loaded	-	R	Dover's powder, calomel: two doses cured.
	26	M. Arnill	28	2	3	16	uter. chol. 24 hs. pain recurr'd & lasted	head-ache	diarrhœa	cough and pain	none	scanty	120 weak	loaded	-	R	Purged and then Dover's powder: 12 leeches: alteratives, &c.
	27	S. Fleming	26	1	2	4	very slight pain for 12 hours	clear	diarrhœa: tympanites	hurried	offensive	natural	130 weak	moist	-	D	Stimuli: turpentine, &c.
Sept.	28	M. Jordan	30	2	7	2	acute pain 1 day	stupid	distended, hard	- -	-	-	130 weak	loaded	-	D	Stimuli: Dover's powder.
	29	S. Ashfield	28	6	6	2	severe pain, gen. 2 days, but interm.	- - -	- - -	- -	scanty	natural	quick, weak	loaded	-	R	Dover's powder: poultice.
	30	S. Spiers	20	1	3	9	acute pain 7 days, and phlegmasia dolens	ache: excited	nausea	short, hurried	-	-	116 strong	loaded	phlegmasia dolens	D	6 dozen leeches: calomel gr.ij, opium, gr.i, quartis horis.
	31	H. Hurley	22	1	10	3	sore 1 day	ache	- - -	- -	natural	natural	120 hard	loaded	-	R	Calomel gr.i, quartis horis: Dover's powder: tartar emetic.
	32	S. Gibson	21	3	2	1	pain 1 day	- - -	- - -	- -	-	-	quick	-	-	R	Dover's powder.
	33	E. Thomas	25	3	2	4	pain 3 days	- - -	- - -	- -	[fensive	-	96 weak	-	-	R	Poultice: Dover's powder: calomel purges.
	34	Chandler	33	3	2	5	pain and soreness 4 days	- - -	- - -	- -	scanty of-	natural	120 weak	loaded	-	R	Calomel gr.i: Dover's powder quartis horis.
	35	Murray	26	1	2	9	pain 4 days	ache	sick	cough	offensive	-	120 weak	loaded	-	R	Dover's powder and calomel gr.i: quartis horis: 12 leeches.
October	36	Dargle	28	5	2	4	pain all over 3 days: tympanites	- - -	- - -	short, imperfect	-	-	120 weak	clean	-	R	Leeches 16: Dover's powder: poultice.
	37	Hicks	27	4	2	2	pain on one side 2 days	slight delirium	- - -	- -	[fensive	-	120 weak	-	-	R	Purged: poultice.
	38	Christian	36	3	2	5	pain 4 days	ache: intolerance of light	black yeasty: vomiting	- -	scanty of-	-	112 strong	red	leg	R	30 leeches: purged: poultice: calomel gr.i, quartis horis.
	39	Pickhard	34	2	4	9	pain with uterine cholic for 4 days, then recurred	- - -	diarrhœa	- -	-	-	120 weak	-	-	R	12 leeches: Dover's powder: poultice.
Dec.	40	Wood	33	1	4	7	pain nearly all the time	dizzy; clear before death	stomach irritable	- -	natural	-	120 weak	loaded	-	D	40 leeches: Dover's powder: turpentine.
	41	Newton	-	1	3	14	very sore 1 day	delirium	diarrhœa	very painful	natural	natural	140 weak	clean	-	R	12 leeches: V.S. ℥ij, faint: alteratives, stimuli, &c.
	42	E. Brady	21	3	2	9	excruciating pain 4 days	ache	- - -	- -	none	none	115 weak	white	-	R	12 leeches: poultice: calomel, gr.i, every hour.
	43	Skeiogh	-	12	2	5	pain 2 days	- - -	- - -	- -	natural	natural	90 weak	-	-	R	Calomel: opium.
	44	Allen	36	12	2	3	pain all over 3 days, very great	- - -	- - -	- -	none	none	120 weak	furred	-	R	Calomel: Dover's powder.
	45	Sutton	-	2	2	1	pain very great	- - -	- - -	- -	natural	natural	120	dry	-	R	12 leeches: calomel: Dover's powder: poultice.
	46	Baird	23	1	1	2	pain, slight 1 day	delirium	- - -	- -	-	-	130 weak	brown	-	D	V.S. ℥viii: 6 leeches: pulseless in three hours after bleeding: stimulants.
	47	Moore	-	3	2	2½	acute pain, general 2 days	delirium	tympanites: vomiting	restrained	-	-	130 weak	whitish	-	D	20 leeches: calomel gr.i, every half hour: stimulants.
1829	48	Brien	-	1	3	4	pain in iliac region 3 days	- - -	vomiting: diarrhœa	violent stitch	none	copious	140 weak	white	-	D	24 leeches: calomel gr.ij, quartis horis: stimulants.
January	49	H. Stevens	-	3	2	7	no pain	- - -	diarrhœa	- -	natural	natural	140 weak	furred	leg	R	Pain of the leg, the only local pain: opium, calomel, &c.

TABLE, No. III.—*Continued.*

DATE.	NUMBER.	NAME.	AGE.	LABOUR.	TIME OF ATTACK.	DURATION	ABDOMEN.	HEAD.	INTESTINAL CANAL.	CHEST.	LOCHIA.	MILK.	PULSE.	TONGUE.	DEPOSIT.	RESULT.	TREATMENT. REMARKS.
1829																	
January	50	Pearce	-	-	-	3	pain 2 days	- - -	- - -	- -	none	-	90 weak	-	-	R	V.S. ℥xij: 12 leeches: poultice: calomel: Dover's powder.
	51	Godwin	42	7	3	5	slight pain 1 day	distressing pain -	vomiting: diarrhœa	- -	natural	natural	100	red	leg, scalp	R	16 leeches: Dover's powder and calomel: pricking of leg and scalp.
	52	E. Cook	28	1	5	19	pain and soreness nearly all the time	- - -	vomiting: diarrhœa	cough: difficulty in	-	-	120	red	-	D	V.S. ℥x: largely leeched: calomel: opium: stimuli.
	53	Vernon	29	10	3	12	pain for 24 hours	blindness: delirium: visions	diarrhœa: tympanites	- -[breathing	scanty	-	132	red, clean, then furred	-	R	Dover's powder: alteratives: 6 leeches: the pulse continued rapid long in the convalescence.
	54	Winterbottom	30	1	2	20	pain 2 days: soreness	- - -	distended: diarrhœa	cough: soreness: sigh-	none	-	136	various	-	R	Stimulants: opium: tonics: Dover's powder, poultice, &c.
	55	Crow	29	1	6	12	no pain	furious delirium	great diarrhœa: tympanites	- - [ing	none	-	120	furred	-	D	V.S. ℥xvi: opium: turpentine.
	56	J. Hales	25	3	2	2	pain	- - -	- - -	- -	none	-	90	-	-	R	Dover's powder: poultice: exhibits the transit of after-pains to acute pain.
Feb.	57	Ayres	23	1	3	4	violent pain 4 hours	violent delirium	vomiting: diarrhœa	laborious	-	-	130 weak	clean	-	D	Calomel: Dover's powder: stimuli.
	58	Rogers	-	2	11	8	violent pain 2 days: relapsed	- - -	diarrhœa	- -	-	-	120	red	-	R	Leeched on relapse: opium, &c.
	59	Cowe	30	2	3	5	pain often recurring	- - -	- - -	- -	none	copious	100 weak	clean	-	R	Dover's powder and poultice.
	60	Clymer	29	4	2	7	great pain nearly all the time	ache	diarrhœa	short: sighing	copious	copious	140	-	-	D	Leeched: calomel every two hours: astringents: stimuli.
	61	Grisby	18	1	1	3	pain 2 days	- - -	- - -	- -	natural	natural	100 full	-	-	R	V.S. ad deliquium: calomel gr.iv, every two hours.
	62	Jones	36	9	7	3	pain 1½ day	dimness: head-ache	- - -	- -	none	zone	120	clean	-	R	Dover's powder, poultice, &c.
	63	Cork	26	6	2	2	pain 1½ day	faint	- - -	- -	none	-	112	clean	-	R	Dover's powder: poultice: calomel purge.
March	64	Williamson	22	3	3	7	pain and soreness constant	- - -	- - -	- -	natural	copious	120 weak	black	-	R	Leeches 36: V.S. ℥viii, faint: calomel every six hours: gums tender.
	65	Rowley	27	1	2	8	pain 2 days	slight delirium	vomiting: diarrhœa	difficult	none	-	120	white	-	R	Leeched: calomel and opium every three hours: gums tender.
	66	Stanbery	28	-	2	10	pain 2 days	delirium	diarrhœa involuntary	- -	none	none	130 weak	furred	-	D	Leeched: calomel and opium: Dover's powder: astringents: stimuli.
April	67	Brinton	21	1	3	2	pain 1 day violent	- - -	- - -	- -	-	-	124 weak	soft	-	R	Dover's powder and poultice.
August	68	C. Smith	23	1	3	2	acute pain 1 day	- - -	- - -	- -	natural	natural	96	-	-	R	16 Leeches: Dover's powder: poultice.
Dec.	69	Eliz. Thompson	32	4	3	2	acute pain 1 day	- - -	- - -	- -	-	-	98 full	-	-	R	V.S. ℥xvi: calomel gr.x: purged.
	70	E. Nunn	24	2	3	2	pain 1½ day	- - -	- - -	difficult	-	-	110 soft	-	-	R	Emetic: 14 leeches: Dover's powder.
1830	72	A. Gamble	32	8	2	7	pain very acute 2 days	- - -	- - -	- -	-	-	-	-	-	R	Dover's powder: poultice.
January																	
	73	Dubois	22	3	3	8	pain great 5 days	aching: giddy	- - -	- -	none	none	120	loaded	-	R	V.S. ℥x, fainted: ℥xviij: 12 leeches: Dover's powder and poultice: quinine on 4th day, very feeble.
	74	E. Atham	22	1	2	10	great pain 2 days	painful	nausea: diarrhœa	- -	-	-	100 to 130	-	-	R	V.S. ℥xii, faint: 16 leeches, no relief: Dover's powder, &c.
March	75	Josephs	34	1	6hrs.	4	pain all the time	- - -	tympanites	deep: sighing: quick	-	-	very feeble	-	-	D	Stimuli: (protracted labour and forceps).
	76	Biggs	39	8	1	9	pain very severe: short time	delirium	diarrhœa: sick	short	-	-	hard: full	red	leg, hand	D	Largely bled and leeched (50℥): calomel: opium: stimulants.
April	77	Parish	31	5	2	3	pain 2 days	- - -	slight diarrhœa	cough	-	-	-	-	-	R	20 leeches: Dover's powder, poultice, &c.: calomel every five hours.
Nov.	78	Taylor	42	11	2	1	pain 1 day	- - -	- - -	- -	-	-	-	-	-	R	Dover's powder, poultice, &c.
1831	79	Paul	23	1	3	18	pain 8 days	slight pain	diarrhœa: vomiting	cough	dimin.	-	quick	-	-	R	12 leeches: calomel gr.i, every four hours; stimuli, &c.
April	80	Blythe	22	-	3	50	pain exquisite 4 days	insomnia	sick: purged: dysenteric	- -	-	-	140 small	loaded	leg	R	V.S. ad deliquium: calomel and opium every 2 hours: leeched: stimuli, &c.
	81	Leigh	23	1	2	9	pain 4 days	ache; insomnia	sick: tympanites: diarrhœa	- -	none	-	130	red, moist	-	D	Leeches 12: calomel every three hours: stimuli.
	82	Tyndale	20	1	3	5	pain 3 days	- - -	- - -	- -	-	-	100 sharp	loaded	-	R	V.S. ℥xii, faint: leeched: calomel and opium to salivation.
May	83	Wood	-	1	3	24	pain off and on for 10 days	- - -	tympanites	cough	-	-	120	-	-	D	Complicated with anasarca: V.S.: stimuli: diuretics.
Nov.	84	N. Watts	25	1	-	30	pain 2 days before labour and 6 after	- - -	tympanites: vomiting: diarrhœa, offen.: tenesmus	quick: laborious	-	-	120	-	leg	R	Phlegmasia dolens: fainted after ℥viii: calomel every two hours: turpentine, &c.
	85	Bishop	25	1	3	7	pain 4 days	ache	- - -	- -	-	-	100 full	coated	-	R	V.S. ℥xx: leeches 12: poultice: purged.
Dec.	86	Spedding	23	1	3	5	pain 3 days	ache	- - -	- -	-	-	quick	white	-	R	V.S ℥x: leeches 20: purged opiates.
	87	Agen	22	1	14	-	pain	- - -	vomiting: purging	- -	-	-	short	white	-	R	Leeched: purged.
1832	88	Barnet	24	1	3	3	pain 2 days	- - -	- - -	- -	-	-	quick	white	-	R	V.S. ℥xl: purged: no syncope.
Jan.	89	S. Pratt	22	2	3	5	pain 3 days	- - -	- - -	- -	-	-	quick	white	-	R	V.S. ℥xii, faint: calomel.
April	90	M. Pidd	28	1	-	8?	no pain	delirium	diarrhœa, tense, rigid: vomiting coffee-grounds	- -	-	-	small	-	-	D	Stimuli: (no mention when the diarrhœa commenced.)
June	91	Templeman	36	7	2	5	pain 3 days	- - -	- - -	- -	fetid	-	96 hard	-	-	R	Leeched: (dead child): poultice, &c.
July	92	Cardell	23	2	3	7	pain 4 days	- - -	- - -	- -	none	-	90	loaded	-	R	Leeches 8: V.S. ℥xx: calomel to salivation.
	93	Currie	25	3	2	8	pain slight	great head-ache nearly all the month	- - -	- -	-	-	-	-	-	R	V.S. ℥xvi: leeched: tonics.
October	94	Bowler	31	3	2	2	pain 1 day	- - -	- - -	- -	-	-	106 sharp	-	-	R	V.S. ℥xviii: purged.
	95	Mason	24	3	3	3	pain 2 days	- - -	diarrhœa: tenesmus	- -	-	-	-	-	-	R	Opiates: calomel.
1833	96	S. Wood	37	5	2	1	pain 1 day	- - -	- - -	- -	-	-	-	-	-	R	16 leeches: poultice, and calomel purge.
March	97	M. Hurst	23	3	3	2	pain 1 day	- - -	- - -	- -	-	-	120	-	-	R	16 leeches: Dover's powder, and purged.
April	98	F. Clarke	31	3	3	2	pain 2 days	ache	diarrhœa: tenesmus	- -	scan. put. coagula	-	106	coated	-	R	16 leeches: Dover's powder, and poultice.

TABLE, No. III.—*Continued.*

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1833																	
May	99	H. Inman	25	1	2	30	pain 4 days	ache	- - -	- -	copious	-	quick	-	leg	D	14 leeches: Dover's powder, &c.: remained weak: had phlegmasia dolens: at the end of the month died.
	100	A. Lincoln	33	1	3	24	pain several days: returned after a long interval	delirium	tympanites	- -	-	-	quick	coated	-	D	Largely leeched: calomel and Dover's powder every four hours.
June	101	S. Barnett	24	1	2	7	pain 3 days	- - -	tympanites: much purged	- -	-	-	-	-	-	R	Leeches: Dover's powder and calomel purges: slow recovery.
	102	M. Detry	37	1	3	4	violent pain 2 days	excited delirium	- - -	- -	-	-	160	-	-	D	24 Leeches: Morphia.
Sept.	103	Collins	36	1	2	8	pain 4 days	- - -	diarrhœa: tenesmus	- -	-	-	natural	dry	-	R	Leeched: Dover's powder.
Dec.	104	Harrison	18	1	3	4	tenderness 1 day	excited delirium	- - -	- -	none	-	-	-	-	R	Calomel and purges: opiates.
1834	105	Thomas	22	1	6	10	pain 7 days	- - -	vomiting: diarrhœa	- -	none	-	110 full	foul	-	R	V.S. ℥xii, faint: leeched: poultice: hydrarg. c creta quartis horis.
April	106	McEvoy	28	6	3	-	acute pain	- - -	- - -	- -	-	-	-	-	-	R	V.S. ℥xxx: purged: (very short notes of this case).
	107	H. Foster	28	1	-	30	pain	delirium during labour	much purged	- -	-	-	120	-	hand	R	Very protracted labour: leeches 20: stimuli: opiates, &c.
Nov.	108	Marsh	34	1	2	8	some pain, which soon increased	excited	purged: tympanites: vomiting	cough	offensive	-	quick	furred	thigh	D	16 leeches (for the pain of leg) caused sinking: opiates, calomel, &c.
	109	A. Kimber	31	7	3	5	pain all the time	severe ache	tympanites: severe purging	difficult: pain of shoul-	-	-	144 weak	foul	-	D	V.S. ℥xvi: leeches, opiates, &c.: purged.
	110	J. Cousins	30	3	4	6	slight pain half a day	delirium: distortion of face	purged	- - [der	-	-	120 weak	furred	leg, wrist, eyes	D	Stimuli: opiates: (12 leeches in last stage: immediate death).
	111	A. Shadwell	34	3	3	6	great pain 4 days	- - -	vomiting	- - [ptysis	-	-	120 weak	furred	arm, gangr.	D	V.S. ℥xiv: largely leeched: stimuli, opiates, &c.
Dec.	112	Masterman	23	4	-	13	pain 1 day	- - -	- - -	pain: cough: hæmo-	-	-	120	clean	leg	R	V.S.: calomel every four hours: salivation.
	113	Halford	22	1	2	10	slight pain 1 day	delirium	tympanites, slight	pain of left side	-	-	144	dry	-	D	Stimuli, &c.
1835	114	Crow	19	1	3	14	no pain	incoherent on 10th day: (before which she complained of weakness).	- - -	- -	-	-	quick	-	arm	D	Stimuli: calomel.
	115	Mitchell	30	1	5	3	slight pain	delirium	much relaxed	- -	-	-	144	-	-	D	Stimuli.
Feb.	116	Pearson	30	1	2	5	slight pain 3 days	aching great	- - -	- -	scanty	-	-	-	-	R	V.S. ℥xxiv: purges of calomel.
	117	Smith	29	1	-	6	no pain for 4 days, then very slight	delirium	vomiting	- -	-	-	116 weak	brown	-	D	Stimuli: opiates.
April	118	Jones	26	1	1	5	no pain	irritable brain: delirium	- - -	- -	-	-	150 very wk.	brown	leg	D	Calomel quartis horis: salivation.
	119	Hawker	29	-	-	25	no pain	- - -	- - -	- -	-	-	120	scarlet	leg, eye	D	Colchicum, &c.
	120	A. Forrest	25	1	1	7	pain on 3rd day for 1½ day	- - -	tympanites	oppressed	none	-	120 weak	-	-	D	Stimuli.
	121	M'Gee	35	6	5	6	no pain	confused	tympanites	catarrh	-	copious	136	white, red	arm	D	Calomel gr.v, quartis horis: stimuli.
	122	E. Flannagan	23	2	3	3	pain and soreness	- - -	purged	- -	-	-	106 full	coated	-	R	V.S. ℥xii: 24 leeches, and purged.
	123	Pook	19	-	2	30	pain	- - -	- - -	- -	-	-	140 weak	coated, red	arm, hip, leg	R	Stimuli, &c.: lingering convalescence.
	124	Weedon	-	6	-	5	pain 2 days	ache	- - -	- -	-	-	140 full	-	-	R	V.S. ℥xxiv: leeches 24: Dover's powder.
June	125	Butt	30	3	3	2	pain 2 days	- - -	diarrhœa	- -	-	-	120 full	dry, red	arm, leg	D	V.S. ℥xvi: leeches 48: large and repeated doses of calomel.
	126	Peters	28	-	-	10	pain	much aching	sick	- -	copious	-	130 hard	dry, red	arm, leg	R	V.S. ℥xxiv: Dover's powder: poultice: calomel, &c.
	127	Buchan	39	9	4	28	pain 2 days	confused	diarrhœa	- -	fetid	-	136	-	arm	D	V.S. ℥viii, fainted: calomel purges: stimuli, &c.
	128	Tobat	40	6	2	6	pain 3 days	delirium	diarrhœa	- -	natural	-	140	-	leg	D	V.S. ℥xx, faint: leeched: calomel gr.iii: opium gr.i, tertiis horis: quinine.
	129	Harrison	38	6	2	6	pain 2 days	slight delirium	flatulent	- -	copious	copious	121 weak	moist	-	R	Dover's powder: calomel: ana gr.x.
	130	Fleming	29	6	2	4	pain 1 day	- - -	- - -	- -	copious	-	-	-	-	R	Aperients: Dover's powder, and alteratives.
Oct.	131	Gilliard	41	5	3	45	no pain	delirium	tympanites	- -	natural	-	110 weak	red	leg, knee, sloughs.	Left	Opiates: alteratives.
	132	Davies	24	3	4	10	no pain	slight delirium	- - -	- -	natural	-	120 soft	-	groin	R	Mercurial alteratives.
	133	Powell	25	1	2	3	pain 2 days	- - -	- - -	- -	-	-	120 soft	red	-	R	20 leeches: poultice: purges.
	134	Carroll	36	6	1	3	pain 2 days	- - -	tympanites: diarrhœa	- -	-	-	120 soft	-	-	R	Opium and castor oil.
	135	Owen	23	1	4	4	slight pain 1 day	ache	deranged	cough	-	-	100	-	-	R	Opium and castor oil.
Nov.	136	Packer	26	1	3	10	pain 2 days	ache	- - -	- -	abundant	-	132	furred	hip	R	Dover's powder and mercurial alteratives, with castor oil.
	137	Brailesbaw	-	-	4	20	pain	ache	violent vomiting and purging	gut pain	-	-	120 soft	-	-	R	Leeched: opiates: stimuli.
Dec.	138	Rogers	26	4	7	10	pain 2 days: a relapse	- - -	- - -	- -	ceased	-	100 full	-	-	R	Mercurial alteratives: Dover's powder: poultice, &c.
	139	Hanslow	24	4	5	4	- - - -	- - -	- - -	- -	-	-	-	-	thumb	R	Only slight general disturbance with local deposit.
1836	140	Gabel	24	2	2	20	severe pain	insomnia	relaxed	cough	-	-	130 full	-	-	R	Mercurial alteratives: Dover's powder: poultice: 20 leeches.
Jan.	141	Reynolds	25	5	-	13	pain	delirium	diarrhœa	- -	-	-	140	furred	-	R	30 leeches: Dover's powder and poultice.
	142	Mantill	20	4	-	10	- - - -	- - -	- - -	- -	-	-	-	-	clavicle	R	Leeched at the neck: tonics. No pain but in the clavicle: general disturbance and debility

TABLE, No. III.—*Continued.*

DATE.	NUMBER.	NAME.	AGE.	LABOUR.	TIME OF ATTACK.	DURATION	ABDOMEN.	HEAD.	INTESTINAL CANAL.	CHEST.	LOCHIA.	MILK.	PULSE.	TONGUE.	DEPOSIT.	RESULT.	TREATMENT. REMARKS.
1836																	
Jan.	143	Carey	-	1	3	9	pain 2 days	- - -	distended diarrhœa	- -	-	-	quick	furred	-	R	Dover's powder: astringents: poultice, &c.
Feb.	144	Barlow	27	5	2	15	pain 2 days: succeeding diarrhœa	delirium: insomnia	diarrhœa: tympanites	- -	-	-	very quick	-	arm, thigh	D	Alteratives: opiates: astringents: tonics: calomel.
	145	Waldron	22	1	12	8	a small spot of pain on firm pressure	delirium	tympanites, without pain: diarrhœa	cough	-	-	130 weak	dry, red	-	D	Leeches 20: opiates: turpentine: stimuli.
	146	Pratt	18	1	2	5	pain 2 days, slight: relapsed	excited	sick	painful breathing	-	-	very quick	-	vagina	D	18 leeches: opiates: stimuli.
	147	Whitaker	23	2	2	3	great pain all the time: tympanites	- - -	tympanites	cough: dyspnœa	-	-	very quick	loaded	-	D	Opiates: stimuli.
	148	Handscomb	29	1	4	6	severe pain 3 days	- - -	diarrhœa	- -	-	-	120	loaded	-	R	Dover's powder: poultice: stimuli.
	149	Farrant	21	3	5	4	distended, pain 1 day	- - -	diarrhœa	- -	-	-	120	white	-	R	Dover's powder: poultice: tonics.
March	150	Groves	25	1	-	20	pain 4 days	- - -	diarrhœa	- -	-	-	130 weak	red	-	R	Mercurial alteratives: Dover's powder: poultice: stimuli.
	151	Miller	23	1	-	7	tympanites (this patient had diseased heart)	- - -	diarrhœa	cough	-	-	very quick	loaded	vesication of nates	D	Diuretics, &c.
	152	Boone	22	1	3	7	pain 2 days	- - -	diarrhœa	- -	-	-	130	moist	-	R	18 leeches: Dover's powder: poultice: tonics: stimuli.
	153	Davies	23	1	12	2	pain 1 day	- - -	sick	- -	-	-	130	-	-	R	Calomel and Dover's powder, with poultice.
	154	Earle	23	1	0	8	pain 2 days, and relapse	- - -	- - -	- -	-	-	quick: weak	furred	groin, ilium	R	33 leeches: Dover's powder: poultice: stimuli.
	155	Brown	24	2	2	2	pain 1 day: fulness	- - -	vomiting: constant	- -	-	-	130 weak	-	-	D	Stimuli: calomel: Dover's powder.
April	156	Hillerly	21	3	2	27	pain 3 days	excited	- - -	pain: hæmoptysis	-	-	130 weak	dry	wrist, nates, knee	R	28 Leeches: opiates: tonics.
	157	Buckley	21	1	2	20	pain 3 days: tympanites	- - -	much relaxed	- -	-	-	130	-	-	R	Calomel: Dover's powder quartis horis: 30 leeches: tonics.
	158	Cooper	25	1	3	6	pain 1 day: tender 1 day	ache: insomnia	- - -	- -	copious	-	140	-	-	R	Dover's powder: calomel purges.
	159	Hervey	21	1	2	5	pain 2 days: relapsed	delirium	- - -	spasm	-	-	130	dry	-	D	V.S. ℥xxviii: calomel: Dover's powder: alteratives.
	160	Ford	24	1	5	10	pain on the 5th day	insomnia	vomiting	- -	-	-	130	-	-	D	V.S. ℥xiv: 20 leeches: calomel purges: opiates, &c.
	161	Ingles	21	1	6	19	pain 1 day	delirium	relaxed	- -	none	copious	120	red	-	R	Dover's powder: calomel gr.ii: opium gr.½ quartis horis.
May	162	Dunkley	32	6	3	10	no pain	severe pain	vomiting: purging	languor: fever	-	-	very rapid	furred	-	R	Dover's powder: hydrar. c creta sextis horis.
	163	Lewis	21	1	3	10	pain 2 days	- - -	much purged	fever, &c.	-	-	quick	furred	-	R	20 leeches, opiates, &c.
June	164	Brown	44	-	5	18	slight pain, after 5th day, 1 day	excited	offensive: frequent	great debility	-	-	quick	glazed	-	R	Calomel: opium quartis horis: tonics.
	165	Planford	27	1	3	6	pain 2 days	- - -	- - -	- -	-	-	fluttering	loaded	-	R	V.S. ℥xvii: leeches: much debility: Dover's powder: quinine.
*	166	Roberts	25	1	2	50	pain 1 day	delirium	diarrhœa	- -	-	-	quick	-	hip, elbow	R	V.S. ℥xviii: 20 leeches to the limbs: wine.
	167	Nicholls	31	3	1	10	pain 1½ day	delirium	much diarrhœa	- -	-	-	quick	-	-	R	Dover's powder: hydrar. c creta: morphia.
Dec.	168	Hoare	18	1	3	10	pain violent 3 days, slight relapses	- - -	- - -	- -	-	-	130	furred	-	R	Calomel and opium quartis horis: previous jaundice.
	169	Wiles	29	2	3	4	slight pain whole time	- - -	flatulence: diarrhœa	respiration difficult	-	-	125	dry, red	-	D	Calomel and opium: Dover's powder and poultice tertis horis.
	170	Story	28	3	4	1	great pain all over	- - -	nausea	- -	-	-	100	clean	-	R	24 leeches: purged.
1837	171	Hancock	23	2	3	2	pain 1 day	- - -	- - -	- -	-	-	105	furred	-	R	36 leeches: calomel: Dover's powder.
Jan.	172	Gell	22	1	6	4	no pain: feels pressure	- - -	frequent & disordered motions	- -	-	-	110	dry: glazed	-	R	Calomel: opium, &c.
	173	Chandler	22	1	4	2	pain from medicine	- - -	- - -	- -	-	-	100	-	-	R	12 leeches: calomel and opium every five hours.
April	174	Connerton	41	13	10	6	no pain	- - -	sick: tympanites: diarrhœa	sighing	-	-	140	furred: red	arm, knee	D	Calomel and opium every four hours: wine.
	175	Dragan	-	4	5	-	no pain	painful	- - -	pain	-	-	109	-	leg	R	6 leeches: opium and calomel.
	176	Franklin	34	4	9	3	tender	- - -	- - -	- -	-	-	100	foul	-	R	Hydr. c creta: Dover's powder: ana gr.v, every six hours.
May	177	Connor	24	1	6	8	tender 5 days	- - -	- - -	- -	-	-	130	-	-	R	Salivation: 8 leeches, &c.
	178	More	26	1	3	2	slight pain: tympanites	confused	diarrhœa	- -	-	-	140 weak	brown	-	D	Stimulants, &c.
Sept.	179	Barton	21	1	1	1	great pain	delirium	- - -	- -	none	-	-	-	-	R	Calomel and opium every four hours.
1838	180	Poole	24	2	2	4	pain 2 days	- - -	- - -	difficult	-	-	very quick	furred	-	D	Stimuli.
January	181	Munn	28	1	2	3	no pain	- - -	sick: relaxed	oppressed	scan. fetid	none	130 weak	-	arm	D	Anodynes: stimuli: Steven's mixture.
	182	Grady	35	6	2	2	tender all the time	- - -	tympanites	- -	-	-	112	-	-	D	8 leeches: anodynes: mercurial alteratives: stimuli: soda: ice.
	183	Whitehead	34	8	2	3	pain 2 days	- - -	diarrhœa	- -	natural	-	128 weak	white	-	D	Stimuli: opiates, &c.
	184	Wainwright	29	4	2	3	tender 1½ day	- - -	sick	cough	-	-	quick	-	-	D	Stimuli: soda, &c.: poultice: ice. [stimuli.
	185	Hely	41	7	2	2	pain: tympanites	- - -	vomiting	oppressed	scanty	-	128	-	-	D	Leeches 18: poultices: calomel gr.viii, several doses: turpentine: emetics:
	186	Noonan	28	-	5	-	- - - - -	- - -	- - -	- - -	-	-	-	-	-	D	No notes taken of this case.
	187	Collins	21	-	5	4	pain	ache	- - -	sighing	-	-	130	white	-	D	Calomel gr.i, every hour: Dover's powder and poultice.
	188	Greenhouse	22	-	8	2	pain great	- - -	constipated	- -	suppres.	-	140 weak	red	-	R	Calomel gr.xv: Dover's powder gr.xv.
	189	Lane	30	1	3	2	pain all the time: tympanites	- - -	- - -	quick	scanty	-	125	-	-	D	30 leeches: calomel gr.ii to v, every hour.
March	190	Barron	38	10	3	1	slight	- - -	vomiting	- -	copious	-	136	red	-	D	Hydr. c creta and Dover's powder every two hours: stimuli, &c.
	191	O'Brien	18	1	2	-	pain 2 days	- - -	diarrhœa from medicine	- -	-	-	124 weak	red	-	R	Calomel: purgatives: opiates.
	192	Hatton	26	1	3	3	no pain	ache intolerable: delirium	much diarrhœa: vomiting	- -	none	-	128 weak	-	left eye, tingling fingers	D	Opiates: hydr. c creta.
	193	Cox	27	-	2	-	pain	ache	- - -	- -	-	-	106	white	-	R	Calomel gr.v, tertiis horis: morphia: poultice.
	194	Jourdan	27	1	3	3	pain	ache	vomiting	- -	-	-	-	red	-	D	Calomel: saline purges.
	195	Foster	43	6	2	-	pain in sacro-iliac fossa	- - -	diarrhœa: offensive	- -	-	-	120	-	-	D	8 leeches: calomel: purges: soda, &c.
	196	Wiles !	-	-	-	-	- - - - -	- - -	- - -	- -	-	-	-	-	-	D	No notes of this case.
April	197	J. White	21	1	3	5	pain 24 hours	- - -	offensive motions	- -	-	-	140 full	red	-	R	V.S. ad deliquium ℥xx: salivation in twenty-four hours: leeched.
	198	Connor	27	3	3	15	pain 24 hours: relapse	- - -	offensive	- -	-	-	108 full	red	leg	R	V.S. ℥50: salivation in nineteen hours: relapsed: V.S. ℥xxx.
	199	Roper	24	1	3	-	slight pain	much pain	- - -	- -	-	-	120	brown	-	R	V.S. ad deliquium: had a convulsive fit after V.S.: salivation.
	200	Levick	26	-	3	6	tenderness	ache	purged at last	oppressive: quick	-	-	130	red	-	D	V.S. twice, largely: calomel gr.i, every hour.
	201	Aldrett	22	2	2	3	pain 3 days	great pain	loose: dark	- -	-	-	160	red	-	D	V.S. ℥vi: faint: leeched: calomel, &c.
	202	Knight	22	1	3	3	great tenderness all over	severe pain [less	- - -	burned	natural	-	140 very feeb	red	-	D	Leeched: V.S. ℥xl: calomel.
	203	Wynne	42	8	4	3	no pain	pain of forehead: speech-	distended	- -	-	-	-	-	-	D	Calomel every hour.
	204	Elliot	-	1	3	2	great tenderness over uterus	delirium	tumid	- -	natural	natural	140 full	red	-	D	V.S. ad deliquium ℥xii: calomel.
	205	Harwood	27	3	2	30 h.	soreness	- - -	vomit	distress great	scanty	-	140	red	-	D	Leeched: calomel every hour.

* No. 166, the time required in healing the local injuries is included in the duration of the malady in this and in similar cases.

TABLE No. IV.—MR. ARNOTT'S PAPER.

No.	WOUND.	TIME OF ATTACK.	DURATION.	LIMBS.	CHEST.	HEAD.	ABDOMEN.	GENERAL STATE.	PULSE.	TREATMENT.	DEPOSIT.	DISSECTION.
1	Venesection left median basilic	2	16	swollen: painful: purulent	hurried respiration	sleepless	painful bowels: purged	pyrexia: pain of limbs: repeated shivering	120	V.S. ℥xvi: faint: buffed: and cupped	left knee	Cellular condensation. Chain of small abscesses along the blood vessels. The axillary subclavian, superior cava, lining of heart, all healthy. Chest and abdomen healthy. Knee not examined.
2	Venesection	3	28	swollen: painful: purulent	painful: cough: purulent expectoration.	delirium	purged	pyrexia: great feebleness: irritable: pale: repeated shivering	116 to 140	V.S. ℥xx: faint: much cupped and buffed	inner side of deltoid: pleuritis	Abscess under the puncture. Basilic and median veins impervious, cord-like. Basilic vein terminated in abscess, two inches above puncture, surrounding membrane very dense: above this, lined with false membrane. Heart, &c., healthy. Lungs vomical. Pleuritis. Abdomen healthy. Serous fluid effused into texture of pia mater. Arachnoid opaque. Substance of brain healthy.
3	Venesection	6	9	inflammation to axilla: pus at wound	- - - - - -	- - - - -	- - - - - -	pyrexia: repeated shivering: sallow	120	- - - -	muscles: left knee joint: thigh swollen, hot: right shoulder	Cephalic vein punctured, contained pus two inches below, and four above, wound. Pus in knee joint, which was disorganised. Pus in muscles. Yellow serum over the rest of limb. Pus in cellular membrane of shoulder.
4	Venesection right arm	2	7	swollen to axilla: pus	hurried: right side painful	- - - -	- - - - - -	pyrexia: face and skin yellow: great prostration	feeble and frequent	- - - -	muscle: pleura: lung: brain	Vein filled, through its whole course, with pus. Right pectoral muscle infiltrated with green pus. Right pleura had ℥v fluid. Left lung, false membrane; both lungs hepatised, partially, and filled with pus in some of these spots. Arachnoid opaque. Fluid in ventricles and pia mater.
5	Venesection.—Hodgson, p. 512.	2	28	swelled, gradually	difficult	delirium	- - - - - -	fever: great prostration	120	- - - -	thorax: pia mater	Coats of cephalic vein thickened; cavity obliterated from one inch above the wound to shoulder. Brachial axillary, subclavian, and internal jugular enlarged and thickened. External jugular and subclavian filled with pus. Diseased appearances terminated abruptly. Serum, with flakes of lymph, in the thorax. Heart healthy. Lungs contained abscesses. Brain natural, but pia mater turgid. Serum in ventricles.
6	Venesection right median basilic.—Travers and Cooper, p. 1, p. 229.	2	17	swollen everted edges: painful	- - - - -	- - - -	- - - - - -	typhus fever	- -	- - - -	chest, on both sides	Pus in mediana longa; in the whole of humeral vein, to the axilla, irregular; false membrane lying on its lining membrane. One inch before passing under clavicle the diseased part terminated abruptly. Heart healthy. Fluid in both sides of the chest, and a little in the pericardium.
7	Venesection right median cephalic.—Trans. Med. Chir. Society of Edinburgh, vol. i. p. 485.	2	30	- - -	great uneasiness: hurried respiration	delirium: insensibility	- - - - - -	subsultus typhus	136 feeble	- - - -	left wrist and left knee: pleura	Mediana longa thickened; inner surface lined with lymph. Small abscess on the vein at the middle of the fore-arm. Two inches above the bend of the arm, the median and basilic veins filled with pus, their coats thin and easily ruptured; this appearance extended to the axillary vein and terminated abruptly. Purulent sac ℥v, between the first and second rib, pushing out the pleura costalis. Left wrist, pus. Lungs healthy. Heart natural, healthy; left side, deposit of lymph, externally. No disease in other cavities. Aorta deep red.
8	Venesection.—Archives Générales, Aout. 1827, p. 503.	2	14	pus	this patient was pregnant, and died 2 hours after delivery, occurring during the malady			great prostration: typhus	- -	- - - -	pleurisy	Median basilic nearly obliterated, thickened; all the other veins, entering into the trunk of basilic, filled with pus; the changes rapidly diminished. Superior cava and heart healthy; recent pleurisy and pulmonary engorgement. Other parts healthy.
9	Venesection.—Med. Chir. Trans. vol. xiv. p. 284.	-	21	- - -	affected on the same side	- - -	- - - - - -	- - - - -	- -	- - - -	violent pleurisy, ℥i of fluid	Basilic vein thickened. Veins of the back of the hand in the same state, their interior rough. Subcutaneous tissue infiltrated. Axillary vein, and the continuation of the trunk to the heart, free from inflammation. Pleura violently inflamed; ℥i of serum and flakes of lymph.
10	Venesection right median basilic	3	6	- - -	no dyspnœa: cough on full inspiration	delirium	vomiting of green and bilious matter	great prostration: whole body swollen and yellow: rigor.	very rapid	- - - -	℥i of fluid in chest	Right thorax ℥i of discoloured serum; old adhesions extensive. Left thorax same appearances; lower lobes consolidated; bronchial membrane florid. Blood fluid. Liver large. Kidneys gorged so as to look like the spleen. Median cephalic vein thick, up to two and a-half inches of axillary, but no further.
11	Popliteal aneurism	11	20	groin tender	- - - - -	- - - -	- - - - - -	pyrexia	quick and full	- - - -	- - - -	Coats thick; inner membrane lined with adhesive matter: adhesive inflammation extended to iliac vein, as high as the bifurcation of cava. Cava inflamed, but inflammation had produced neither pus nor lymph. Intestines slightly inflamed. Other viscera healthy. Much serous effusion into chest. One lobe of left lung covered with recent lymph.
12	Popliteal aneurism	5	13	- - -	sighing: moaning	muttering delirium	- - - - -	typhus: torpor: rigor	- -	V.S. ℥vi: buffed blood	- - - -	Crural vein lined with pus downwards to saphœna, up to the common iliac.
13	Amputation	2	4	- - -	- - - - -	muttering: delirium	bilious vomiting	typhus: rigors	very rapid	- - - -	- - - -	Femoral vein coated up to cava, where the emulgent vein enters; diffused inflammation up to the right auricle.
14	Amputation	3	11	- - -	sighing	- - -	vomiting	typhus: yellow: rigors	114	- - -	- - - -	Femoral vein inflamed; contained pus and lymph. Liver sound. No further examination.
15	Amputation: thigh	2	28	pain in the other leg, calf, and heel	- - - - -	- - -	vomiting	jaundiced	100	- - - -	- - - -	Inflammation, with pus, in the vein, extending from cava beyond diaphragm. Inflammation descended down the left iliac vein to the foot. Viscera healthy.
16	Excision of varicose vein, right leg, branch of posterior saphœna	2		- - -	difficult	painful	vomiting: epigastric pain	restless: depression	120	- - - -	inflammation of left arm, and left leg, both corneæ opaque	Abdomen, no disease. Chest, small recent abscess of superior lobe of right lung. Head, much effusion into pia mater. The serum of veins of the head deep yellow. Lymph effused round the carotid. Third pair of nerves of left side flattened, and softer than right; nerve of fifth of right side had undergone a similar change. The Globe of right eye inflamed; retina deep red; vitreous humour, yellow, red. Crystalline soft pus in the eye. Posterior saphœna, as high as the ham, inflamed. Deep-seated abscess beneath the fascia of left fore-arm and leg. Sero-purulent deposit in right fore-arm.
17	Saphœna divided	2	-	red: tender	- - - - -	delirium	sick	typhus	- -	- - - -	- - - - -	Vein inflamed. Abdomen healthy. No pus or lymph in the vein.
18	Amputation: two veins tied in the left leg	18	died 3rd	- - -	- - - - -	- - -	- - - - - -	great exhaustion	- -	- - - -	both hip joints: both lungs	Small abscess in right lung. Pus in left hip joint. Ulceration and absorption of its cartilage; same of the right hip. Saphœna thick, filled with pus up to the femoral vein. Left thorax, effusion of serum, pus, and lymph.
19	Compound fracture of left leg	-	died 30th	limb œdematous	- - - - -	- - - -	- - - - - -	rigors: fever: yellow	- -	- - - -	right lung: left pleura	Four abscesses in right lung; effusion in left. Lung livid. Tubercles. Crural vein inflamed; pus as far as cava, which was healthy.
20	Amputation of second metatarsal bone of right foot	-	died 10th	left hand œdematous	- - - - -	- - - -	- - - - - -	jaundice: great exhaustion	- -	- - - -	left arm and shoulder-joint: left lung	In the left lung many small abscesses. Left fore-arm, and arm, infiltrated up to the shoulder with pus, but the capsule of joint quite natural. The veins of the dorsum of the foot thick, and filled with pus.
21	Amputation of right leg	2	died 9th	- - -	- - - - -	irritable	- - - - - -	sallow	140	- - - -	right lung: liver ecchymosed	In the right lung several yellow masses, which appeared coagulated lymph, but contained pus. Liver large, ecchymosed. Femoral vein filled with pus, and lined with lymph up to the profunda.

TABLE No. IV.—(*continued.*)—MR. ARNOTT'S PAPER.—AFFECTIONS AFTER INJURIES OF THE HEAD.

No.	WOUND.	TIME OF ATTACK.	DURATION.	LIMBS.	CHEST.	HEAD.	ABDOMEN.	GENERAL STATE.	PULSE.	TREATMENT.	DEPOSIT.	DISSECTION.
1	Compound fracture of cranium, with division of membranes	-	-	- - -	- - - - -	delirium: hemiplegia	- - - - -	- - - - -	- -	- - - -	left lung: heart	Abscess of cerebrum. Much pus in a cavity of the left lung. Pus on the surface and substance of the heart.
2	Compound fracture of os frontis over left eye: tear of dura mater	-	14	- - -	- - - - -	- - -	- - - - -	- - - - -	- -	- - - -	liver	Large abscess of Liver.
3	Fracture: depression of lambdoidal suture: trepan.	-	8	thin did well till the 20th day: died on the 28th.		- - -	- - - - -	- - - - -	- -	- - - -	liver	Abscess of liver.
4	Compound fracture: depression of os frontis	-	12	- - -	- - - - -	- - -	pain in right hypogastrium	fever	- -	- - - -	liver	Inflammation of surface of liver.
5	Compound fracture of sinciput	-	16	- - -	- - - - -	stupor, recovered from in a few days.	vomiting: pain in right hypogastrium	fever: jaundice	- -	- - - -	liver	Chest healthy. Abscess in substance of liver.
6	Compound fracture of occiput	Bone attempted to be meddled with, which produced disease, which killed in three days				- - -	pain in right hypochondrium: pain in right hypogastrium: bil. vomit.	- - - - -	- -	- - - -	cranium: liver	Thickened dura mater. Effusion. Large abscess of liver. Chest natural.
7	Compound fracture of right parietal bone	10	17	- - -	- - - - -	stupor	- - - - -	rigors	- -	- - - -	liver	Abscess of the great lobe of liver.
8	trepan	-	-	- - -	- - - - -	- - -	- - - - -	- - - - -	- -	- - - -	liver	Abscess of liver; ℥vii pus.
9	Punctured wound of dura mater	60	90	- - -	- - - - -	integuments inflamed	- - - - -	constitutional disturbance: yellow skin	- -	- - - -	liver	No morbid appearance within the cranium. Abscess on the convex surface of the liver, beneath the peritoneal coat.
10	trepan	-	6	day after abscess of liver punctured		- - -	pain and swelling of right hypogastrium	fever: skin yellow	- -	- - - -	liver	Abscess of the liver.
11	Fracture of the right parietal bone: depression.	-	9	after trepan	- - - - -	- - -	pain in right hypogastrium	fever: yellow skin	- -	- - - -	liver	Several abscesses near the diaphragm.
12	Fracture of the parietal and frontal bones	-	11	after trepan	laborious respiration	- - -	- - - - -	- - - - -	- -	- - - -	- - - -	Liver gorged, large. No suppuration.
13	Small contused wound of left parietal bone	-	16	at first loss of sense, then recovery afterwards on the 16th		stupor	- - - - -	fever on 16th day	- -	- - - -	liver	Liver deep colour. Right lobe contained an abscess as big as an egg, containing sanies.
14	Compound fracture of os frontis	-	14	- - -	- - - - -	- - -	- - - - -	fever on the 11th.	- -	- - - -	brain: lung	Dura mater injured; pus between it and pia mater. Tubercles and abscess in the lung.
15	Compound fracture of sinciput	14	25	- - -	- - - - -	delirium	- - - - -	- - - - -	- -	- - - -	lungs	Lungs very red; small purulent abscesses. Sharp spiculæ of bone in dura mater.
16	Left side of sinciput	20	60	- - -	cough: purulent expectoration	- - -	- - - - -	fever: repeated pyrexia	- -	- - - -	lung: back	Tubercles and minute abscesses of lungs. Caries of bone (abscess of back) sagittal suture separated. Dura mater livid; particles of bone adhering to it; abscess in the substance of the brain under these. No connection between abscess of the back and wound of the head.
17	Wound of scalp: no fracture	14	22	- - -	respiration difficult: cough: purulent expectoration	- - -	painful	fever: rigor	- -	- - - -	pleura: lung: liver	Brain and cranium healthy. Both cavities of pleura full of pus. Tubercles and abscess in the lung, also in the liver.
18	Laceration of scalp over os frontis	21	35	- - -	- - - - -	coma at the time of the accident	painful: swollen	- - - - -	- -	- - - -	abdomen: liver	Dura mater sloughy; pus on its surface. Substance of brain sound. Abscess of liver. Serous effusion in abdomen.
19	Triangular incision behind each ear	10	17	- - -	- - - - -	- - -	- - - - -	violent fever: rigor	- -	- - - -	liver: brain	Pus under the incision on dura mater, which was thickened. Lateral ventricles distended, half a pint in each. Large abscess of liver. All the other viscera sound.
20	Compound fracture of frontal bone	-	4	- - -	inflammation	delirium: stupor	pain in the right side	fever	- -	- - - -	lung: liver	Right lung suppurated. Three abscesses of liver, containing pus.
21	Lacerated wound of the pericranium of the right parietal bone	7	29	- - -	inflammation only in the last twenty-four hours	- - -	- - - - -	great debility: two febrile paroxysms daily.	feeble: irregular: rapid	- - - -	lungs: brain: liver	Surface of bone rough. Corresponding part of dura mater dark. Pus in longitudinal sinus. Pus smearing dura mater. Pleuræ both filled with serum and lymph. Lungs ulcerated, sanious. Liver inflamed on its convexity.
22	Division of external table of os frontis	16	25	- - -	- - - - -	delirium	vomiting	fever: agitation	- -	- - - -	brain: liver	Fissure of inner table of os frontis. Green matter on surface of the brain. Small ulcers of the liver; surface covered with lymph.
23	Seven cuts: some through both tables of the parietal bone, but chiefly of the left	24	29	- - -	hurried	paralysis of right side	- - - - -	fever	- -	- - - -	left pleura: pericardium: lungs: spleen	Pus under dura mater, which was penetrated by splinters of inner table. In the left pleura a large collection of matter. Pericardium and diaphragm covered with a thick purulent membrane. Lung inflamed. Spleen large and soft.
24	Right parietal bone extending to diploe	15	17	- - -	hurried	dilated pupils: stupor	- - - - -	fever: extreme exhaustion	- -	- - - -	spleen: liver: right thorax	Dura mater gangrenous; its inner surface, on the right side, lined with lymph. Gelatinous effusion under arachnoid. Spleen twice as large as natural; soft. Liver large, dark; small ulcers on its surface; abscesses. Left chest natural; right filled with pus. Abscess in superior lobe, false membrane.
25	Left parietal bone denuded: no fracture	10	15	- - -	- - - - -	- - -	- - - - -	fever: rigors	- -	- - - -	brain: liver	Abscess of right hemisphere of the brain; white spots on its convex surface; two of these filled with pus.
26	Contused wound and exposure of the pericranium	11	17	- - -	severe pain: bloody expectoration	delirium	vomiting	fever	- -	- - - -	lung: brain	Pus in dura mater and brain. Large abscess in middle lobe of right lung.
27	External table of the right parietal bone: internal safe	11	13	- - -	- - - - -	- - -	pain in the right hypogastrium	fever: rigors: cold sweats	- -	- - - -	liver	Pericranium violently inflamed. Corresponding part of dura mater red. Brain healthy. A quantity of pus in abdomen from abscess of liver.
28	External table of the right occiput: internal safe	16	37	- - -	- - - - -	- - -	- - - - -	fever	- -	- - - -	liver	Violent inflammation of the pericranium bone and dura mater. Considerable abscess in the liver.
29	Right os frontis outer table	-	-	- - -	- - - - -	stupor	nausea	low fever: irreg. shivering	- -	- - - -	liver	Large abscess of liver. Pus on dura mater. Pericranium inflamed; also dura mater.
30	Fracture of the skull; injury of the brain	4	21	finger and ankle swollen	- - - - -	- - -	- - - - -	- - - - -	- -	- - - -	finger: ankle	The abscess did not communicate with the cavity of the joints. The cartilages of the finger and astragalus bared.
31	Left parietal bone denuded: no fracture	8	26	- - -	pleurisy and pneumonia	- - -	tense and painful	yellow	hard: frequent	- - - -	liver: lung	Pericranium suppurated. Dura mater healthy. Arachnoid thick; subjacent effusion. Twelve to fifteen white spots on the liver; pus underneath. Peritonitis with effusion; also effusion in both cavities of chest.
32	Blow on the forehead: abscess	49	-	- - -	- - - - -	epilepsy: on third week palsy	purged	screaming when roused: dilated pupils	120 small	- - - -	intestines ulcerated: abscess of lung: kidney	Frontal sinus absorbed, perforated. Dura mater over the sinus vascular. Longitudinal sinus filled with pus, and lined with lymph; the same in the other sinuses. Abscess of the left lobe of cerebellum, of the lung and kidney. Ulcerations of the intestines.
33	Fall: insensible till her death	-	23	- - -	- - - - -	- - -	- - - - -	- - - - -	- -	- - - -	- - - -	Fracture of base of skull. Rupture of the brain. Pus under the pia mater. Liver and spleen studded with tubercles; circumscribed abscesses of different sizes.

CONCLUSIONS.

1. Death does not result from extension of inflammation of the vein to the heart. In none of the ten cases following V.S. was even the superior cava affected, and in half this number inflammation had not reached the subclavian or even the axillary. In the three cases (Nos. 13, 15, 11,) the inferior cava was inflamed; and, in 13, the heart is diffusedly inflamed.

State of the Vessel.—In many, pus discharged from it during life. In fourteen out of seventeen cases pus, or pus and lymph, found in it after death. In cases 13 and 15 only lymph. In one case neither pus nor lymph, case 5. Hence pus in the circulation is the principal but not the sole cause of secondary affections.

The Time of Attack.—Two to ten days after receipt of injury. Time of death from four to forty-nine days.

Morbid Anatomy.—Chest inflamed: pus: serum: lymph, in ten cases. In three, chest not examined (12, 14, 17). In 13 and 15, chest not noted. In two (Nos. 1 and 3) no affection of chest.

Cellular Substance.—Five cases of deposit: eye in one case (No. 7). Brain: five instances of opacity of arachnoid and effusion. In nine, head not examined. In three, no morbid appearances.

Phlebitis from Injury to Head.—In twenty-five cases abdomen affected: five chest: and six, both conjoined. In two cases, inflammation of surface of liver, without suppuration. The only circumstance common to the 33 cases is wound of soft parts.

ON THE METHOD OF INDUCTION AND ITS RESULTS IN MEDICAL SCIENCE.

A LECTURE,

READ AS

INTRODUCTORY TO THE OPENING

OF THE

MEDICAL CLASSES

OF

KING'S COLLEGE, LONDON, OCTOBER 1, 1836;

BY

ROBERT FERGUSON, M.D.

A LECTURE,

&c. &c.

Medicine, the study of which you are about to commence, has always been deemed a liberal pursuit, as affording the amplest range for the exercise of the highest intellectual powers, as well as of the best feelings of our nature.

It has for its object the well-being of man, which daily experience proves may be compromised in a thousand ways; for life is a continual warfare, and the condition of our existence a never-ceasing conflict with elemental agents. It may be compromised by the undue action of those forces which are developed in the individual, or arise out of his social position. It imports the physician, therefore, to be acquainted with the relations of man with nature, with society, and with himself,—to ascertain their respective influences, to trace their actions, and define their laws.

With so extensive a field for intellectual exertion, it is no wonder that medicine should be accounted one of the most difficult of studies—so difficult, that a complete knowledge of it has not only been denied to any individual, but even to the race. The very length of the journey often makes the traveller linger on the road; and, as in order to attain the wished-for goal, he must call to his aid all the appliances and means which will further his progress, and sustain him in it—so the student of nature must bring to his task those habits which, from long experience, are known to invigorate and discipline the mind.

He must be prepared by such preliminary studies as will give pliancy to his faculties—will render the perceptions vivid—the attention alert—the imagination inventive—the memory full—the judgment just—the reason searching.

Preliminary studies, however, such as those of language, the discipline of numbers, and general physics, must not be pursued as ends, but as means. Obtain all the light which you can to illumine the paths on which you are about to enter; but, remember, that there is no portion of natural knowledge which does not reveal its Infinite Source, and which is not too vast for finite comprehension;—that though the various sciences are connected, they are not involved: they touch each other respectively but in one point, and it is these points of contact with medicine which you must ascertain, and learn to avoid a too curious

inquiry into the connexions which they may exhibit with regard to each other.

When thus disciplined you are prepared for observing. But observation is one of the most difficult of processes. In the first place, the facts to be ascertained are often very complex, and those of medicine particularly difficult to unravel. Then, again, our observing faculties are deceitful, and the mind interpolates views which nature never offered; and if, to correct these sources of error, we resort to the experience of others, the appeal may still be made to faculties as deceitful, and judgments not less erroneous than our own.

Neither attention, perseverance, nor a minute spirit of inquiry, nor dexterity—although all are most precious gifts—will produce a rigorous or exact observation. They have all been exerted in the pursuit of the solemn frivolities, as strenuously as of the solid discoveries of science.

What then constitutes the true method of inquiry? This is a question which concerns us all most nearly; and I have in vain sought for a subject more worthy of the student's attention, than the investigation of those laws of observation by means of which alone truth can be attained. That there is a right and a wrong method of observing, is evident, since mankind have always observed, but rarely discovered.

Some have referred to experience as the just method of right observation, understanding by expe-

rience the view of a multitude of facts. As experience, however, does not consist in seeing much, but in seeing well, there must be method, there must be discrimination, and a comprehensive perception in our experience, to make it available and productive. Others have brought forward two modes of looking at nature, each of which has had its advocates—I mean, analysis and synthesis; but the signification attached to these terms, by the mathematician, the chemist, and the metaphysician, are very little accordant. By analysis, the subject is broken into its constituent parts, and its properties determined by the investigation of each; while by synthesis, its nature is supposed to be perceived as a whole, and its qualities and attributes are thence deduced.

Now, although analysis and synthesis are two admirable instruments of investigation, neither the one nor the other will lead to the discovery of truth, unless the method of using them be just. Aristotle and Plato, Descartes and Newton, Stahl and Boerhaave, Cullen and Brown, have each used these intellectual optics, and with results as various as their systems.

Others vaunt experiment as the sure road to discovery. But this also will only lead to truth if the experimental process be correct and comprehensive.

The ancient anatomists experimented, it is said, even on the living human subject; and yet they saw in the arteries only canals for carrying air, in the

brain a pulp for tempering the heat of the lungs. Almost, in our own times, the celebrated Bonnet attributed all cases of softening of the nervous centres to the effusion of a non-entity, which was termed atrabile. Thus, then, it is not sufficient for the investigation of truth that we should look, but that we should perceive. Insight is more requisite than sight. Our purpose or object, and our mode of observing, should be clearly and fully recognised by the mind before we begin to observe, or else we shall inevitably fall into those errors which for so long a period obscured and falsified science.

Our purpose or object in observing is to make use of facts; and we can be said to possess the power of using a fact, only when we know what it is caused by, and what in its turn it will produce. If the fact observed is recognised by the mind as forming a link of a consecutive series, we are said to be in possession of science or scientific knowledge. We can now trace whence it emanates, and what it will produce; we can, in a word, make use of it.

Cuvier's investigation of fossil organic remains, is a splendid and an apt instance. Previous to him, many naturalists and philosophers were aware of the existence of petrified bones imbedded in the crust of the earth, and had indulged in a variety of conjectures to account for their presence. He, however, arranged the hitherto isolated and useless facts into a series, of which he could at any time predicate the antecedents

and consequents. The merest fragment of a *petrifaction* enabled this great man to evoke those ancient shapes, which were hidden amid the ruins of a lost world, and to decypher in its hieroglyphics the history of primeval races and terrible catastrophes, and to extend the sphere of human observation beyond the origin of the human race.

I might shew you, from the consideration of facts, taken in any of the other departments of human knowledge, that science or scientific acquirement exists only when we observe a series of consecutive and connected facts, so that the possession of one of them enables us necessarily to trace the rest. Hence all science pre-supposes a belief in the existence of order in the universe. We walk in the full assurance, that under like circumstances similar effects ensue; that there is an appointed order for all things, above and below us, around us and within us; that the universe is revealed to the reason of man as the work of intelligence only;—a faith as common to the peasant as to the philosopher—to the believer as to the atheist, who, however he may deny an intelligent First Cause, has never been able to shew that the laws of nature are irrational.

Our object and purpose being the collection of consecutive and connected facts, the true method of attaining it may be summed up in the words of that great man, who was the first to point out the right paths to true knowledge:—

"Man," says Lord Bacon, "the servant and interpreter of nature, understands, and can effect just so much as he has actually experienced—more he can neither know, nor achieve." In a word, we must interpret and not conjecture. The mind must resolutely abjure all its darling fancies and its idols, and approach the precincts of the great temple of nature with humility.

In the language of Milton, "It must measure its wisdom by simplicity—its strength by lowliness. It must count its first to be last—something to be nothing—to be of great command in that it is a servant."

The first step towards a right interpretation of nature, is to seize the facts as they arise, without adding to, or diminishing, their import, and without changing their order of sequence.

When the ancient physicians saw that an abscess quickly healed after bursting, and that perspiration succeeded the hot fit of an intermittent, they *conjectured* that all disease was caused by the introduction of humours, which were at first crude, then concocted, and then evacuated. Hence the foundation of the theory of crudity, coction, and crisis; of expectant medicine,and critical days, which Galen strengthened, and which Laennec could not throw aside.

This error of assigning to nature our views and feelings, instead of simply interpreting facts, is so adhesive to the mind, as to deserve at the hands of

Lord Bacon, the quaint but expressive title of "idols of the tribe." In order to avoid it, there are two modes of proceeding, by which we may clear away the mental mist, and hope to view nature with a pure and unmixed light.

By the first, we simply repeat the observation, carefully noting the natural sequences.

By the second, we re-produce the event forcibly by experiment, which is the complement of observation.

We may always observe, but in some portions of human knowledge we may not experiment. In medicine, our knowledge of disease is based on observation; that of its cure, on experiment.

If the repetition of the observation gives the same sequence of events, and this is further confirmed by a forcible reproduction by experiment, we may rest satisfied that this is the order of nature, in which is truth; and at this point we may acquire additional force of conviction by a judicious appeal to the testimony of others. Hence, reading such records as bear on the subject of our search, is essential to the rapid development of science. All the great advances have been made by great men, who had gathered up the knowledge of the past as a foundation for that of the future. The history of every science exhibits so few instances of men anticipating their age; and, on the contrary, such a slow unbroken continuity of progress, that the confident and the sanguine would do well to remember the remark

of the witty Fontenelle, that "only great players have great luck."

I say thus much in favour of the union of a judicious course of reading with observation, because it has of late been the fashion to be too exclusive on this subject.

After a series of facts has been obtained, the second step is to extend it, and the mental instrument by which this is effected is termed analogy. The faculty of finding resemblances in things is doubtless innate. In its application to scientific purposes, however, we are likely to be deceived in two ways, either we shall see fanciful resemblances, or we shall perceive no differences. Of the latter error, I would venture to say that the German school of Natur-Philosophen affords an apt illustration. They have soared so high, and looked down from so lofty a point, that all distinguishing characteristics are lost in the scientific haze. On the other hand, fanciful analogies have always abounded in medicine. Witness the theory of fermentation transferred from chemistry to physiology; witness the Archæus, or corporeal soul, of Stahl and Van Helmont; the humoral pathology of older days; witness, in short, the whole history of medicine, which has ever borrowed the latest discovery of the last science to explain by analogy the mysteries of organisation.

When we have compared analogous series of facts, we shall always find one which is common to the

whole, and this fact so obtained is termed a law. It should be borne in mind, however, that this law is, after all, only a general fact, which throws no light on the essential nature of things. We know the law of gravitation, but nothing of the nature of gravity. The greater the extent of each series of facts, and the greater the number of such analogous series, the more general and solid will be the law which results from their comparison.

It is most difficult to know when we should cease to collect and compare, and begin the more enticing process of generalising facts. The history of science shews that mankind have almost invariably generalised prematurely.

Notwithstanding this warning voice of the past, I am tempted to think that our progress is retarded in several departments of medicine, by want of arrangement. The scientific world has for the last seventy years been employed almost exclusively in amassing particulars, until its state may be compared to that of an army impeded by its baggage.

Every thing is mooted, and nothing is settled. One series of facts is brought forward to prove a certain point, which is oppugned by another series of contrary facts. And this opposition of fact to fact is usually mistaken for victory. It should be remembered, however, that both series may be incomplete; and in the majority of cases, they will actually be found to be so. A vigorous generalisation, if it led to

no other consequences, would at least clear the field of science of much which impedes our advance.*

* The advantages accruing, would be the reduction of a confused heap of particulars into orderly groups;—the danger which might result, would consist in mistaking these partial generalisations for the absolute expression or law of the whole mass of facts. In spite of what is said against hasty generalisations, as they are termed, they are of immense use in advancing science, provided they are limited and recognised as partial. The error is relative, for they are not absolutely false, except only when applied to too extensive a series of phenomena. These partial generalisations will be found to contain and to convey a subordinate truth, linking *many*, instead of *all*, the particular facts, and they greatly facilitate the mind in the contemplation and the reduction of details.

On these grounds, the objections urged by a distinguished authority against the Baconian system as a practicable one, admit of a reply. It has been asserted, that this system is too cumbersome and inapt for discovery, and not the natural mode in which the mind works, in its search after truth, and that Bacon's signal failure, on a trial of his own method, proves these assertions. The mode in which discoveries are made, according to the same authority, is this,—several hypotheses, *relating to the facts requiring interpretation*, are to be successively tried, until the one which fulfils the condition of the problem is found. Now it is quite true, as far as regards any individual discoverer, that this is the mode in which all successful investigations have been made—for few observers have arrived at truth by doing as Bacon recommends, and adhering *formally* to his rules. But it is no less true, that the method advocated is so far from being opposed to the inductive process, that it actually is the inductive process. For the hypotheses alluded to will be found

After a general law is obtained, we are permitted to shorten all the succeeding steps of our investiga-

to be some of those partial generalisations, by induction, made from time to time, and handed down from age to age.

The history of the progressive advancement of science confirms these views—for, in tracing it, we find that the first epoch of scientific discovery is characterised by the collection of a few facts, and many theories. A theory of some kind, as M. le Comte has lately observed, being essential to stimulate the human mind in gathering facts. Various observers arrive at various conclusions, each generally looking on his own generalisation as solely and entirely true. The second epoch consists in the accumulation and comparison of new facts, for the purpose of refuting or substantiating some one of the opinions which have floated down the stream of knowledge, in the course of which conflict one or other of these theories is proved to contain all that is true in the rest; or a new principle is evolved which embodies the others, and explains the whole mass of facts. When the true interpretation of any series of phenomena is at length found, it is again submitted in the third epoch to a fierce and fiery ordeal of doubts and opposition, until the pure ore of truth has lost, in the furnace of human passions, all its dross; and then, and not till then, is it placed among the intellectual treasures which pertain to our race.

So constant and so searching among all nations, and at all times, has been the opposition of mankind to the reception of a new principle, that one is tempted to regard, with Littrow, this most ungrateful fact, as the consequence of a law of the human mind, essential to make truth attainable. Certain it is, that it is well fitted to separate the useful from the useless, and though the individual be sacrificed, the race is benefited.

In the moral, as in the physical, economy of man, the welfare

tion, by neglecting the means hitherto used, of proceeding from particulars to generals, and at once to assume that the new phenomena, presented for interpretation, are under the new law.

If any hitherto unobserved planet or comet should suddenly become visible, the astronomer would at once assume its motions to be regulated according to the laws of gravitation; and the fact of finding them to tally, would test the truth of his assumption.

This mode of investigation, by ascending from individual to general phenomena, is termed the method of induction, which I will now sum up so as to lay it clearly before you.

You collect facts, which relate to the subject to be investigated, and see that they form a natural series. You extend the series by experiment, and by comparing it with other series of analogous facts, you arrive at a fact common to the whole, which is termed a law, but which simply interprets without revealing the nature of the series. Up to this point you have proceeded by analysis, that is, from particular facts to a general conclusion. Instead of pursuing the slow and laborious mode, in the explana-

of the individual, perhaps, is subordinate to that of the species. Like the worker bee, the individual is doomed to go forth and gather, and bring in his store, and labour with a blind love, and die in the discharge of duties which extend far beyond his own sphere, and sustain a polity, the ends and objects of which it is not appointed for him to fathom.

tion of new analogous facts, offered to your observation, you may at once apply to them the general law which you have deduced; and if it is a general expression of their actions and states, they are said to be explained by it.

This second part of the process is termed synthesis. By analysis we best acquire, and by synthesis we best communicate our knowledge. This method is opposed to the ancient one, which, as it substituted conjecture for induction, was termed the method of anticipation. A cause was always assumed derived from some darling fancy, an idol of the mind, and then adapted to the perceived phenomena.

These are the only two *methods* by which the intellect has ever been known to work — the method of conjecturing causes, or the method of observing laws; anticipation, or induction; and, unless the course of nature be changed, the conclusions of the latter must remain as solid as the foundations of the universe.

It is generally believed that Lord Bacon, both by precept and example, has interdicted the search after essential causes, confining the inquirer to the simple observation and comparison of series. I scarcely know how this opinion has gained ground. For his writings are filled with assertions, implying the capacity of the human mind for searching into essential being; for a capacity, for example, not only to deduce the laws of life, but for ascertaining in what

life consists. In these hopes the most eminent of his disciples, with intellects which have immeasurably extended the empire of man over the elements, have not dared to follow their great master. For nearly two centuries have they been soliciting nature with all the powers, which native genius and acquired treasures could command; but as yet have not been permitted to penetrate the inner sanctuary, nor obtain the slightest insight into that mysterious union, through which secondary causes spring from the great First Cause.

Of late, it is true, that the audacious longings of the human reason for complete knowledge—"to taste the fruit thereof, and be as gods"—has emboldened two of our neighbouring nations to endeavour to fathom this great mystery; but with so little success, as to serve rather as a warning than an encouragement.

A mind like that of Lord Bacon's—of such a vast comprehension—of so pure an insight—filled with poetry, and drawing its light at once from that etherial fire which burns on the eternal altar—might, in its visions, have hoped to have passed the limits assigned to the rest of his race. But to us the sphere of knowledge is bounded by an unknown world, which meets us on every side, opposing all our attempts, — which, while we know that it must contain the origin of all those powers, whose manifestations are here evidenced, yet are we not permit-

ted to perceive. Its influence is felt, though its rays have not as yet reached us.

Do not you, I intreat, imagine that what I have said does not concern yourselves—that this detail of a method, is a scholastic disquisition, rather than a practicable system—that you may not require it, under any circumstances, or at any time; and certainly not under your present circumstances, and at this time, the spring and onset of your career. If ever it is of advantage to think rightly, it is so at your age, when the mind is fresh and ductile. Postpone this discipline, and time will bring with it changes from which you will not be exempted. It will bring with it rooted prejudices, and modes of seeing things after your own ways; your position in life, and your associations will give a colouring to events; and you will find that you have not escaped the thraldom of habits, but have only acquired inefficient ones;—that your mind has been moulded by circumstances, instead of by principles—that your views of science and scientific advancement are oblique—that your laborious industry is unproductive, because immethodically, or falsely exercised—and that your years have slipped away without enriching the intellectual stores which were entrusted to you.

Remember, that whatever we possess of science has been obtained only under this method—that all that is good in past systems, was unconsciously collected by this process of mind—and that the posses-

sions of the present, and the hopes of the future, are derivable from it alone. These possessions, and these hopes, have descended now to you, and they who have preceded you in their pilgrimage, have set up land-marks on the road-side to guard you from wandering and guide you to truth—fountains of knowledge to refresh the thirsting mind, and resting-places to give it repose. The field in which they laboured is indeed a vast one, and much as they did, more is left for you to achieve. Let us, for a moment, take a rapid survey of our possessions.

And, first, our profession demands for its base and ground-work, the study of vital phenomena. Life teems around, and above, and below us, in such profusion as to confound the imagination with the incessant action of succession and decay. At no single instant are the materials of the living body the same —particles are attracted and retained—expelled and renewed from the first moment to the last of each individual's existence; and what appears the repose of death, is, in physiology, but another change into other forms of life.

Incessant as is this movement, the composition and direction of the material of this vortex remains the same in each animal; and before the present matter of our bodies shall have passed away, it will have constrained, by virtue of a force residing in it, the newly-acquired matter to move in the same sense as itself. In organisation, therefore, matter must be

considered as the fugitive, and form, or the plan of the edifice, the permanent element.

This appearance of the persistent and stable, amid the variable and transient, seems to be put forth with great emphasis by nature, as the characteristic of the vital force. The elemental agents of even the greatest power are, nevertheless, devoid of form. In inorganic bodies, as in minerals, form is but accessory and dependant on that of the primary molecule. It is in living bodies alone that it appears perfect and individual, and so little changeable, that the minutest colouring on the wing of an insect, seen and described by Aristotle, is recognisable in any living specimen of the species, by the naturalists of our own day.

Not only are organic forms permanent, but they are few. The greatest comparative anatomist of this or any age, Cuvier, has, by a strict generalisation, conducted on the principles which I have here discussed, reduced the myriads of animated forms to four; and it is at this instant mooted, whether even these may not be considered as variations of one plan, and the living universe be but the varied manifestation of one stupendous truth.

Three series of facts have been collected, compared, and generalised; and it is from these data that the laws of formation are deduced.

First, the forms of all animals have been compared with each other; secondly, with the forms

which each animal assumes in its progressive development; and, lastly, with defective forms, or monstrosities.

The comparative anatomist finds, that in the production of forms nature proceeds from simple to complex—the lowest animals are the simplest; and he remarks, that, in building up the animal series, the mould or form is not changed, but only modified, to produce the various kinds of animals; so that, with a very few laws of relation, he can connect and explain the immense range of living beings.

In tracing the development of form in the individual, from its embryotic to its mature state, it is remarked, that the young of every species of animal undergoes a series of metamorphoses in the order of simple into complex. This analogy between the development of the whole series of animals, with that of each individual, suggested a more minute comparison, when it was ascertained that the embryo of each class ran rapidly through the essential forms (not shapes), of those of a simpler construction than itself, previous to reaching its own place in the animate scale; and thus man, who begins his existence with the organless simplicity of structure of the polyp, and rapidly expands to his own sphere, is said, in the extravagant and tasteless language of Meckel and Serres, to be a transient compendium of comparative anatomy.

The study of defective forms proved the truth of

these conclusions. The monstrosities of the human species admit of classification, and form a series, ascending from the simple structure of the lower animals to the complex one of its own species. Each monstrosity offers two points of view. In the one it will be found to resemble the regular structure of the embryo, arrested at some early period of its regular development; in the other, its form, or the plan of its organic arrangement, will be similar to that of some of the classes of the animate series.

These conclusions, which rest on and explain what is termed the theory of the unity of composition, belong to the highest speculations of anatomy and physiology, and have engaged the attention of the greatest intellects at all times, though they have been matured only in our own.

The appearance of an unchanging permanent element, amid the variableness of organic matter, was recognised by Plato, under the term "idea;" by Liebnitz, under that of "monad;" by Buffon, as "moule organique;" by the Germans, as "noumenon," "type;" by Cuvier, as "form;" and not to mention the terms applied by the ancient naturalists to this same notion, under the expressions of "formative,—sensitive,—and rational soul," you remark, that the profoundest thinkers of all times have always separated the idea of life from that of matter.

As to the forms or plans of organs, the laws which apply to the whole organism are deducible

by the same steps, from a consideration of each organ. Hence it is, that comparative anatomy sheds such a light on human anatomy. Each organ passes from a simple to a complex structure in the embryo, and each transient form that it assumes in its development, will be found, fixed as the permanent structure of some of the lower animals. Comparative anatomy shews the human structure, in its most naked and simplest forms; it unravels and exposes the intricate web of the most complex organs. The conglomerated liver is unfolded into biliary ducts; the four-chambered heart may be seen as a simple tube in some animals, in others with two, in a third with three cavities. Our composite lung of tubes and cells, is separated; and the breathing apparatus of one class of animals are tubes alone, and of another gigantic cells.

As an instance of fanciful analogy, let me mention, that as the organs of animals are often only fragments of the similar human organ, so, some of the most eminent German naturalists have regarded the various classes of animals as so many individualised portions of our frame. Thus the class of birds, in which the very bones are subservient to respiration, they call thoracic animals; the mollusca, are walking stomachs, abdominal animals, and so on.

Our profession requires, not only that we should take a general view of the phenomena of life, as exhibited in the animate scale, but that we should

especially understand those which are visible in man; and here we have three objects of study, each a separate science.

We observe, as I have already remarked, that our organism has the property of attracting, repelling, and retaining matter with which it is in contact. The living body, therefore, may be regarded as a great laboratory, in which the most delicate chemical processes are going on.

It is the province of the chemist to investigate, and, if possible, to render an account of animal substance, and deduce the general laws which explain the molecular action of each organism.

We remark, secondly, that there are specific apparatus for receiving and modifying the various kinds of matter which surround us. It is the province of the special anatomist to describe each of these.

Thirdly, the physiologist should examine the forces, by virtue of which the living organism acts on the media in which it is placed.

The first of these, or animal chemistry, yields to no subject in interest or importance. But the investigation is surrounded with such difficulties; the object to be analysed is so delicate, and yet so complex; the instruments which the chemist can command, are so little under his control, and so thoroughly the slaves of the power he would surprise —that we ought to wonder, rather at what has been done, than at what has been left undone in this

science. All we know of nutrition and secretion, is little more than that each organ imitates the whole organism, attracting and rejecting what it is essential it should appropriate or repel; but the laws of organic combination and repulsion are utterly un known.

In the separation of one constituent portion of organic matter from another, the chemist, however, has been much more successful than in the investigation of the laws of organic chemistry. He has enabled us to perceive that the same wonderful economy is exhibited in the minute and hidden processes of life, as in its large and open display; and that the immense diversity of composition results from a modification of two or three substances, just as the variety of forms were derived from two or three plans.

In addition to these points, we are indebted to the chemist almost wholly for our curative agents. If the profoundest phenomena of life are explicable, I believe that he who unites the study of the chemistry of organic bodies with comparative anatomy, will be the most likely to enlarge our knowledge; and it is in that direction I look for the future advance of physiology.

Of the second of these sciences, special anatomy, a long series of facts, collected from the earliest periods, have made us acquainted with the channels through which the various kinds of matter are assimilated to the frame.

The first channels, or primæ viæ, were described by the ancients. The second, or absorbents, were discovered by Pecquet and Ruysch. The conveyance of the nutritive matter, in a more elaborate form, into every part of the frame, through the third channel, was made known to us by Harvey.

The description of organs subservient to those of individual preservation, we owe to inquirers of all nations, among whom our own has furnished not a few illustrious names. Bichat was the first to compare the parts of the human body with each other, and to demonstrate that a few primary tissues, slightly varied, make up the diversities of our organization. Finally, the various organs have been compared, in the whole range of animals, by Cuvier, who, attending especially to the modifications of the organs of respiration and circulation, has been enabled to assign to each living creature his place in the animate scale.

With regard to physiology, or a just theory of organic forces, we know a great deal most imperfectly. A vast number of facts has been collected, but there is no continuity in the linking. The study of physiology has been pursued with a view to the differences, rather than to the analogies of organs, and each function has been investigated for itself; while its connexion with others has been neglected, or only slightly touched. Not only is the mutual influence of different functions imperfectly known, but

we are ignorant of the whole steps of any one function; and yet practical medicine, in which we have so often to consider the action of one organ on another, will never be a science until the mystery is unveiled. It is fortunate, however, that medicine makes no exception to the general truth, that there is light enough here to guide our actions, though insufficient to enlighten our reason, and that an experience often repeated, and accumulated from age to age, enables the physician to arrest disease, the latent process of the formation of which he cannot always develope.

Besides the movements which the chemist has to explain, the physiologist observes an activity in most of the animal tissues, which not being traceable to any mechanical or chemical agent, he assumes as an ultimate fact, under the name of irritability.

An apparently different kind of force from the last, is found inhering in certain portions of animal matter termed "nervous," which matter, though homogeneous throughout the frame, has the marvellous property of being affected in the most diverse ways by the external world, and awakening in the mind the most varied sensations and emotions.

Both irritability and sensibility appear to admit of gradation, increase, and extinction; both are inexplicable in our present state of knowledge, though it is not improbable that both are functions of nervous matter alone, and not of fibrous substance, as Haller supposed the one to be.

In addition to these two forces, which place man

in connexion with the material world, a third is superadded, *the reason*—which, if we consider it as only an additional bond, tying us to earth, exhibits an instance of prodigal waste of power, without parallel in the rest of the economy of the universe. For all the purposes of this life only, instinct would have been a surer guide. On physiological grounds alone, did others fail us, we may infer that our moral force has reference to other relations than those of the material world, of which it is indeed the great antagonist. The facts I have enumerated, are the results of its power; and the history of science, a record of its conquests. It alone has enabled man to subdue element after element, to become the ministers of his good or evil will. By its means he has reaped where nature never sowed, and gathered where she had never planted. The desert it has rendered fertile, and into a paradise it has brought the desolation of the grave. It has changed the face of the earth, and scrutinised the heavens, and has found both too narrow for its vast wants and restless activities; so that they who have possessed this force in greatest power, have, in all ages and countries felt and proclaimed that its complete fruition and repose must be sought beyond the limits of the material universe.

The study of these three special sciences lays the ground-work of practical medicine. As yet we have no law, which will explain all the phenomena of disease; and the signal failure of those who have

attempted systematic explanation, has determined modern physicians to confine themselves to the accurate description of the internal and external characters of disease in each organ. They are collecting series of facts, as to the suffering of each part of the body separately considered; and it will be long before these several series will admit of comparison, so as to furnish a law by which disease in general will be explicable.

Our age is employed in the study of what Lord Bacon called "the latent processes of phenomena;" that is, the discovery of all which happens between any two remote links of a series, both of which are known to us.

As a familiar illustration, I would say, that an exact knowledge of all that occurs between the application of a match to gunpowder, and the explosion, is an instance of a latent process understood. Now, with regard to all the diseases of the chest, the latent steps by which death is brought about, have been discovered in our time. The latent processes of disease in other organs are being investigated with such success, that medicine has advanced more in the last forty years than it did in the eighteen hundred previous. If you would take advantage of your times, you must work in this spirit; and neglecting systematic views, which will inevitably fail, you must scrutinise single portions of disease.

You must not write systems but monographs, and

be content to know that you too have added something to the material, which some future architect, in a happier age, will use to raise a goodly edifice.

The great advance in practical medicine, is owing mainly to the encouragement given to the study of morbid anatomy. The prescient mind of Lord Bacon marked this among his desiderata. In our times this study has been conducted under two views.

In the first, the morbid structures are considered purely anatomically, and are classed like any other subject of natural history. This has been done by Andral, Meckel, and nearly all the Germans.

Under the second, diseased structure is always considered with relation to the symptoms which mark its formation. Portal, Baillie, and Cruvelhier, have given their authority to this as the best mode of viewing this important subject. Both have their advantages, and perhaps the student should look on morbid anatomy from both points.

If he looks at morbid structure, with the eye of an anatomist merely, the study will have infinite charms for him. It is, in the first place, more regular and uninterruptedly progressive. Then it illustrates the great laws of the vital force which are deduced from a consideration of healthy structure in the animal range. The mind is pleased to find order in disorder.

The works of the German and the French schools, of Meckel, Andral, and Serres, tend to prove that

morbid productions are repetitions of normal structure, having the same ratio to the latter, that defective forms have to symmetrical organs. That healthy tissues degenerate by disease into the early structure of the embryo, or the regular structure of some of the lower animals. In a word, diseased formations are reducible to those laws—few, simple, and grand, which regulate all vital phenomena.

If, on the other hand, the student shall consider diseased structure with relation to symptoms, the pursuit is full of difficulties and repetitions; and its reward will not be in the study itself, but the end—that it will make him a practical physician. In prosecuting the study with this view, he will find the same morbid production marked by symptoms, varying according to the organ in which it is seated. Here the internal characteristics are subservient to the external signs of disease; while in the naturalistic view of morbid anatomy, there is a systematic roundness, if I may be allowed the expression, of knowledge, which warps the mind from practical views, and is injurious to the advancement of practical medicine.

It is from the advocates of this school that we hear, that morbid anatomy is the foundation of medicine—it is, however, only one of its chief pillars. The object of the physician is not only to ascertain the ravages of death, but to prevent them; and this can only be done by marking the external signs of

the nascent hidden mischief, and by knowing the effects of remedies.

Logically speaking, that cannot be called the foundation of any thing on which the whole of its parts do not rest. Now medicine is neither based on a knowledge of symptoms alone, nor on that of morbid anatomy, nor on that of remedies. For an acquaintance, however complete, with any one of these, will not lead, as experience proves, to that of the others. But the true basis of medicine, on which all its parts repose, and from which they may be deduced, is a knowledge of *disordered functions*. Symptoms express their external signs, morbid anatomy their tendencies and results, and remedies become the excitants of function counteracting these tendencies, or removing these results, or obliterating these signs. The student is apt to believe that remedial agents act by infusing new powers into the frame; they simply modify and call forth, without adding a tittle to the functions of the body; so that it is neither the physician who plans, nor the remedy which *excites*, that are the proximate instruments of cure. The functions of the body alone effect this, allaying the tumult they had themselves raised.

When medicine has been based on a knowledge of symptoms chiefly, it has led to all the errors of the nosologists; when on that of morbid anatomy principally, it has paralysed practice, and the mind, despairing of opposing the ravages of disease, has, as in

France and Germany, been content to suggest ptisannes, and to look on. When the knowledge of remedies has been made the great foundation of physic, the result has been the grossest empiricism, with all its uncertainties and boldness: and this feature has, till within the last few years, been the characteristic of English medicine, which exhibits more instances of violent transitions in its practice than any other.

In the present imperfect state of medical knowledge—in the absence of those leading ideas of disease, from which its whole nature will one day be strictly deduced—the physician is compelled to search into four series of experiments and observations, in order to eke out his knowledge, and to fit himself for practice.

I. He must know the action of remote causes; such as that of elemental agents—food, emotion, &c. —on the frame.

II. He must know the value and signification of external signs, or symptoms; as indicating disordered function.

III. He must know the nature and tendency of disordered functions, in producing disordered structure; that is, morbid anatomy.

IV. He must, lastly, know how the individual is affected by remedies.

The knowledge of remote causes, shews the circumstances under which the disease has arisen, and

points to its probable nature; that of symptoms, ascertains its seat; morbid anatomy, exhibits its tendencies; and the action of remedies keenly watched, declares the capacities of the constitution, and measures its powers of strength or feebleness.

Whenever any one of these sources has been neglected, and the others unduly appreciated, practical medicine has been retarded. Thus, from the time of Sauvages to Mason Good, the era of nosology, medicine was made to rest on a knowledge of the external characters of disease chiefly; and the result was, that the curative indications were grounded on hypothesis, instead of a knowledge of disordered functions, well ascertained. Thus a set of symptoms were grouped under the term putrid fever; the abstraction putridity was speedily converted into a reality; the labouring organs were overlooked; and antiseptics prescribed to subdue the hypothetic putrid element.

The undue appreciation of morbid anatomy, at the expense of remedies and symptoms, in Germany especially, and in France partially, has raised up in our day a sect, who declare each symptom to be a separate malady, and each particle of a drug a powerful agent. It would be no difficult task to trace the origin of this, and all other systems so arising, to the temper and mental habits of the age and country in which they spring:—they express, in exaggerated terms, its wants and deficiencies.

And now I have fulfilled the object which I had in view, in unfolding that method, and some of its results in medicine, which has given such an impulse to every other department of science: and the survey to myself has not been without its lesson. It has shown me how painfully slow is the advance of human knowledge, and how vast the distance between our hopes and our possessions: and as I endeavoured to track the workings of master-minds, I observed that each felt the insignificance of man amid the might of nature; and that he who looked most loftily, tempered his gaze with such humility, as to see nothing in his magnificent acquisitions but a few shells gathered on the shores of an unknown ocean. And this estimate of human powers, I thought, should be a bar against the indulgence of all those envyings and heart-burnings that too often embitter the professional career.

And, then, if I followed them into the recesses of their study, I learnt that knowledge not only fills but purifies the understanding—that, in their communing with nature, their minds had insensibly imbibed her influences—that their industry, like hers, was calm, unobtrusive and incessant—an instinct rather than an effort, and its reward the gratitude of mankind. If their lives were chequered with the good and evil of our lot, I saw that they sustained the trials of prosperity with honour, and the sharp strokes of adversity with dignity. The conscious-

ness of duties discharged, and the occupations of their career alleviated private griefs; while the contemplation of the serenity and steadfastness of nature prepared the heart for those higher and holier thoughts, without which there is indeed no repose.

THE END.

PRINTED BY STEWART AND MURRAY, OLD BAILEY.

26/6/79

Dead 7/83

1/1/40